THE UNIVERSITY OF MICHIGAN
A. ALFRED TAUBMAN COLLEGE OF ARCHITECTURE + URBAN PLANNING

Programs + Course Descriptions
2003–2004

THE UNIVERSITY OF MICHIGAN BULLETIN
Vol. 32 No. 1

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2003–2004

This Bulletin provides an overview of policies, procedures, programs, and courses. If you are planning to visit campus, tour the facilities, and meet with faculty, we encourage you to contact the College in advance of your visit.

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THE UNIVERSITY OF MICHIGAN BULLETIN
Volume 32, Number 1
June 4, 2003

The University of Michigan Bulletin
(USPS 651-660) is published six times
per year in the months of June, July, August,
September, October, and November by:
Marketing Communications
University of Michigan
200 Hill Street
Suite 2000
Ann Arbor, Michigan 48104-3297
Periodicals rate paid at Ann Arbor, Michigan

POSTMASTER SEND ADDRESS CHANGES TO:
The University of Michigan
A. Alfred Taubman College of
Architecture + Urban Planning
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Nondiscrimination Policy Statement

The University of Michigan, as an equal opportunity/affirmative action employer, complies with all applicable federal and state laws regarding nondiscrimination and affirmative action, including Title IX of the Education Amendments of 1972 and Section 504 of the Rehabilitation Act of 1973. The University of Michigan is committed to a policy of nondiscrimination and equal opportunity for all persons regardless of race, sex, color, religion, creed, national origin or ancestry, age, marital status, sexual orientation, disability, or Vietnam-era veteran status in employment, educational programs and activities, and admissions. Inquiries or complaints may be addressed to the University's Director of Affirmative Action and Title IX/Section 504 Coordinator, Office for a Multicultural Community, 2072 Administrative Services Building, Ann Arbor, Michigan 48109-1432, (734) 763-0235, TTY 734-647-1388.
For other University of Michigan information call (734) 764-1817.

Campus Safety

Each year, the University of Michigan prepares an "Annual Security Report" and publishes it in the Campus Safety Handbook. The report, which is issued each October 1, contains detailed information on campus safety and security policies, procedures, and programs, including information on: emergency services, security telephone numbers, sexual assault policy, stalking laws, handling obscene phone calls, sexual harassment policy, dealing with workplace violence and threats, police agencies, health services, counseling services, safe transportation after dark, safety tips, and alcohol and drug policies and programs. The report also includes statistics concerning crimes on campus. If you would like to receive a complete copy, visit the University of Michigan Department of Public Safety website at www.umich.edu/~safety/ or call (734) 763-3434.

A. Alfred Taubman College of Architecture + Urban Planning Policy Statement for Students with Impairments

Taubman College of Architecture + Urban Planning desires to meet the educational needs of all persons, including those with physical or perceptual limitations, who are interested in the study of architecture and/or urban planning. The College will advise any applicant and develop, for both the prospective student and the program, a realistic assessment of all issues and circumstances that might be encountered in undertaking the program and fulfilling the degree requirements.

Notice

A. Alfred Taubman College of Architecture + Urban Planning strives for accuracy in this Bulletin, all policies, procedures, programs, and courses are subject to change without notice.

The Regents of the University

David A. Brandon, Ann Arbor
Laurence B. Deitch, Bingham Farms
Olivia P. Maynard, Goodrich
Rebecca McGowan, Ann Arbor
Andrea Fischer Newman, Ann Arbor
Andrew C. Richner, Grosse Pointe Park
S. Martin Taylor, Grosse Pointe Farms
Katherine E. White, Ann Arbor
Mary Sue Coleman (ex officio)

Message from the President

Welcome to the University of Michigan, one of our country's great public universities. One of the many reasons I am thrilled to be part of this university community is because of its long-standing commitment to diversity. I firmly believe that we can learn some of life's most important lessons from each other. The more varied the perspectives represented, the richer our education. Our differences—whether they be the academic questions that engage us, age, economic background, gender, or race, to name just a few—bring a buoyancy to our campus community and help create the intellectual vitality that makes Michigan internationally renowned.

Since its founding more than one hundred and eighty years ago, the University has aspired to provide an outstanding education to a diverse student population. Former President James B. Angell, in his 1879 commencement address, said, "Good learning is always catholic and generous . . . It frowns on caste and bigotry. It spurns the artificial distinctions of conventional society. It greets all comers whose intellectual gifts entitle them to admission to the goodly fellowship of cultivated minds. It is essentially democratic in the best sense of that term."

Several years ago, Michigan's faculty, through the University Senate, reaffirmed its commitment "to recruiting and maintaining a culturally and racially diverse student body and faculty that are representative of contemporary society, and to assuring that these diverse influences are respected and incorporated into the structure of the University."

I am proud to belong to an academic community that historically has embraced diversity and is as committed today to this ideal as it was during the days of President Angell. I invite you to join me in supporting Michigan's ongoing efforts to promote an appreciation of and openness to the viewpoints and contributions of others.

Sincerely,

Mary Sue Coleman
President

Message from the Dean

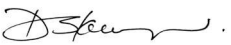
The A. Alfred Taubman College of Architecture + Urban Planning is pleased to present our annual bulletin as part of your toolbox for understanding who we are and what we have to offer. We hope you find the information helpful in navigating our programs, faculty, courses, and resources. Words and images, however, are not always enough. If you are considering applying to one of our programs, we urge you to plan a visit.

We are dedicated to the professional education of architects, urban planners, and urban designers. Research and advanced degrees are offered through two doctoral programs. There is also an undergraduate pre-professional Bachelor of Science program in architecture.

The College is proud to be a part of one of the premier institutions of higher education and research in the world. The University of Michigan is an international seat of learning, with multiple centers of academic excellence at the undergraduate, graduate, and doctoral levels, and cutting edge research and scholarship in every academic field. Many of our programs, schools, and colleges are ranked among the top ten in the country.

We are committed to both enduring values and emerging imperatives. There is a long and venerable tradition of design, scholarship, community service, and research. In many ways architectural research, especially in building technology, was founded at the University of Michigan in the middle of the last century. The interest in architectural design is matched by an equally strong interest in urbanism from both an urban planning and urban design perspective. Issues that compel us include aesthetics, tectonics, sustainability, environmental justice, social equity, and community design and planning—especially in nearby Detroit.

The student body, staff, and faculty of the College is larger and stronger than ever, with over 650 women and men of diverse backgrounds, from different regions of the state, the nation, and the world, from different cultures, religions, races, ethnic groups, and sexual orientations. Our list of faculty has grown with the recent appointment of many new members. The visiting professor program—which brings eight distinguished faculty to the College every year—is one of the most robust in the country. We encourage and support lively inquiry and discourse on all issues that affect the built environment while maintaining an atmosphere that is simultaneously critical and tolerant, competitive and friendly, serious and fun. We hope you will consider joining us and adding your voice to this quest for excellence.



Douglas S. Kelbaugh FAIA
Dean

A. Alfred Taubman College of Architecture + Urban Planning

Introduction

The condition of humanity is intimately connected to the environment in which we live. The primary mission at A. Alfred Taubman College of Architecture + Urban Planning is to prepare students for positions of responsibility within a wide spectrum of organizations and institutions whose goals are to improve the quality of our lives and environment. In pursuit of the ideal, the College offers a complement of programs, ranging from pre-professional to post-professional education.

Taubman College at the University of Michigan has a long educational tradition that combines design and technology. Today, it continues to foster a broad view of architecture and urban and regional planning in the context of a major research university where interdisciplinary initiatives are encouraged and supported.

The programs of our College are distinct but united by concern for the physical, constructed aspects of our environment. Industrial production, respect for craft, and the desire to serve are deeply rooted in the region. The Architecture Program emphasizes the physical realization of ideas—where priority is placed not upon theory or practice in isolation, but in concrete and poetic possibilities of their integration. The hallmarks of a Taubman College education in architecture are integrated and comprehensive courses that value material sensibility and the process of building, as well as the history and theory of architecture and urbanism. The Doctoral Program in Architecture, one of the first established in the nation, develops these values and ideas at a more scholarly level, while fostering research.

Both the Urban + Regional Planning Program and the Urban Design Program give students the opportunity to do significant interdisciplinary work that emphasizes collaboration with local communities. This collegial community of inquiry is generously supported by the resources of the University of Michigan. Studying urban planning and urban design at Michigan prepares students for positions of leadership and management in public, private, and non-profit policy and planning organizations, as well as for careers in research and teaching.

The University of Michigan has one of the largest alumni groups in the world. A. Alfred Taubman College of Architecture + Urban Planning maintains close contact with over 6,000 graduates in 60 countries throughout the world. These close connections provide the College with opportunities for applied research and provide students with opportunities for internships and jobs.

The University of Michigan is one of the world's most distinguished universities and is widely recognized as an international resources for learning, teaching, research, and service. The University established its position as a leader in higher education over a century ago by laying the foundation for the modern research university. With more than 6,400 faculty and 52,000 students at three campuses, it is one of two public institutions consistently ranked among the nation's best universities.

Degrees

A. Alfred Taubman College of Architecture + Urban Planning offers the following degrees:

- Bachelor of Science (2+2 year program in architecture)
- Master of Architecture (2+2+2 year program and a 2 year program for students entering with a B.S. in architecture or equivalent degree)
- Master of Architecture (3+ program for students entering with a non-architectural baccalaureate degree complete the degree in 3-1/2 years)
- Master of Urban Planning (2 year program)
- Master of Urban Design (1 year program)
- Master of Science in Architecture (2-1/2 term program)
- Joint/Dual Master's degrees in:
  - Architecture/Urban Planning
  - Architecture/Urban Design
  - Architecture/Business Administration
  - Architecture/Engineering
  - Urban Planning/Business Administration
  - Urban Planning/Law
- Ph.D. in Architecture
- Ph.D. in Urban, Technological and Environmental Planning (UTEP)

History

Courses in architecture were first offered at the University of Michigan in 1876 by William Le Baron Jenney. Architecture was recognized as a formal course of study in 1906 when a program was established in the Department of Engineering with Emil Lorch as chair. Under his leadership, the program grew steadily in size and stature and, in 1913, the University granted the program departmental status and full control of its curriculum. Lorch continued to shape the program and, in 1923, was instrumental in bringing Eliel Saarinen from Finland to teach at Michigan. In 1931, the College of Architecture was established as a separate entity with 370 students and 27 faculty members.

Wells Bennett succeeded Emil Lorch as director of the College in 1937 and became Dean a year later. In 1939, the College's name was changed to the College of Architecture and Design, the program in architecture was expanded to a five-year curriculum and landscape architecture was added. In the mid-1940s, Michigan was one of the few schools that considered research to be a necessary element of architectural education. By founding the Architecture Research Laboratory in 1948, the College took a pioneering step in integrating design, construction, technology, planning and research. A graduate program in urban planning—which awarded a Master of City Planning degree—was introduced in 1946. This program was one of the first of its kind in the country.

Visual arts courses, originally offered to advance the training of architects, began attracting students from other fields, leading to the creation of separate Departments of Art and Architecture in 1954. The College housed these two departments, along with the smaller Department of Landscape Architecture, for the next decade. In 1965, Landscape Architecture was moved to the School of Natural Resources as a result of its growing relationship to the earth sciences.

The five-year architecture program was modified to a two+two+two year program in 1967 and, in 1968, a Department of Urban Planning was created within the College of Architecture and Design. That same year, a university-wide Ph.D. Program in Urban and Regional Planning was established in the Office of the Vice President for Academic Affairs with faculty from 12 schools and colleges. In addition, Michigan became the first American school to offer a Doctorate of Architecture degree the following year. The introduction of the doctoral program was a natural development due to the history of architectural research at the College.

As the College continued to grow, proposals were developed to provide new facilities and, as part of the planning process, the educational and administrative structure of the College was reassessed. This led to the reorganization of the College of Architecture and Design into a College of Architecture and Urban Planning and a School of Art in 1974. Two new programs, architecture and urban planning, replaced the former departments. At the same time, the research mission of the College was broadened and the Architecture Research Laboratory was reconstituted into the Architecture and Planning Research Laboratory. The new Art and Architecture Building, housing the College of Architecture and Urban Planning together with the School of Art and Design, opened for classes in 1974 on UM's North Campus.

Although the College has remained in the same physical location since 1974, it continues to evolve. In 1982, a sociotechnical focus was added to

the doctoral program in urban and regional planning which then became the Ph.D. Program in Urban, Technological, and Environmental Planning (UTEP) and by 1989 the program was from Rackham Graduate School to the College. The Doctoral Program in Architecture was also modified in 1989 and the degree designation changed to a Ph.D., giving the College a more comprehensive program of professional and doctoral education in both architecture and urban planning. In 1992, the two individual programs in urban planning and UTEP were merged to form the Urban and Regional Planning Program (URP), which is now under a single chair with a coordinator of doctoral studies.

Since the mid-twentieth century, the College has been headed by Deans Philip N. Youtz (1957–1964), Reginald F. Malcolmson (1964–1974), Robert C. Metcalf (1974–1986), Robert M. Beckley (1987–1997), James C. Snyder (interim 1997–1998) and Douglas S. Kelbaugh appointed in 1998.

Lectures, Exhibits, Publications, and Conferences

The College has developed an ambitious program of lectures, exhibitions, publications, and conferences for the enrichment of students and local professionals. This includes the following annual events:

RAOUL WALLENBERG LECTURE

Raoul Wallenberg, a 1935 graduate of the University of Michigan College of Architecture and Urban Planning, has been called one of this century's most outstanding heroes. In 1944, as First Secretary of the Swedish delegation in Budapest, he is credited with saving more than 100,000 Jews from death at the hands of the Nazis. The following year, Wallenberg was captured by the Russians. Although his fate is unknown, rumors persist that he is held in Russia even today.

To honor and remember this outstanding alumnus, Sol King, a former classmate of Wallenberg's, initiated the Wallenberg Lecture Series in 1971. In 1976, an endowment was established to ensure that an annual lecture be offered in Wallenberg's honor focusing on architecture as a humane social art. The lecture annually honors an individual whose legendary acts of compassion exemplify the power of an individual to make a difference.

JOHN DINKELOO MEMORIAL LECTURE

John Dinkeloo graduated from the College in 1942 and became one of its most distinguished alumni. He was a gifted architect, an outstanding designer and an enthusiastic student of materials. He was also an inventor, who in the course of designing, developed the neoprene gasket, several different types of glass and cladding systems as well as pioneering the use

of Corten and exposed steel. In many ways he epitomizes a spirit of inspired invention and design of which the College is extraordinarily proud.

As a partner of Eero Saarinen, he helped design a number of significant projects, including the Jefferson Memorial Arch in St. Louis, the Morse and Stiles Colleges at Yale University, and the TWA Terminal at Kennedy Airport and the Dulles International Airport in Washington D.C. In 1961, he formed a partnership with Kevin Roche and went on to build a reputation of international standing with the design of projects such as the Oakland Museum, the headquarters for John Deere and the Ford Foundation Building in New York.

The first Memorial Lecture was given in 1984 with the generous support of an endowment created by faculty and friends and through the help of John's widow, Thelma Dinkeloo. She has encouraged the College to look across the wide field of architecture and to search out designers who are working internationally to develop ideas and concepts with the same fervor that her late husband demonstrated.

GUIDO A. BINDA EXHIBIT AND LECTURE

The Guido A. Binda Lecture Series was established at the College in 1997 to bring special lecturers to campus on an annual basis for the benefit of students, faculty and the public. Alumnus Guido Binda, BSAA'31, maintained a distinguished architectural practice in western Michigan specializing in the design of public school buildings.

CHARLES AND RAY EAMES LECTURE

The Charles and Ray Eames Lecture Series is an annual event at the College which celebrates design and the Eames legacy. It is sponsored by Herman Miller, Inc. of Zeeland, Michigan, manufacturer of Eames furniture designs for almost 50 years. Nearly everyone has sat in a chair designed by the Eames but their influence goes far beyond the "potato chip" chair. Charles Eames came to the Cranbrook Academy of Art at the invitation of the famous Finnish architect Eliel Saarnien, who taught at UM before his Cranbrook design responsibilities. At Cranbrook, where Charles and Ray met and married, Eames set up a department of experimental design in the late 1930s and early 1940s. Not only did the Eames influence furniture design, but they researched practical methods for molding plywood, aluminum, and wire chairs for mass production. They also created the first wave of multimedia presentations using multiple images and multi-sensory stimuli.

Internationally renowned architects, planners, designers, critics, and scholars who have recently lectured and exhibited at the College include:

- Glenn Murcutt, Architect, Sydney (2002 Pritzker Prize Laureate)
- Eric Owen Moss, Architect and Director, SCIArc, Los Angeles
- Franz Dieleman, Professor of Urban and Rural Geography, Utrecht University, Utrecht
- Lindy Roy, Architect, Roy Design, New York City
- Brian MacKay-Lyons, Architect, Halifax
- Max Bond, Architect, Davis Brody Bond Architects, New York City
- Farshid Moussavi/Alejandro Zaera Polo, Foreign Office Architects, London
- Dell Upton, Architecture Historian, UVA, Charlottesville
- Anthony Vidler, Dean, Cooper Union School of Architecture, New York City
- Helmut Jahn, Architect, Murphy/Jahn Architects, Chicago
- Mark Wamble/Dawn Finley, Architects, Interloop A/D, Houston
- Tod Williams/Billie Tsien, Architects, Tod Williams Billie Tsien and Associates, New York City
- Winy Maas, Architect, MVRDV, Rotterdam
- Michael Speaks, Head, MR+D Program, SCIArc, Los Angeles
- Dave Hickey, Writer and Critic, Las Vegas
- Manuel Castells, Professor of Sociology and City and Regional Planning, University of California, Berkeley

Exhibits of work from distinguished professionals rotate in our College galleries. In addition, there are exhibits of student and faculty work.The student exhibit at the Slusser Gallery is an annual event in keeping with the tradition established by former College Architecture Professor Eliel Saarinen. Work from the pre-architecture, undergraduate and graduate design studios is exhibited. There is no better indicator of the quality of a program than the work of its students. Fundamental to the architectural design studio today, as well as during Saarinen's time, is the emphasis on critical discourse in the design process. Innumerable conversations and debates help form the final studio product, a process vital in detail and precision to the teaching of design. This annual exhibit represents a faculty and student body dedicated to the highest standards of excellence.

College publications encompass a diverse array of both faculty and student work. The College sponsors the *Michigan Architecture Papers,* a series of books that records the work of important practicing architects and events at the University of Michigan. Each year, a group of students under the direction of a faculty member produce *Dimensions.* This journal offers a reflection of what the students and faculty at Taubman College are thinking, and its effect on their production. It's a sideways glance into their collective activities of design, criticism, and research. *Portico,* the College's alumni newsletter, is published three times annually and reports College news and

events, as well as alumni updates. Other College publications include a book about the annual Detroit Design Charrette and the Urban and Regional Research Collaborative's (URRC's) *Working Paper Series.*

Faculty and students also plan and organize educational conferences, symposia and meetings that draw regional, national and international audiences. Professionals and scholars from around the world regularly visit the College serving as critics, jurors and seminar leaders. Individual faculty members conduct field trips to major urban centers and other notable sites and buildings as part of our instructional programs.

Building Design Workshop

Since 1994, a series of design and build projects in the Architecture Program has helped to integrate the skills needed for successful design, construction, and professional practice. These projects are "real" in the sense that they require students to meet with clients and building officials internal and external to the University, understand the codes and laws that apply to their projects, generate alternatives based upon cost estimates and budgets, and monitor the process and timing of delivery. Often, the students are involved hands-on in the fabrication of projects from the initial generative conceptualization of the design. Recent projects have included UM's Angell Hall Courtyard Computing Site and the Art and Architecture Building Faculty/Staff Lounge and IT Space.

Outreach

The Community Partnership Center gives students in Taubman College opportunities to provide planning and design assistance to nonprofit organizations in Detroit, Ann Arbor, and other Michigan communities. Through the outreach opportunities, students gain valuable experience while assisting neighborhoods in areas such as community development, physical planning, strategic planning, geographic information systems, parks planning, housing planning and design, economic development, and transportation projects.

There are several ways for students to get involved, gain hands-on experience, and contribute to community-building efforts underway at the University:

- Register for a capstone course in urban planning or take a community-based studio in architecture or urban design.
- Work on a community-based professional project or planning thesis.
- Participate in the annual Detroit Design Charrette
- Apply for membership in the Michigan Neighborhood AmeriCorps Program.

- Apply for the HUD Community Development Work Study Program (reserved for incoming M.U.P. students only).
- Serve as an intern at a community-based organization
- Join a research project that produces findings useful for planning and design practice.

Research

Research at Taubman College of Architecture + Urban Planning has a rich and diverse history. Since the 1940s, when faculty conducted research on prefabricated housing, sponsored research activity has been an important part of the College's mission. Each of the academic programs encourages and supports the research and scholarly activities of its faculty and students. General areas of inquiry conducted in the College have included work in design research and building, environmental planning, building technology, facility and energy management, human behavior and the environment, computer aided design, post-occupancy evaluation, policy planning, security planning, housing and facilities for special populations, geographic information systems, transportation studies, economic development, planning processes, international urban development, the study of built form and land use, and city and neighborhood design.

The Urban and Regional Research Collaborative (URRC) is an umbrella organization for urban and regional research within Taubman College. The URRC provides a forum for research synergy and exchange, as well as enhanced visibility for the College's urban and regional research. In addition, the URRC provides collaborative space in the building for students and faculty working on research projects. Research under URRC concerns a wide range of topics. These include clusters of projects in environmental design and security as part of the Studies in Urban Security Group, transportation studies, urban economic development, urban design, urban and regional transformation in the U.S. and elsewhere in the world, and assessment of the quality of urban life.

Support for the research activities of the College comes from public agencies, business and industry, foundations, the University, special user groups, alumni , and corporations. Other partnerships with professional architects and planners are established for specific research endeavors.

Charrettes

A charrette is an intensive workshop where nationally renowned and local design experts work in teams with faculty and graduate students to produce design solutions to difficult urban problems. Up to 75 participants work for four or five days in an atmosphere of creative competition to develop specific design proposals. The effort culminates on the evening of the last day with a public presentation at a prominent venue in Detroit, to which all involved parties, including citizens, business leaders, the media, and public officials, are invited. Each of the teams includes 12–15 students from architecture, urban planning, landscape architecture, and art programs at UM and other local institutions (e.g. Cass Tech, Detroit Mercy). Depending on the site and problem, economists, historians, community representatives, or public artists also participate.

During the balance of the winter term, college faculty members lead follow-up studios to develop the general concepts and specific downtown building projects in greater detail. The charrette work concludes with the preparation and publication of a book during the spring/summer. The book is widely distributed and available as a tool to help the public and private sectors refine and implement some of the proposed concepts. The charrette presentations are also made available on the College website at http://www.tcaup.umich.edu/charrette/.

Past charrettes have focused on the following areas:

- 2003—Reflecting the Riverfront
- 2002—Detroit Downtown
- 2001—Grand River Avenue
- 2000—Michigan at Trumbull: Turning the Corner?
- 1999—Lower Cass: Corridor, Neighborhood, District?

Facilities and Resources

The Art and Architecture Building provides nearly 240,000 square feet of space equally divided between two academic units of the University: A. Alfred Taubman College of Architecture + Urban Planning and the School of Art and Design. The building, opened in 1974, includes a range of excellent facilities including generous studio space, galleries, classrooms, well-equipped laboratories, a 150-seat lecture hall, conference and seminar rooms, faculty and administrative offices, and extensive workshops arranged around a central courtyard. The design studio, three-fourths of an acre in area, is the largest in the country. The building conforms to all barrier-free design regulations and handicap parking is available.

Computer access is widely available and distributed throughout the building. The adjacent Media Union provides additional advanced technology and communications and houses the library collections for art, architecture, urban planning, and engineering; state-of-the-art laboratories for visualization, virtual reality, video, music, and dance; and an exhibit gallery.

Architecture/Planning Studio

The architecture/planning studio, located on the third floor, offers 30,000 square feet of continuous workspace and is the largest academic studio in the world. The large, open plan is configured with modular workplaces for each student electing a studio course. All tables and storage units are movable in order to permit easy adaptation to a variety of class sizes, projects, and methods of instruction. Seminar rooms and flexible design review spaces are located at each end of the studio.

Computing Clusters

Teaching and research computing resources are available for student use in various locations within the Art and Architecture Building.

Faculty-designed, student-built computing clusters occupy each end of the design studio and are available to students 24 hours a day. The studio's wireless network also allows students to bring their personal computers and access the College's shared resources from individual studio desks. The University-supported public computing site on the second floor has additional computers that can be reserved for classroom use as well as on a drop-in basis for independent graphic and computer-aided design studies. Additional computing labs support specialized functions and/or programs in the building. These facilities include building technology instruction and applications, Geographic Information Systems (GIS) research and instruction, and doctoral program research and instruction.

A variety of printers, scanners, plotters, CD-burners and other peripherals are available in different locations throughout the building.

Students may also access other public computer sites on campus, including the Media Union across the street.

Media Union/Library

The Media Union, provides students with access on a drop-in basis to 360 computers running Solaris, dual-boot Windows XP/Linux, and Mac OS X. The Media Union also provides an incubator environment for faculty and students involved in projects exploring existing or emerging digital technology. The Media Union Programs staff, working with faculty and students, provides an array of resources in specialized facilities including the:

- 3D Lab, for creating multi-dimensional images using computer modeling and resources such as the GeoWall, 3D printer, render farm, and an Onyx-driven CAVE environment;
- Learning Technology Lab, for support with CourseTools and usability/accessibility testing for software and website development;
- Collaborative Technology Lab, which is developing the next generation of web-based instructional and research tools;
- Digital Media Tools Lab, which includes the Digital Asset Management System (DAMS) Living Lab, for exploring existing and emerging digital asset management technologies;
- Smart Studios—a group of video, audio, and electronic music recording studios, a media conversion facility, and digital video editing suites.

In addition, there are four sophisticated computer instruction classrooms and several meeting rooms, including two that are equipped for videoconferencing.

The Media Union houses the core library collections for Taubman College of Architecture and Urban Planning, the School of Art and Design and the College of Engineering. Located directly across Bonisteel Boulevard from the Art and Architecture Building, the library contains approximately 80,000 volumes relating to art, architecture, design, and urban planning alone. In addition the library collects over 400 journals in architecture, urban planning, and art. It is a place to meet with students from other colleges, explore new ideas, and find information addressing both the aesthetic and technical aspects of design. The facility includes a rare book collection with rare and limited-edition books and photographs and a visual resource collection with over 100,00 35mm slides, videos, and blueprints. The library provides access to an extensive array of online resources including catalogs, full-text journals, image databases, and the World Wide Web. Subject area librarians are happy to assist students in their research. For help with resources related to architecture and urban planning contact Rebecca Price (rpw@umich.edu or 647-5274) or go to the library webpage at http;//www.lib.umich.edu/ummu/.

The library at the Media Union is part of the University of Michigan's extensive library system, one of the largest research libraries in the world. The Harlan Hatcher Graduate Library is the University's primary research collection for the humanities and social sciences. The Graduate Library collection numbers approximately 2.5 million volumes including 10,000 journals and periodical subscriptions written in several hundred languages and covering a broad array of subject specialties. In addition, these collections are supported by strong holdings in U.S. and foreign government publications, an outstanding collection of maps and related materials, manuscripts and special collections, over 1.5 million items

in microformat, and a strong collection of reference and bibliographic sources in print and machine-readable formats. More information on the University's library system is available at http://www.lib.umich.edu/.

During the academic year, the Media Union is open 24 hours a day, 7 days a week. For more information visit the website at http://www.ummu.umich.edu/.

Art and Architecture Shop

The shop is a 6,000 square foot facility located on the first floor, in the southwest wing of the Art and Architecture Building. A fully equipped wood shop with several stations of the most common machines, the shop also has a good complement of plastics and metal working equipment and two CAD-driven laser cutters for wood, paper, and plastics. The shop staff of professional model makers oversee and guide all work in the shop and they conduct annual training programs for students. Shop hours extend into the evenings and part of the weekend for the convenience of students.

Print, Plot + Copy Shop

Located on the second floor of the Art and Architecture Building, the PP+C is a full-service retail digital printing, plotting, and copy center specially-equipped to cater to the needs of the College's architecture and planning students, faculty, and staff as well as clients from around the University.

PP+C services include color copying and digital color printing, large format digital output up to 42 inches wide, and black and white copying and digital printing. The Print, Plot + Copy Shop also provides a wide array of handwork services such as collating, folding, cutting, stapling, binding, and laminating.

The PP+C staff assists customers with UPS, DHL, and other carriers for ground and overnight shipments and can assist with copyright clearance. Students and faculty may also reserve and check out audiovisual equipment at the PPC.

The Print, Plot + Copy Shop produces and sell course packs, college publications, copy cards, postage, and a large selection of office, art, drafting, mailing, and computer supplies as well as beverages and snack foods.

All major credit cards, cash, checks, and university accounts are accepted and PP+C hours extend into evenings and weekends for the convenience of students and faculty.

Check the PP+C website at http://www.tcaup.umich.edu/ppc/ for a current list of services, supplies, and hours or operation.

Sustainable Building Technology Laboratory

The 7,000 square foot Sustainable Building Technology Laboratory (SBTL) is a unique resource for class use in group assignments or demonstrations, individual investigation by students or faculty and research in teaching methods in the area of building technology. Within the SBTL are specialized laboratories and areas:

ACOUSTICS LABORATORY

Supports classroom demonstrations, technical measurements and research in architectural acoustics.

BUILDING THERMAL UNIT SIMULATORS (BTUS)

The BTUS has test chambers with identical single zone building systems for heating and cooling. The computer-controlled environments allow for full-scale investigations of thermodynamic processes in areas such as heat transfer, mass thermal storage and comfort control. The system is also used for facility planning and design decision making.

SKY SIMULATOR

A 30' diameter hemispherical dome structure, representing an artificial sky, is used to perform daylighting studies under simulated clear and cloudy conditions in all building types and computer validation.

SUN AND SOLAR ANGLE SIMULATOR

The simulator is used to demonstrate the correlation between the time of year and solar exposure of a building for a given location on the earth.

MAPPING TABLE FOR WIND FLOW SIMULATION

The fluid mapping table uses water to simulate wind motion.

WEATHER STATION

Fully equipped and located on the roof of the laboratory, it consists of photometric and radiation sensors for measuring horizontal, global and diffuse illuminances, and irradiances of the four cardinal orientations and zenith.

FULL-SCALE PHOTOVOLTAIC SYSTEM

A 2.4 kW photovoltaic system on the roof demonstrates the technology, studies all aspects of roof integration and evaluates the utilization of generated electricity in the building to research potential technological implications, especially with regard to existing structures.

FULL-SCALE SIMULATION LABORATORY

This simulation facility is used for the photometric study and evaluation of office and industrial lighting systems for design applications. It provides quantitative photometric information on how different lighting systems and design approaches affect the visual quality and comfort of typical work environments. The 40' x 50' facility is capable of controlling ceiling height, floor area and window size, allowing for the controlled simulation and study of ceiling integrated lighting, furniture, integrated task lighting, and window aperture daylighting systems. It is also used for lighting and daylighting computer algorithm validation.

STRUCTURAL TESTING EQUIPMENT

A test floor is available for structural analysis. A complete set of test fixtures is available to conduct property investigations in wood, metals, concrete, and mortar.

COMPUTER LAB

Classroom instruction is supported with the latest hardware and software for acoustic, daylighting, and visualization of the luminous environment, thermal energy analysis, and structural and CAD applications.

Geographic Information Systems (GIS) Laboratory

Since its inception in 1989, the Geographic Information Systems (GIS) Laboratory has developed into an integrated network of GIS hardware, software and data. The geographic focus of this effort is on the State of Michigan. The laboratory maintains statewide electronic data sets on streets, city, hydrography and demography. The lab is a teaching facility as well, serving up to 40 students per semester. This lab facility is part of the larger University-wide system for support of spatial analysis, including the Map Library at the Harlan Hatcher Graduate Library. A recent multi-disciplinary initiative has been funded that will make GIS even stronger at the University of Michigan.

Enrollment and Student Profile—Fall 2002

ENROLLMENT

Undergraduate: 193
Graduate: 358
Total: 551

STUDENT PROFILE

	College-Wide	Undergraduate	Graduate
Women:	47%	53%	43%
People of Color:	4%	2%	5%
Michigan Residents:	47%	74%	31%
International Students:	24%	6%	33%

Student Organizations

There are several student organizations within the College. Each of these organizations has a mailbox at the Copy Center. APX, AIAS, and OAP have offices in the North Campus Commons.

Alpha Rho Chi (APX)

Alpha Rho Chi is a national professional architectural fraternity. The chapter has set as its goals: increasing members' awareness of different aspects of the profession, increasing contact with alumni, and sponsoring events in keeping with the chapter's goals.

American Institute of Architecture Students (AIAS)

The organization is composed of a national office and member chapters from all of the architecture colleges in the United States and one in Canada. The purpose of AIAS is to organize architecture students and combine their efforts to advance the science and art of architecture. The mission of AIAS is to promote excellence in architectural education, training, and practice, and to foster an appreciation of architecture and related disciplines among all persons.

AIAS undertakes a variety of programs and services each year to achieve these goals by providing students with the opportunities to communicate and interact with each other about topics concerning education and professional design.

The main AIAS event of each academic year is "Forum." This event is a national convention held the week of Thanksgiving vacation in a host city. Representatives from every AIAS chapter in the United States are present for a week of education, lectures, sightseeing, and fun.

AsiArch (Asian American Architecture Students' Association)

AsiArch is for Asian American architecture students. The group sponsors events such as lectures, panel discussions, exhibits, competitons, and social events to promote lively discussions of diversity in student life as well as in professional practice.

The Organization of AfricanAmerican Students in Art, Architecture, and Planning (OAP)

Formerly known as AfricanAmerican Students in Design (AASID), OAP was reorganized in 1990–91. Regular meetings—some with planned programs—are held throughout the year.

Student Initiatives Group (SIG)

The Student Initiatives Group, formed in fall 1996, encourages diversity and interaction in the College by sponsoring events designed to bring together all members of the College in a social and intellectual setting while fostering increased communication between participants. Events have included film showings, panel discussions on current topics of interest, presentations on social/professional responsibility, and guest lecturers

Urban Planning Student Association (UPSA)

UPSA is open to participation by every urban planning student and strives to integrate student needs and views into the decision-making process within the Program. UPSA also organizes social events and works to form strong relationships among all urban planning students.

Career Placement

The College assists current and graduating students in their job searches by posting job openings, maintaining files of job announcements, sending out a résumé book and scheduling on-campus interview sessions. The College has a solid reputation for producing well-trained, educated graduates and works closely with alumni and other professionals to assist them in meeting their personnel needs. The College also sponsors events to aid students in the development of a career strategy which will assist them throughout their professional lives. These events bring students together with alumni, professionals and recruiters from various firms. Also see "Internships and Career Services" in the Urban and Regional Planning Program section and "Internships" in the Architecture Program section of this Bulletin.

In addition, the University has a Career Planning and Placement Office which has an extensive library of related materials. Professional staff provide career counseling, placement counseling, referral services and information on student employment. Seminars are offered in résumé writing, the job search process, and interviewing skills.

Materials and Equipment

The College provides drawing tables, lockers, stools, and other essential furniture for the operation of classes. It is assumed that students using this equipment will bear in mind that it must be available to others and consequently will leave it in good condition. The student is responsible for providing all other materials except those furnished through the payment of lab fees. Unless notified otherwise, students are advised to purchase required supplies after arrival at the University when course elections have been established and materials lists are made known for the term's work.

Retention of Student Work

The faculty reserves the right to retain examples of student work, done in conjunction with class assignments, for purposes of illustration, instruction, and exhibition.

Student Appeal Procedure

It is the purpose of the appeal procedure to provide undergraduate and graduate students and faculty with a mechanism for review of student and faculty allegations about matters pertaining to student conduct, performance and status and/or faculty misconduct. The appeal procedure shall be available to both student and faculty members of Taubman College for review of grievances of academic matters, including, but not limited to:

1. All aspects of the degree process involving grading, evaluation, or status
2. Unjustified denial of student access to data or misappropriation of student data
3. Professional misconduct toward students
4. Unfair, discriminatory, or intimidating treatment of students, including sexual intimidation and discrimination due to disability
5. Discipline or other action taken as a result of allegations or findings of student academic misconduct involving plagiarism, cheating, fabrication, falsification of records or official documents, intentional misuse of equipment or materials, and aiding and abetting the perpetration of such acts

Procedure for Appeals

STEP 1

The first step is discussion of the grievance by the student and the faculty member. It is anticipated that most disputes can be resolved without recourse to other steps.

STEP 2

If not satisfied with the outcome of this discussion, either party may request time to discuss the problem with the appropriate Program Chair who will informally attempt to mediate and resolve the dispute.

STEP 3

If Step 2 fails to satisfy either party, he or she may request time to discuss the problem with the Dean of the College, who will informally attempt to mediate and resolve the dispute.

STEP 4

If Step 3 fails to satisfy either party, he or she may present a written grievance to the appropriate Program Chair requesting review by an appeal board. In the event the Program Chair is personally involved in the complaint, the written grievance shall be addressed to the Dean of the College.

STEP 5

Upon receipt of a written grievance, the Program Chair (or Dean) will appoint an ad hoc appeal board comprised of two faculty and two students to review the case. The Appeal Board shall conduct a hearing to hear the complainant's case and the respondent's case including the calling of witnesses for either or both sides. Upon consideration of the facts and circumstances of the case, the Appeal Board shall prepare a written recommendation to the Chairperson (or Dean) who will promptly inform the complainant and the respondent in writing of the results of the Appeal Board investigation.

STEP 6

If the decision is still not acceptable to either party, the matter shall be presented to the Executive Committee of the College who will make a final determination.

Guidelines for Appeals

It is the duty and responsibility of all faculty, staff and students in Taubman College to maintain equity and consistency in the application of College policies and procedures. The appeal procedures outlined above are designed to insure that each individual is provided with an opportunity for a thorough examination of any decision or action which that individual may perceive as arbitrary, capricious or unjust. The appeal procedures can achieve this objective only with the cooperation and good faith of all parties involved. Certain guidelines should be noted.

1. Every effort should be made to resolve disputes at the lowest possible step in the appeal procedure.
2. Written grievances should be filed promptly, as soon as possible following the action or decision from which the appeal derives. College officials will respond to appeals in a timely manner.
3. All written grievances should include all pertinent facts and information that substantiate the grievance. All decisions made in response to such grievances shall be made in writing and include the reasons and/or basis for each decision.
4. A graduate student teaching assistant involved in an allegation to be adjudicated shall enjoy the rights of faculty when the allegation concerns his/her performance in the exercise of his/her assigned duties. (Employment-related matters covered by the University contract with the Graduate Employees Organization are outside the jurisdiction of this College.)
5. When a student enrolled in another academic unit files a grievance against a member of Taubman College faculty, the Taubman College appeal procedures are followed. Conversely, when a student enrolled in Taubman College files a grievance against a faculty member in another unit, the procedures of that unit will be followed.

Student Web Resources

http://www.umich.edu/student_res.html

Academic Calendar
Schedule for current and upcoming semesters.
http://www.umich.edu/~regoff/calendar/calmenu.html

Tuition and Fees
http://www.umich.edu/~regoff/tuitmenu.html

Financial Aid
http://www.finaid.umich.edu/

Wolverine Access
Change your address; order transcripts; and access grades, financial aid, CRISP, and class schedules.
https://wolverineaccess.umich.edu/

Registrar
Diploma, disenrollment procedures, term grade reports, drop/add deadlines, final exam schedule, residency regulations, and more.
http://www.umich.edu/~regoff/

Student Services
Career programs, course information, support services, and financial aid.
http://www.umich.edu/student_serv.html

Counseling and Psychological Services (CAPS)
http://www.umich.edu/~caps/

Emergency Preparedness
http://www.umich.edu/~urel/prepare/

Housing
http://www.housing.umich.edu/

Libraries and Academic Resources
http://www.umich.edu/lib_resources.html

Computing on Campus
Where you can use a computer, how to get started using the University of Michigan Computing Environment (UMCE), and what technical assistance is available.
http://www.umich.edu/computing.html

University Health Service
Primary medical care services for currently enrolled U-M students, non-enrolled students, students from Flint and Dearborn campuses, alumni, faculty, staff, U-M retirees, spouses, domestic partners, and guests.
http://www.uhs.umich.edu/

Student Employment
http://www.finaid.umich.edu/Employ/

Campus Information Centers
http://www.umich.edu/~info/

Ann Arbor Area /Life on Campus
Maps and directions, campus safety, and housing.
http://www.umich.edu/campus_life.html

TCAUP Faculty and Staff
http://www.tcaup.umich.edu/facultystaff/facultystaff.html

Introduction

Architectural education at the University of Michigan prepares students to participate actively in the design of buildings and the physical environment. To effect change, an architect must understand the nature of the human problem in its environmental context, have knowledge of the techniques and technology of building, and possess the intellectual and aesthetic skills necessary for a creative synthesis of that information into meaningful and expressive design solutions.

As a result of momentous and rapid change in society, the planning, design, construction, and management of the built environment all demand an immensely varied range of skills. Design professionals, along with their associates in business, law, government, and the social and natural sciences are needed to foster a richly diverse and humane environment.

Employment opportunities for architectural graduates have increased in number and diversity. The skills and talents of the architect are required in professional practice, research, industry, education, and government. Within any of these areas, the architect's participation can range in scale from the design of building components and systems to urban design; while the specific task might include design development, materials research, administration, construction supervision, and consultation.

The architecture programs at Taubman College recognize the multiplicity and changing nature of future roles open to the architect. Whatever the exact nature of these roles might be, the programs are designed to prepare students to perceive the ordered relationship of people and their environment and to translate this order into design for the enrichment of human experience.

Accreditation

"In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit US professional degree programs in architecture, recognizes two types of degrees: the Bachelor of Architecture and the Master of Architecture. A program may be granted a five-year, three-year, or two-year term of accreditation, depending on its degree of conformance with established educational standards.

"Masters degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree, which, when earned sequentially, comprise an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree." (National Architectural Accrediting Board (NAAB), 1998 Conditions and Procedures).

The accreditation process provides periodic independent evaluation of the quality of the professional program as assessed from a national perspective. It provides assurance that graduates of the program are competent in architectural design, have a grasp of technical systems and requirements, are able to incorporate considerations of health and safety into design, understand the historical, human, and environmental contexts of architecture, and are adequately prepared for internship in professional practice.

The Master of Architecture degree is the program of professional study at the University of Michigan that is accredited by NAAB. A copy of the most recent accreditation report is available in the Architecture Program Office.

Architectural Licensing

In the United States, licensing of architects is the legal prerogative of individual state governments. However, due largely to the efforts of the National Council of Architectural Registration Boards (NCARB), guidelines for license examination eligibility and the exam itself are fairly uniform from state to state. Typically, a minimum of three years of experience and a professional degree in architecture are required before one can take the licensing exam. A license is not required in order to work in an architectural firm; but to have ownership in a firm or to use the title Architect legally, licensing is mandatory.

The state of Michigan is among the growing number of states that stipulate whether a professional degree—either a Bachelor of Architecture from a five-year program or a Master of Architecture from a six-year program—is required for registration. Students are advised that the Bachelor of Science degree offered by Taubman College is not a professional degree. The Master of Architecture degree is the professional degree offered by this College.

Internships

With the goal of preparing students for professional practice, the College has developed an innovative internship program. Each year during winter break, students are able to work in architectural offices throughout the United States, and during the summer vacation, there are opportunities for students to work worldwide. Other internships are initiated through our extensive network of alumni who are actively engaged in significant architectural practices in international settings.

Employment opportunities are available to international architecture students through a practical training program. Contact the International Center for necessary forms.

Organization of Programs

Taubman College offers the following degrees in architecture:

- Bachelor of Science
- Master of Architecture
- Joint/Dual Master's Degrees:
  - Architecture/Urban Planning
  - Architecture/Urban Design
  - Architecture/Business Administration
  - Architecture/Engineering
- Master of Science
- Ph.D.

The 2+2+2 Year Program

Architecture is a six-year professional program that is divided into three sequential two-year segments.

YEARS 1 AND 2: UNDERGRADUATE PRE-ARCHITECTURE

The first segment—Years 1 and 2 of undergraduate study—requires the completion of 60 credit hours, covering a broad range of liberal arts courses, which may be taken at the University of Michigan or at any other accredited university or community/junior college. Students are admitted to the Architecture Program in Year 3 of study.

Bachelor of Science

YEARS 3 AND 4: JUNIOR YEAR ADMISSION AND PRE-PROFESSIONAL DEGREE

The second segment, Years 3 and 4, consists primarily of required core courses in architecture, which the student takes while enrolled in Taubman College. The Bachelor of Science degree, a pre-professional degree, is awarded upon completion of all of the requirements of Years 1 through 4. In order to continue in Years 5 and 6, application to the Master of Architecture Program must be made at this point.

Master of Architecture

YEARS 5 AND 6: GRADUATE LEVEL STUDY AND MASTER OF ARCHITECTURE PROFESSIONAL DEGREE

The third segment, Years 5 and 6, includes 60 credit hours of graduate level courses in architecture and related areas. The student has considerable freedom in electing courses. The Master of Architecture degree, a professional degree, is awarded upon completion of all the requirements of Years 5 and 6.

3+ Program: Master of Architecture

Students with prior non-architectural baccalaureate degrees may apply for admission to the Architecture Program as graduate students through the 3+ Option. The same application procedure applies as in admission to Year 5.

Joint/Dual Master's Degree Programs

The following graduate programs link architecture and other professions. In each program, the applicant must have completed the prerequisite undergraduate education for admission to Year 5 of the Architecture Program and to the master's program in the joint/dual field.

ARCHITECTURE/URBAN PLANNING

This program combines Years 5 and 6 of the Architecture Program and the two-year Master of Urban Planning Program into a three-year/84-credit-hour program leading to the two degrees of Master of Architecture and Master of Urban Planning.

ARCHITECTURE/URBAN DESIGN

This program combines Years 5 and 6 of the Architecture Program and the Master of Urban Design program into a two and one-half year program leading to the two degrees of Master of Architecture and Master of Urban Design.

ARCHITECTURE/BUSINESS ADMINISTRATION

This program combines Years 5 and 6 of the Architecture Program and the two-year master's program in Business Administration into a three-year/90-credit-hour program, leading to the two degrees of Master of Architecture and Master of Business Administration.

ARCHITECTURE/ENGINEERING

This program combines Years 5 and 6 of the Architecture Program and the one-year Civil and Environmental Engineering graduate program in Construction Engineering and Management into a two and one-half year/75-credit-hour program leading to the two degrees of Master of Architecture and Master of Engineering.

Master of Science and Ph.D. in Architecture

In contrast to the Master of Architecture Degree, the Master of Science (M.Sc.) is a non-professional, non-terminal degree. It is designed to meet the need for post-professional education in applied research and advanced specialization in architecture. It is a 2-1/2 term non-studio program for those interested in a short, intensive program, particularly appropriate for mid-career professionals, individuals interested in pursuing a Ph.D. but who lack the skills for immediate pursuit of this degree, and persons who presently hold a professional degree in architecture and are seeking to broaden their knowledge and skill base to enhance their employment prospects. See the "Doctoral Program in Architecture" section of this Bulletin for more information.

The Ph.D. is designed for individuals who are interested in acquiring the knowledge and skills that are needed to conduct substantive, innovative, and original research that contributes to the theoretical and methodological foundation of architecture and to disseminate it through teaching, publication, and practice. These degree options are administered by the College's Doctoral Program in Architecture. See the "Doctoral Program in Architecture" section of this Bulletin for more information.

Bachelor of Science Degree

Years I and 2 (Freshman and Sophomore): Undergraduate Pre-Architecture Description and Objectives

The course work in Years I and 2 may be taken either at the University of Michigan or at any other accredited university or community/junior college offering the required courses.

The objectives of Years I and 2 are:

1. To increase the students' ability to understand, evaluate, and communicate ideas
2. To prepare students to make informed decisions regarding their academic and career goals
3. To provide a broad academic foundation of principles in subject areas considered essential to subsequent study in architecture

Admission Requirements

Freshman or pre-architecture transfer applicants to the University are advised to apply to the College of Literature, Science, and the Arts. Students are admitted to Taubman College in their junior year. Information on admission requirements, procedures, and application materials may be obtained from:

Office of Undergraduate Admissions
The University of Michigan
1220 Student Activities Building
515 East Jefferson Street
Ann Arbor, MI 48109-1316
Phone: (734) 764-7433
Fax: (734) 936-0740
Email: ug.admiss@umich.edu
Web: http://www.admissions.umich.edu/

All questions on admission and transfer credit should be directed to the above office. For questions on careers in architecture or requests for information about the Architecture Program, contact:

Architecture Program
A. Alfred Taubman College of Architecture + Urban Planning
The University of Michigan
2000 Bonisteel Boulevard
Ann Arbor, MI 48109-2069
Phone: (734) 764-1649
Fax: (734) 763-2322
Email: arch.admissions@umich.edu
Web: http://www.tcaup.umich.edu

Freshman Preferred Admissions

The College of Literature, Science, and the Arts and A. Alfred Taubman College of Architecture + Urban Planning have developed a program directed toward a limited number of highly-qualified entering freshmen who are interested in transferring to the Architecture Program during their junior year to obtain the Bachelor of Science degree. Candidates for preferred admission must have (1) a high school GPA of at least 3.5 (University of Michigan calculated) and (2) a total SAT I of 1300 or ACT composite of 29.

Students accepted for the preferred admissions program are guaranteed admission to Year 3 of the Architecture Program, provided they maintain an overall GPA of 3.0 during their freshman and sophomore years and complete the program requirements specified for Years 1 and 2 (a minimum of 60 credit hours), including studio art, English, mathematics, and physics. Participation in the preferred admissions program does not guarantee acceptance to Year 5.

Freshman applicants to the College of Literature, Science, and the Arts should indicate their interest in preferred admission on the application form obtained from the Office of Undergraduate Admissions. Transfer students to the University are not eligible for preferred admissions.

Architecture Program Requirements: Years 1 and 2

A student must complete a minimum of 60 credit hours in Year 1 and 2 including the following courses.

PRE-ARCHITECTURE/ART

Two studio courses (6 credit hours) in basic drawing and design. Students without technical drawing experience should elect one course that includes orthographic, axonometric, and perspective drawing. Appropriate architecture courses include UM Arch 201, Arch 202, and Arch 218.

ENGLISH

One course (4 credit hours) in English composition. UM Eng 124 or 125.

MATHEMATICS

One course (4 credit hours) in analytic geometry and calculus—functions and graphs, limits, derivatives, differentiation of algebraic and trigonometric functions, integration, and the definite integral. UM Math 115.

PHYSICS

Two terms of physics, lecture plus lab, (8 credit hours minimum)—laws of motion, force, energy and power, gas laws, heat, wave motion, sound, electricity and magnetism, and light and optics. UM Physics 125/127 and 126/128, or 140/141 and 240/241.

In addition to the courses required for admission to Year 3, a student must complete the following liberal arts distribution requirements in order to receive the B.S. degree. Each student is strongly encouraged to complete as much of this work as possible in Years 1 and 2. Classification of a course as Humanities, Natural Science, or Social Science is consistent with LSA policy, except that foreign language courses are considered as humanities and mathematics courses are considered as natural science.

COMPUTER SCIENCE

One course (3 credit hours) in computer programming, or computer-aided design or drafting. UM computer courses include Arch 411 and Arch 521.

HUMANITIES

Two courses (6 credit hours) selected from archaeology, English, foreign language, history of art, linguistics, musicology, philosophy, religion or speech.

NATURAL SCIENCES

One course (3 credit hours) selected from anthropology, astronomy, biology, chemistry, ecology, geography, geology, mathematics (beyond Math 115), or physiology. Students who have not taken a chemistry course in high school must elect chemistry.

SOCIAL SCIENCES

Two courses (6 credit hours) selected from anthropology, communication, economics, geography, history, linguistics, political science, psychology, or sociology.

Courses taken to fulfill junior year admissions and Bachelor of Science degree requirements may not be taken pass/fail.

Beyond the course and distribution requirements specified above, a student may take other courses as open electives to earn a total of at least 60 credit hours. Since the emphasis in Years 1 and 2 is on liberal arts, not more than 7 credits in non-academic or technical areas can be applied toward the 60 credit hour requirement.

Undergraduate Pre-Architecture Courses

A series of courses is offered at the undergraduate level at the University of Michigan designed specifically for students considering entering the Architecture Program their junior year. Arch 212 provides a general view and understanding of the profession and discipline of architecture. This course examines visual, cultural, historical, and philosophical aspects of the man-made environment. Studio courses Arch 201, Arch 202, and Arch 218 provide students with drawing and visual design skills primarily used in architecture and related fields. These three courses can also be taken to complete the Pre-Architecture/Art requirement for Year 3 admission.

Sample Schedule: Years 1 and 2

The following schedule is typical for students entering the University of Michigan as freshmen. Students in other institutions should plan equivalent programs. "Electives" include courses selected to fill distribution requirements, as well as open electives. "Arch" refers to courses offered through the Architecture Program.

YEAR 1: FRESHMAN

Fall Term	Credit Hours
*Eng 124 or 125 Introductory Composition	4
*Math 115 Analytic Geometry and Calculus I	4
*Studio based Pre-Architecture/Art	3
Electives	4
Total	15

Winter Term	Credit Hours
*Studio based Pre-Architecture/Art	3
†Arch 212 Understanding Architecture	3
Electives	9
Total	15

YEAR 2: SOPHOMORE

Fall Term	Credit Hours
*Physics 125 and 127 Mechanics, Sound and Heat (lec/lab)	5
Studio based Pre-Architecture/Art	3
††Arch 313 History of Architecture I	3
Electives	4
Total	15

Winter Term	Credit Hours
*Physics 126 and 128 Electricity and Light (lec/lab)	5
††Arch 323 History of Architecture II	3
Electives	7
Total	15

* Course must be completed prior to Year 3.

† Introductory open elective course offered by Taubman College for students not enrolled in the College.

†† Course required for B.S. degree. Students are strongly encouraged to elect History of Architecture in Year 2.

Academic Counseling

Students enrolled in the College of Literature, Science, and the Arts are advised to contact the following office for assistance in planning their programs:

LSA Office of Academic Advising
The University of Michigan
1255 Angell Hall
435 South State Street
Ann Arbor, MI 48109-1003
Phone: (734) 764-0332

Students in other UM units and students enrolled in other universities and community colleges are advised to contact the following office for assistance in planning their programs:

Office of Undergraduate Admissions
The University of Michigan
1220 Student Activities Building
515 East Jefferson Street
Ann Arbor, MI 48109-1316
Phone: (734) 764-7433
Fax: (734) 936-0740

Years 3 and 4 (Junior and Senior): Junior Year Admission and Pre-Professional Degree

Description and Objectives

Years 3 and 4 consist of a series of required sequential architecture courses at the undergraduate level elected during enrollment in Taubman College. The objectives of Years 3 and 4 are:

1. To provide a firm foundation in the vocabularies, principles, and interrelationships of a broad range of environmental design determinants essential to professional work in architecture.
2. To provide opportunities for the students to develop their basic skills, knowledge, perceptions, and insights in areas related to the built environment.

The Bachelor of Science (B.S.) degree, a non-professional baccalaureate degree, is awarded upon completion of all requirements of Years I, 2, 3, and 4. At this point students may choose:

I. To continue their architectural education at the graduate level by applying to Year 5 of the Architecture Program at Michigan, or by applying to a corresponding program in another accredited school of architecture.
2. To continue graduate education in a related field of study.
3. To gain professional work experience prior to returning to graduate studies.
4. To conclude their academic education with a view toward employment in a capacity in which architectural licensing is not required.

Admission Requirements

To be eligible for admission to Year 3 (junior year), a student must have completed, by the end of the spring term (June) preceding the intended fall term of entrance, the 60 credit hours described previously. Students with more than two years of college level work are also eligible for admission to Year 3. Students with non-architectural baccalaureate degrees should see the 3+ Option. Admission is limited to the fall term only. The College does not admit students at the Year 4 level.

APPLICATION PROCEDURE

Students seeking admission to Year 3 should obtain application materials from:

Office of Undergraduate Admissions
The University of Michigan
1220 Student Activities Building
515 East Jefferson Street
Ann Arbor, MI 48109-1316
Phone: (734) 764-7433
Fax: (734) 936-0740
Email: ug.admiss@umich.edu
Web: http://www.admissions.umich.edu

APPLICATION DEADLINE

A completed application form, together with a personal statement and official transcripts reflecting all course work, must be submitted to the above office by **February 1**. Students are generally encouraged to submit these materials in early January since fall term grades are usually not available until this date. The personal statement—as requested on the application form—is required of all Year 3 applicants. A statement is typically one or two pages in length. Its purpose is to provide the student an opportunity to explain his/her motivation and commitment toward architecture as guided by career goals and as evidenced by academic and work experiences, involvement in issues of the built environment and other personal activities and experiences.

Applicants are also strongly encouraged, but not required, to submit a portfolio as evidence of their graphic and design ability if they feel that submission of such material will strengthen their application.

EVALUATION

Eligible applicants are considered for admission on the basis of the following criteria:

1. Quality and content of all previous academic education
2. Other data, which indicates professional growth and motivation toward architecture—written statement of career goals, employment, record, letters of recommendation, portfolio, etc.

Students who have completed Years I and 2 (freshman/sophomore studies) at other universities or community colleges are evaluated on the same basis as those who have completed their studies at the University of Michigan.

Applicants are notified of the Admissions Committee decision early in April. Admitted students who are new to the University must pay an enrollment deposit fee by May I.

Portfolio Guidelines for Applicants to Year 3

Applicants to Year 3 are encouraged to submit evidence of their graphic and design abilities. Applicants should carefully select representative work, which illustrates their ability to think and communicate visually, and which demonstrates the range and depth of their familiarity with various graphic media and techniques. The Admissions Committee will consider this material as a supplement to (and not as a substitute for) the formal application, official transcripts and the written statement of goals.

Typically a I-I/2 hour portfolio workshop is offered in January. Contact the Architecture Program Office at (734) 936-022I for details.

Portfolio evidence of graphic and design ability must comply with the following requirements.

CONTENT

Work may include, but need not be limited to, examples of:

- architectural design or building
- drawing—freehand and/or mechanical
- photography
- interior, industrial and graphic design
- painting, printmaking, sculpture, and ceramics
- woodworking, sewing, or other crafts

Work submitted may include class assignments, independent projects, or examples from professional employment. The applicant shall have executed all such work. If professional or group projects are submitted, the applicant must indicate the extent of his/her role in the work.

FORMAT

Each applicant may submit one binder not larger than 11" x 14" (8-1/2" x 11" recommended). Each submission shall be clearly identified with the name and address of the applicant. Examples may be in the form of original drawings, photocopies, prints, or photographs. The Committee will not review the following work:

- models or other three-dimensional objects
- slides
- videotapes
- folded materials

DEADLINE

All graphic and design work must be received by the Office of Undergraduate Admissions by **March 10**. Note that all required application materials are due by **February 1.**

RETURN

Graphic work may be picked up at the Office of Undergraduate Admissions after April 10. Work not picked up by July 1 will be discarded, unless special arrangements are made for its retention. Applicants wishing to have materials returned by mail must enclose a suitable mailer and sufficient postage. Portfolio material that weighs more than 14 ounces, including mailer, cannot be returned.

Academic and Career Counseling

The College offers academic and career counseling. The chair of the Architecture Program and faculty members will conduct both academic and career counseling. Staff members who act as liaisons with professional firms assist students in finding internships and employment.

Financial Aid

Funds are available for financial aid to selected students, based primarily on merit. Applicants can apply through channels prescribed under Financial Assistance in the General Information section, and under Financial Assistance on the College web site.

Bachelor of Science Degree Requirements

In order to qualify for the Bachelor of Science degree, a student must meet the following requirements:

1. Complete a minimum of 120 credit hours, of which a minimum of 50 credit hours, including a minimum of 45 credit hours in architecture courses, must be earned while the student is enrolled in Taubman College
2. Complete all required courses and distribution requirements specified for Years 1 and 2 and all required architecture courses specified for Years 3 and 4, as listed under "Sample Schedule."
3. Earn a passing grade (D or better) in each required architecture course, in each required pre-professional course (art, English, mathematics, and physics), and in each course used to fulfill liberal arts distribution requirements (computers, humanities, natural sciences, and social sciences).
4. Earn a minimum cumulative grade point average of 2.0 (C) for all required architecture courses.
5. Earn a minimum cumulative grade point average of 2.0 (C) for all courses taken while enrolled in the College.

All students expecting to receive the B.S. degree are required to submit a Diploma Application to the College Registrar. This should be done at least three months in advance of the expected date of graduation. Students who meet this deadline will have their names published in the Commencement Program. Faculty advisors and administrators can assist students in planning their course schedules, but the student is ultimately responsible for meeting all program and degree requirements. If degree requirements are not completed for the commencement period to which the Diploma Application has been filed, a student must complete a new Diploma Application to be considered for graduation at a subsequent commencement date.

Sample Schedule: Years 3 and 4

The following schedule is typical for students enrolled in their junior/senior year. All listed architecture courses are required.

YEAR 3: JUNIOR

Fall Term	Credit Hours
Arch 312 Architectural Design I	6
Arch 316 Design Fundamentals I	3
Arch 317 Construction I	3
*Elective	3
Total	15

Winter Term	Credit Hours
Arch 322 Architectural Design II	6
Arch 315 Environmental Technology I	3
Arch 326 Design Fundamentals II	3
*Elective	3
Total	15

YEAR 4: SENIOR

Fall Term	Credit Hours
Arch 432 Architectural Design III	6
Arch 314 Structures I	3
Arch 425 Environmental Technology II	3
*Elective	3
Total	15

Winter Term	Credit Hours
Arch 442 Architectural Design IV	6
Arch 324 Structures II	3
Arch 427 Construction II	3
*Elective	3
Total	15

* Electives must include courses in history of architecture (Arch 313 and Arch 323), computer science, humanities, natural sciences, and social sciences if these requirements were not completed in Years 1 and 2.

Master of Architecture Degree

Years 5 and 6: Graduate Level Study and Professional Degree

Description and Objectives

Years 5 and 6 consist of graduate level course work in architecture and related fields. The professional degree offered by Taubman College, Master of Architecture (M.Arch.), is awarded upon satisfactory completion of these two years. This phase of the program builds upon fundamentals established in the previous years of undergraduate studies. While a basic curriculum of professional course work forms the structure for graduate study, students have considerable freedom to organize their programs of study from the resources of the College and the University appropriate to their individual professional goals, skills, and interests.

The objective of the final two years is to prepare individuals to make professional contributions in a broad and diverse range of roles in architecture—graduates who can:

1. Work effectively within the opportunities and constraints of current practice
2. Adapt and renew their abilities to meet new and changing conditions
3. Contribute to the development of an environment surpassing present-day achievements

Admission Requirements

To be eligible for admission to Year 5, a student must have received, prior to enrollment, either of the following.

1. A Bachelor of Science degree, awarded by the A. Alfred Taubman College of Architecture + Urban Planning at the University of Michigan
2. A baccalaureate degree in a program equivalent in content to Years 1, 2, 3, and 4 of the University of Michigan Architecture Program
3. A non-architectural baccalaureate degree qualifying for the 3+ program

The student must have taken four architectural design courses equivalent to Arch 312, Arch 322, Arch 432, and Arch 442. If accepted with design deficiencies, the student must elect the missing equivalent course(s) before proceeding to graduate design course(s).

Admission is limited to the fall term. The College does not admit students at the Year 6 level.

APPLICATION PROCEDURE

Requests for information and all application credentials should be directed to:

M.Arch. Admissions
A. Alfred Taubman College of Architecture + Urban Planning
The University of Michigan
2000 Bonisteel Boulevard
Ann Arbor, MI 48109-2069
Phone: (734) 764-1649
Fax: (734) 763-2322
Email: arch.admissions@umich.edu
Web: http://www.tcaup.umich.edu

Do not address inquiries or send credentials to the Horace H. Rackham School of Graduate Studies.

APPLICATION DEADLINE

All application materials are due **January 15.** An application file is not reviewed until it is complete. Applications arriving after the deadline or those files with missing materials cannot be guaranteed a review. It is the responsibility of the applicant to verify that all required materials have been received.

APPLICATION FORM

The application form is required from all applicants. The form must be filled out completely and accurately to be considered a valid application for admission. Do not use an application form from the Horace H. Rackham School of Graduate Studies.

APPLICATION FEE

The $50.00 (in U.S. funds) nonrefundable application fee is required from all applicants. A check or money order, made payable to the University of Michigan, must be attached to the application form.

OFFICIAL TRANSCRIPTS

The College requires applicants, domestic and international, to provide one official transcript or certified credentials (transcripts) from all universities and community colleges attended. If your academic credentials are not in English, you must submit them in both English translation and in the original language. International credentials should include a certified copy of the diploma, if awarded. Applicants holding degrees from Bangladesh, Sri-Lanka, Burma, India, Nepal, and Pakistan must include detailed examination records, for all years of the program, showing subjects, marks received, and class obtained. Applicants to the 3+ program previously awarded a UM degree outside of architecture must also request a

transcript from the Transcript Office. Transcripts are kept on file for graduates of our College.

LETTERS OF RECOMMENDATION

Three letters of recommendation are required for all applicants. Recommendations should be on the forms provided with the application. If recommendations are sent on University or company/firm stationery, be sure the applicant's full name is prominent or attach the letter to the recommendation form provided. Applicants are encouraged to provide each referee with a pre-addressed envelope (using the address above) to have the recommendation mailed directly to the College.

THE GRADUATE RECORD EXAMINATION

The Graduate Record Examination (GRE) is required when applying for either the two-year or the 3+ M. Arch degree.

PORTFOLIO

All applicants are required to submit samples of their academic work and, if possible, their professional work. The following guidelines have been prepared by the Graduate Admissions Committee to help applicants select and prepare these samples.

1. Number and Type of Samples
   Select samples of work to include in a portfolio of no more than 12 pages in length (both sides may be used). Samples should be chosen to cover the breadth as well as the depth of the applicant's knowledge, abilities, and interests. The Admissions Committee is interested in work that demonstrates knowledge, interest, and ability in technical areas, human and social concerns, and symbolic and aesthetic issues. The Committee considers the following types of work to be suitable for inclusion with an applicant's samples: graphic design, photography, paintings, freehand drawings, building design drawings, analytical investigations (structural and environmental systems), building programming, measured and working drawings, computer generated drawings, and other types of work which best represent the applicant's knowledge, aptitudes, and experience. Two or three items showing the development of a plan, detail, or concept from early schematics to finished presentation are especially appropriate. The portfolio should be considered a design problem.

   Portfolios from applicants to the 3+ program will usually include samples of freehand drawings, graphic design, photography, paintings, and samples of work as noted above where appropriate.

2. Preparation of Samples

The Committee encourages applicants to submit reproductions of work instead of originals and to be judicious in the choice of reproduction methods. The Committee will assume that copies represent the actual quality of the original work in regard to line character, color, value, finish, and other visual characteristics. Slides, transparencies, or videos will not be accepted. Each exhibit should be labeled neatly with information describing the medium used, whether the work represents an academic, professional, or other type of project, and whether the work was undertaken independently or as part of a group effort. For professional and group projects, the label should indicate the type and extent of the applicant's personal involvement.

3. Size and Format of Samples

The collection of samples submitted with the application must be securely fastened together in a durable folder, binder, or box, whose overall dimensions do not exceed 9" x 12" x 1" thick (220mm x 300mm x 25mm). Do not use a mailing tube. Maximum sheet size may be no larger than 11" x 17" (280mm x 430mm), which must be folded to a size of 8-1/2" x 11" (215mm x 280mm). Collections that do not meet above specifications for size and format will not be reviewed. Portfolios will be returned only to those applicants who provide a pre-addressed mailing label and adequate postage (stamps but no envelope). International students may send stamped postal coupons. Please note, the U.S. Postal Service has initiated new restrictions on pre-stamped envelopes. For this reason, we cannot return portfolios that weigh more than 12 ounces.

OFFICIAL TOEFL/MELAB SCORE

An official TOEFL or MELAB score is required from all non-UM applicants whose native language is not English. The minimum required score on the Test of English as a Foreign Language (TOEFL) is 560 (paper-based test); 220 (computer-based test). The minimum required score on the Michigan English Language Assessment Battery exam (MELAB) is 80. Test scores and/or evaluations from other agencies are not acceptable. Applicants who have received degrees from other universities in the United States are not exempt from this requirement. Those applicants taking the TOEFL should make arrangements to have the score reported directly to the College with the code number of 1839. Official paper-based TOEFL score reports are received six weeks or later after the test date. Applicants should plan accordingly to meet the **January 15** deadline. TOEFL and/or MELAB scores that are more than two years old are not acceptable. If admitted, the College reserves the right to reevaluate English proficiency upon arrival and to require instruction in English if necessary. Instruction in English will be required for those admitted with TOEFL scores below 600 (paper-based test) or 250 (computer-based test).

CERTIFICATION OF FINANCIAL SUPPORT

Certification of financial support is required from all applicants who are not U.S. citizens or permanent resident aliens. The Financial Certification Requirements are included with the application packet and are intended to provide you with a minimum estimate of costs during your program of study. Certification required for personal and parental funds: a letter of support (who will support the student and what is the relationship) signed by the family member(s) offering the support and an original bank statement. Certification required from sponsoring agencies: an official, signed letter stating the amount of financial support and the period for which it will be available.

PASSPORTS AND VISAS

Each applicant should submit a copy of his or her passport page (or birth certificate), if available. If either of these items is not available, the applicant must indicate the exact way his or her name appears on their passport. The name on the SEVIS I-20 must match the name on the passport.

Other important information/forms needed in connection with the application and SEVIS I-20 process include:

- Copies of any previous I-20 forms.
- In connection with the issuance of spousal/dependent I-20s, it is critical that the applicant inform the department ahead of time of any pending marriage plans before departure for the U.S. Information regarding the spouse's name, date and place of birth, and citizenship will be required in the preparation of their I-20.
- If applicant is already in the U.S., he or she needs to indicate their **current** visa status (e.g., F-1, F-2, B-1/B-2, H-1B, H-4, J-1, J-2, etc.) and the INS number. The **start date** and **expiration date** of the visa should also be included.
- Use of a **Transfer-In** form is required for all students who are currently in F-1 (student) status in the U.S. Admitting departments will send this form to the student at the time admission is offered, if appropriate. The student will be required to complete the form and fax it back to the admitting department.
- **Important:** Applicants need to indicate on their application form (in section Previous and/or Current Education) if they are currently undertaking any other type of academic study in the U.S. (e.g., non-degree, language study, continuing education courses, GRE prep, etc). This information alerts the department that a Transfer-In form needs to be sent to the student.

Everyone except Canadian citizens needs a passport and a visa to enter the U.S. To apply for a visa, you will need your passport and either a Form I-20 (Certificate of Eligibility) for a student visa or a Form IAP-66 (Certificate of Eligibility) for an Exchange Visitor visa. Other documents such as proof of financial support, English proficiency and previous academic records and payment of an enrollment deposit may be required. Although Canadians do not need either the passport or visa, they must have either a Form I-20 or IAP-66 in their possession when they approach the U.S. border.

Everyone except Canadian citizens needs a passport and a visa to enter the U.S. To apply for a visa, you will need your passport and either a Form I-20 (Certificate of Eligibility) for a student visa or a Form IAP-66 (Certificate of Eligibility) for an Exchange Visitor visa. Other documents such as proof of financial support, English proficiency, and previous academic records, and payment of an enrollment deposit may be required. Although Canadians do not need either the passport or visa, they must have either a Form I-20 or IAP-66 in their possession when they approach the U.S. border.

Most frequently, students come to the U.S. with one of the two following visas:

I. Student Visa (F-I status). Students coming to the U.S. to study usually apply for this visa. To obtain this visa the student must take the Form I-20 to the U.S. consulate. Students with F-I status must be enrolled for a full course of study during the academic year. It is difficult for an F-I student to obtain permission to be employed during the summer, so you should not count on income from summer employment to finance your study. Husbands and wives of F-I students may never be employed. It is possible for F-I students to obtain permission to have I2 months of practical training employment after graduation.

2. Exchange Visitor Visa (J-I status). To obtain this visa the student must take the Form IAP-66 to the U.S. consulate. J-I students may be given permission by their visa sponsor to be employed throughout the year. Husbands and wives of J-I students may also apply for permission to be employed. It is possible for J-I students to obtain permission to have I8 months of practical training employment after graduation. J-I students from many countries will be required to return home for two years upon completion of their academic work.

The following are NOT advised for students:

I. Visitor (Tourist) Visa (B-2 status). The B-2 visa permits visiting the U.S. for only a limited period of time. It is very difficult to change to either F-I or J-I status once you have a Visitor (tourist) visa. The one exception to this recommendation is when the Consulate writes the words, "Prospective Student" on the visa that is stamped in your passport.

2. Entering without a visa. While citizens of some countries may enter the U.S. as tourists without a visa, students should never do so. This non-visa status allows a stay of only 3 months and cannot ever be changed to student or Exchange Visitor visa. Canadian students, of course, do not require visas and do not come under these restrictive provisions.

For further information concerning visas, please consult the U.S. Consul in your country.

MANDATORY HEALTH INSURANCE

All international students entering the University of Michigan are required to have health/hospitalization and accident insurance coverage for themselves and their accompanying dependents, spouse, and children. The cost of the insurance will be added into the total amount needed for financial certification.

EVALUATION

Eligible applicants are considered for admission on the basis of the following criteria:

1. Quality and content of all previous academic education
2. Evidence of professional commitment and direction—statement of purpose, employment record, letters of recommendation, portfolio, etc.
3. The number of openings available

The preferred application deadline is **January 15**. Applications will not be evaluated until all credentials have been received and the application fee has been paid. Applications missing credentials cannot be guaranteed a review by the Admissions Committee. Applicants are notified of the Admissions Committee decision beginning late March. Admitted students must pay a University enrollment fee to accept an offer of admission.

Students may also defer or postpone their admission for two years. The reactivation of an admission offer is a simple process, generally requiring an application form and the $50.00 application fee. Other materials, such as an official transcript reflecting a baccalaureate degree, an updated English proficiency score, and/or an updated Financial Statement, may also be required. Students should direct their inquiries to M.Arch. Admissions.

Academic and Career Counseling

The College offers academic and career counseling conducted by the chair of the Architecture Program and faculty members. Staff members who act as liaisons with professional firms assist students in finding internships and employment.

Financial Aid

Funds are available for financial aid to selected students, based primarily on merit in the form of fellowships or graduate teaching instructorships or graduate research assistantships. Applicants can apply through channels prescribed in the General Information section of this Bulletin, and under Financial Assistance on the College web site.

Master of Architecture Degree Requirements

In order to qualify for the Master of Architecture degree, a student must complete a minimum of 60 credit hours, of which a minimum of 50 credit hours, acquired while enrolled in Years 5 and 6, must be in architecture and related professional fields (i.e., planning, landscape architecture, natural resources, public health, engineering, business administration, and other), including a minimum of 36 credit hours of 500/600 level architecture courses. Specifically, a student must complete:

- Four courses (24 credit hours) of architectural design (Arch 552, Arch 562, Arch 662, Arch 672). Spring half-term Architectural Design can not be counted as one of the required design courses
- Five courses (15 credit hours) of specific required architecture courses (Arch 516—Architectural Representation, Arch 572—Architectural Theory and Criticism, Arch 583—Professional Practice, Arch 589—Site Planning, and Arch 660—Thesis Development Seminar). The Arch 516 and Arch 572 requirements are in effect for all students entering the Architecture Program with graduate standing beginning in fall term 2001
- One course (3 credit hours) selected from 500/600 level History of Architecture courses as indicated in the Index of Architecture Program Courses at the end of this section
- One course (3 credit hours) selected from 500/600 level Environmental Technology courses as indicated in the Index of Architecture Program Courses at the end of this section
- One course (3 credit hours) selected from 500/600 level Structures courses as indicated in the Index of Architecture Program Courses at the end of this section
- Two courses (6 credit hours) of 500/600 level elective architecture courses
- Two courses (6 credit hours) of non-architecture cognate courses, not cross-listed with architecture courses and ordinarily at the graduate level

NOTES:

a. It is strongly recommended that all required courses (Arch 516, Arch 572, Arch 583, Arch 589, and the required courses in Architectural History, Environmental Technology, and Structures) be taken in the terms suggested in the "Sample Schedule" (listed below). Class sizes are limited and those students taking a required course out of the suggested sequence may find that space in some required courses is not available in the preferred term.
b. No more than six hours of Tutorial Studies (Arch 593 and Arch 600) can be counted toward the 60-hour minimum.

A maximum of 10 credit hours of free electives, which may include transfer credit not used to fulfill previous degree requirements can be counted toward the 60-credit-hour minimum.

Students who enter the graduate level at Year 5 may not elect required undergraduate architecture courses for credit.

The one credit hour courses, Arch 993 Teaching Methods for GSIs, and Arch 690 Architectural Curriculum Practical Training, cannot be counted towards graduation requirements.

A student must complete the 60 credit hours required for the M.Arch. degree with a cumulative GPA of 3.0 or above and with a grade of D or better in each required architecture course. Those students earning a cumulative GPA of 3.8 and above shall graduate with High Distinction; students earning a GPA of 3.6 to 3.79 shall graduate with Distinction. These honors will be entered on the students' transcript and diploma.

The student's faculty advisor must approve all course elections, including cognates and 500/600 level architecture courses, on a Program Planning Form. The Program Planning Form is placed on file with the College Registrar and is used to finalize degree requirements at the time of graduation. In addition, all students expecting the M.Arch. degree are required to submit a Diploma Application to the College Registrar. This should be done at least three months in advance of the expected date of graduation. Students who meet this deadline will have their names published in the Commencement Program. Faculty advisors and administrators can assist a student in planning course schedules, but the student is ultimately responsible for meeting all program and degree requirements. If degree requirements are not completed for the commencement period to which the Diploma Application has been filed, a student must complete a new Diploma Application to be considered for graduation at a subsequent commencement date.

LS&A Academic Minors

Students in the Architecture Program have the option of electing one or more academic minors offered by departments within the College of Literature, Science, and the Arts (LS&A). Minors are intended to recognize the completion of a coherent sequence of courses in a particular academic area. They also serve as recognition, via the transcript notation, of the completion of a more in-depth course sequence.

To initiate a minor, a student must meet with an LS&A advisor in the minor discipline and together determine the necessary minor courses. The certification that the appropriate courses have been completed will be communicated from the LS&A department offering the minor to the College registrar. The student will be responsible for making sure this paperwork arrives at the appropriate offices.

Since they are relatively new at the University, there may be minors offered in units other than LS&A. For minors available in liberal arts, please refer to the LS&A website at http://www.lsa.umich.edu/saa/minors.html.

Sample Schedule: Years 5 and 6

YEAR 5: GRADUATE

Fall Term	Credit Hours
Arch 552 Architectural Design V (Gateway Studio)	6
Arch 516 Architectural Representation	3
History of Architecture, Environmental Technology, or Structures Requirement	3
*Elective/Cognate	3
Total	15

Winter Term	Credit Hours
Arch 562 Architectural Design VI (Option Studio)	6
Arch 572 Architecural Theory and Criticism	3
History of Architecture, Environmental Technology, or Structures Requirement	3
*Elective/Cognate	3
Total	15

YEAR 6: GRADUATE

Fall Term	Credit Hours
Arch 672 Architectural Design VII (Option Studio)	6
Arch 589 Site Planning	3
Arch 660 Thesis Development Seminar	3
History of Architecture, Environmental Technology, or Structures Requirement	3
Total	15

Winter Term	Credit Hours
Arch 662 Thesis Studio	6
Arch 583 Professional Practice	3
*Elective/Cognate	3
*Elective/Cognate	3
Total	15

* Electives and/or cognates should normally include either 500/600 level architecture or non-architecture courses. The number and nature of these courses should be determined after consultation with the student's faculty advisor.

The 3+ Program for Students with Non-Architectural Baccalaureate Degrees

Students with prior non-architectural baccalaureate degrees may apply for admission to the Architecture Program as graduate students. Admission is limited to the summer half-term only. Under the 3+ program the normal period of time required to earn the Master of Architecture degree is 3-1/2 years plus the summer half-term at the beginning of the program. The second and third years of the 3+ program are similar to Years 5 and 6 of the 2+2+2 year Master of Architecture program.

To be eligible for admission to the 3+ Program, the student must, by June preceding the intended summer half-term of entrance, have:

1. Earned a four-year, non-architectural baccalaureate degree
2. Completed the specific following courses: two studio art courses, English composition, history (of art, architecture, or material culture), calculus and physics (lecture plus lab, 4 credit hours minimum; on laws of motion, force, energy, and power).

The College also recommends—but does not require—completion of a second course in history (with at least one history course a survey of art or architecture), and that at least one course in studio art be on drawing.

The application procedure is the same as that for Year 5 applicants. Requests for information and all application credentials should be directed to:

M.Arch. Admissions
A. Alfred Taubman College of Architecture + Urban Planning
The University of Michigan
2000 Bonisteel Boulevard
Ann Arbor, MI 48109-2069
Phone: (734) 764-1649
Fax: (734) 763-2322
Email: arch.admissions@umich.edu
Web: http://www.tcaup.umich.edu/admissions/admarch.html

Do not address inquiries or send credentials to the Office of Undergraduate Admissions or to the Horace H. Rackham School of Graduate Studies.

A student with a prior non-architectural baccalaureate degree who is admitted to the Architecture Program enters with graduate standing and is on track for the M.Arch. degree. The student is not eligible to receive the Bachelor of Science degree. The student must maintain a 3.0 grade point average to remain in good academic standing and to earn the M.Arch. degree.

Upon completion of all required 300 and 400 level course work, the student is eligible to:

1. Be considered for teaching assistantships (see note below), honors, and awards designated for graduate students
2. Participate in the study abroad programs
3. Apply for admission to any of the joint/dual degree programs

NOTE: A 3+ student is eligible to be considered for teaching assistantships in 200 level architecture courses before the student has completed all required 300 and 400 level course work.

Master of Architecture Degree Requirements: 3+ Program

In order to qualify for the Master of Architecture degree, a 3+ student must meet the following requirements:

1. Complete all required courses as listed in the "Sample Schedule" for 3+ students.
2. Complete a minimum of 105 credit hours while enrolled in Taubman College
3. Earn a cumulative GPA of 3.0 or above, with a grade of D or better in each required architecture course.

No transfer credit for previous academic work may be counted toward the 105-credit-hour minimum. All required 300- and 400-level architecture courses and a computer science course should be completed by the end of the second year.

All course elections must be approved by the student's faculty advisor on a 3+ Program Planning Form. Policies regarding the Diploma Application and graduation honors are the same as those for other graduate students.

Sample Schedule: 3+ Program

The following schedule is typical for a 3+ student who needs courses in both History of Architecture and computer science. The sample schedule is in effect for all 3+ students entering the Architecture Program with graduate standing beginning in the summer half-term 2002.

FIRST YEAR

Summer Half-Term	Credit Hours
Arch 402 Architectural Design	6
Arch 416 Design Fundamentals	3
Total	9

Fall Term	Credit Hours
Arch 412 Architectural Design I	6
Arch 413 History of Architecture	3
Arch 314 Structures I	3
Arch 417 Construction	3
Total	15

Winter Term	Credit Hours
Arch 422 Architectural Design II	6
Arch 324 Structures II	3
Arch 315 Environmental Technology I	3
Arch 411 Computer Aided Design Fundamentals I	3
Total	15

SECOND YEAR (SAME AS YEAR 5)

Fall Term	Credit Hours
Arch 552 Architectural Design V (Gateway Studio)	6
Arch 425 Environmental Technology II	3
Arch 516 Architectural Representation	3
History of Architecture, Environmental Technology, or Structures Requirement	3
Total	15

Winter Term	Credit Hours
Arch 562 Architectural Design VI (Option Studio)	6
Arch 572 Architectural Theory and Criticism	3
History of Architecture, Environmental Technology, or Structures Requirement	3
*Elective/Cognate	3
Total	15

Spring Half-Term (Optional)	Credit Hours
†Arch 592 Architectural Studio	6

THIRD YEAR (SAME AS YEAR 6)

Fall Term	Credit Hours
Arch 672 Architectural Design VII (Option Studio)	6
Arch 589 Site Planning	3
Arch 660 Thesis Development Seminar	3
*Elective/Cognate	3
Total	15

Winter Term	Credit Hours
Arch 662 Thesis Studio	6
Arch 583 Professional Practice	3
History of Architecture, Environmental Technology, or Structures Requirement	3
*Elective/Cognate	3
Total	15

FOURTH YEAR (OPTIONAL)

Fall Term	Credit Hours
*Elective/Cognate	3
*Elective/Cognate	3
Total	6

* Electives must be 500/600 level architecture courses. Cognates are non-architecture courses, not cross-listed with architecture courses, and ordinarily at the graduate level.

† 3+ students must elect a total of seven Architectural Design courses (1 summer + 6 fall, winter). Spring half-term Architectural Design can not be counted as one of the required design courses, however, a student may be advised to elect an additional spring half-term design course.

One summer half-term plus 6 fall and winter terms yields 99 credit hours. As a result, to reach the required 105 credit hours, the 3+ student must either:

1. Elect an extra 3 credit hour course for two terms (18 credits/term—considered an overload), or
2. Elect an optional design studio during a spring half-term (credit hours only), or
3. Elect two 3 credit hour courses during a spring half-term, or
4. Enroll in at least 6 credit hours in an extra fall or winter term.

Joint/Dual Degree Programs

Master of Architecture/Master of Urban Planning

Description and Objectives

This dual degree is structured to develop highly qualified professionals capable of combining Architecture and Urban Planning to work effectively in the professional fields of architecture, urban development, and community and social planning. It equips students with a broad range of skills and particular expertise related to the design and planning of the built environment. Graduates with a dual degree in Architecture and Urban Planning are able to work both in the private sector and with a wide range of public agencies and non-profit organizations. The program combines the two-year/60 credit hour M.Arch. degree with the two-year/48 credit hour M.U.P. degree, resulting in a three-year/84 credit hour program.

Admission Requirements and Application Procedure

To be eligible for admission, a student must have a B.S. degree from the A. Alfred Taubman College of Architecture + Urban Planning or an equivalent degree earned at another institution. Graduate students enrolled in the 3+ Option must complete all required 300 and 400 level course work before applying to the dual M.Arch./M.U.P Program. Admission to both programs is normally limited to the fall semester, but winter admission may be considered in special cases. The recommended procedure is to apply to each program for the same term. It is possible, however, to apply to either program once enrollment has taken place in the other.

Two complete and separate applications are necessary, one to Taubman College for Year 5/Master of Architecture and one to the Horace H. Rackham School of Graduate Studies for the Master of Urban Planning Degree. The application fee is required only once if an application is made to each unit for the same term. In this case, the check or money order may be included with either application, but a note regarding disposition of the fee should be attached to the application of the unit not receiving the money. Each program will make an admission decision independently of the other. Only if both programs approve admission is the applicant considered a dual degree student.

M.Arch./M.U.P. Degree Requirements

Students must register in the A. Alfred Taubman College of Architecture + Urban Planning and the Horace H. Rackham School of Graduate Studies. Course elections should be identical in each unit for each semester. The dual M.Arch./M.U.P. degree requires the completion of a minimum of 84 credit hours. Specifically, a student must complete:

1. 36 credit hours of 500/600 level architecture courses, including four courses (24 hours) of architectural design (Arch 552, Arch 562, Arch 662, Arch 672)
2. Five courses (15 credit hours) of specific required architecture courses: (Arch 516—Architectural Representation, Arch 572—Architectural Theory and Criticism, Arch 583—Professional Practice, Arch 589—Site Planning, and Arch 660—Thesis Development Seminar)
3. One course (3 credit hours) in each of three subject areas—Architectural History, Environmental Technology, and Structures
4. 30 credit hours of graduate level urban planning courses, including all "core" course work unless waived by the instructor
5. Any additional cognate/elective courses needed to fulfill the 84 credit hour requirement

In addition, students who lack college-level economics and statistics must complete acceptable courses in these two areas. One, but not both, may be counted toward the 30 credit hours of graduate-level urban planning courses, provided it has been taken for graduate credit. A cumulative GPA of "B" must be earned in each unit and not more than 24 credit hours may be double-counted toward the two degrees.

Each unit maintains a separate transcript and either degree may be awarded independently, provided the requirements for the single degree have been met. Because enrollment in the dual program involves two separate units, it becomes the responsibility of the student to follow the academic policies and procedures of each.

Sample Schedule: M.Arch./M.U.P. Degree

YEAR 5: GRADUATE

Fall Term	Credit Hours
Arch 552 Architectural Design V (Gateway Studio)	6
Arch 519 (UP 519) Principles and Practice of Urban Design I	3
UP 503 Planning Analysis	3
UP 513 Legal Aspects of the Planning Process	3
Total	15

Winter Term	Credit Hours
Arch 562 Architectural Design VI (Option Studio)	6
UP 504 Quantitative Planning Methods II	3
UP 505 Qualitative Planning Techniques	3
Architectural History, Environmental Technology, or Structures Requirement	3
Total	15

YEAR 6: GRADUATE

Fall Term	Credit Hours
Arch 672 Architectural Design VII (Option Studio)	6
Arch 516 Architectural Representation	3
UP 540 Planning Theory	3
Total	15

Winter Term	Credit Hours
Arch 662 Thesis Studio	6
Arch 583 Professional Practice	3
Arch 572 Architectural Theory and Criticism	3
Architectural History, Environmental Technology, or Structures Requirement	3
Total	15

YEAR 7: GRADUATE

Fall Term	Credit Hours
UP 630 Urban Design Studio	6
Arch 443 (UP 443) History of Urban Form	3
Graduate level courses in architecture, urban planning or elective field	6
Total	15

Winter Term	Credit Hours
UP 631 (NRE 631) Land Use and Physical Planning Studio	6
UP 610 Fiscal Planning and Management	2–3
Arch 529 (UP 620) Principles and Practice of Urban Design II	3
Graduate level courses in architecture, urban planning or elective field	6
Total	14–15

Master of Architecture/Master of Urban Design

Description and Objectives

This dual degree is structured to develop highly qualified professionals capable of combining Architecture and Urban Design to work effectively in the professional fields of architecture, urban development, and community and social planning. It equips students with a broad range of skills and particular expertise related to the design and planning of the built environment. Graduates with a dual degree in Architecture and Urban Planning are able to work both in the private sector and with a wide range of public agencies and non-profit organizations. The program combines the two-year/60 credit hour M.Arch. degree with the one and one-half year or three-term/39 credit hour M.U.D. degree, resulting in a six term program.

Admission Requirements and Application Procedure

To be eligible for admission, a student must have a B.S. degree from the A. Alfred Taubman College of Architecture + Urban Planning or an equivalent degree earned at another institution. Graduate students enrolled in the 3+ Option must complete all required 300 and 400 level course work before applying to the dual M.Arch./M.U.D. Program. Admission to both programs is normally limited to the fall semester, but winter admission may be considered in special cases. The recommended procedure is to apply to each program for the same term. It is possible, however, to apply to either program once enrollment has taken place in the other.

Two complete and separate applications are necessary, one for Year 5/ Master of Architecture and one for the M.U.D. Degree. The application fee is required only once if an application is made to each unit for the same term. In this case, the check or money order may be included with either application, but a note regarding disposition of the fee should be attached to the application of the unit not receiving the money. Each program will make an admission decision independently of the other. Only if both programs approve admission is the applicant considered a dual degree student.

M.Arch./M.U.D. Degree Requirements

The dual M.Arch./M.U.D. degree requires the completion of a minimum of 81 credit hours. Specifically, a student must complete:

1. 36 credit hours of 500/600 level architecture courses, including three courses (18 hours) of architectural design (Arch 552, Arch 562, and Arch 672)
2. Four courses (12 credit hours) of specific required architecture courses: (Arch 516—Architectural Representation, Arch 572—Architectural Theory and Criticism, Arch 583—Professional Practice, and Arch 589—Site Planning)

3. One course (3 credit hours) in each of three subject areas—Architectural History, Environmental Technology, and Structures
4. 39 credit hours of graduate level urban design courses—see the Urban Design Program section of this bulletin for details

A cumulative GPA of "B" must be earned in each unit and not more than 24 credit hours may be double-counted toward the two degrees. Because the M.U.D. is a second professional degree, dual degree candidates for M.Arch./M.U.D. must plan to receive degrees concurrently.

Sample Schedule: M.Arch./M.U.D. Degree

YEAR 5: GRADUATE

Fall Term	Credit Hours
Arch 552 Architectural Design V	6
Arch 516 Architectural Representation	3
Architectural History, Environmental Technology, or Structures Requirement	3
Architectural History, Environmental Technology, or Structures Requirement	3
Total	15

Winter Term	Credit Hours
Arch 562 Architectural Design VI (Option Studio)	6
Arch 572 Architecural Theory and Criticism	3
History of Architecture, Environmental Technology, or Structures Requirement	3
*Elective/Cognate	3
Total	15

YEAR 6: GRADUATE

Fall Term	Credit Hours
Arch 672 Architectural Design VII (Option Studio)	6
Arch 589 Site Planning	3
*Elective/Cognate	3
UD 719 Theories of Urban Design	3
Total	15

Winter Term	Credit Hours
UD 722 Urban Design Studio II	6
Arch 583 Professional Practice	3
UD 723 Methodologies of Urban Design	3
UD 729 Practices of Urban Design	3
Total	15

Spring Half-Term	Credit Hours
UD 732 Urban Design Studio III	6
UD 739 Seminar	3
Total	9

YEAR 7: GRADUATE

Fall Term	Credit Hours
UD 712 Urban Design Studio I	6
UD 713 History of Urban Form	3
UD Selective, Elective, or Cognate	3
UD Selective, Elective, or Cognate	3
Total	15

* Architecture electives must be 500/600 level architecture courses. Cognates are non-architecture courses, not cross-listed with architecture courses, and ordinarily at the graduate level.

Master of Architecture/Master of Business Administration

Description and Objectives

Taubman College and the Business School offer a joint degree enabling a small number of qualified students to pursue concurrent work in architecture and business administration. The program combines the two-year/60 credit hour M.Arch. degree with the two-year/60 credit hour M.B.A. degree resulting in a three-year/90 credit hour program. The program is arranged so that all requirements are completed in 3 years of enrollment. The degrees are awarded simultaneously.

Admission Requirements and Application Procedure

To be eligible for admission, a student must have a B.S. degree from Taubman College or an equivalent earned at another institution. Graduate students enrolled in the 3+ program must complete all required 300 and 400 level course work before applying to the joint M.Arch./M.B.A. program. Two separate and complete applications are required: one to Taubman College for Year 5/Master of Architecture (see "Master of Architecture Degree" earlier in this section) and one to the Business School for the full-time M.B.A. program available from:

Office of Admissions and Student Services
University of Michigan Business School
2260 Business Administration Building
701 Tappan
Ann Arbor, MI 48109-1234
Phone: (734) 763-5796
Fax: (734) 763-7804
Email: umbsmba@umich.edu
Web: http://www.bus.umich.edu

The GMAT is required for admission to the Business School. Admission is for the fall term. A special notation, indicating the joint program, should be made on the front of the M.B.A. application. Although the joint degree program is not available to students who have previously earned the M.Arch. or the M.B.A. degree, a student enrolled in the first year (Year 5) of either program may apply. The recommended procedure is to file an application to each program for the same term. In this case, the application fee is required only once. The check or money order may be included with either application, but a note regarding disposition of the fee should be attached to the application of the unit not receiving the money. Each program makes an admission decision independently of the other. Only if both programs approve admission is the applicant considered a joint degree student. If admission to each program is granted for the same term, one unit must apply its deferred admission procedures, depending upon which program the student chooses for the first year of study.

M.Arch./M.B.A. Degree Requirements

Students in the Joint Degree M.Arch./M.B.A. Program must complete a minimum of 90 credit hours, including a minimum of:

1. 60 credit hours in Taubman College (cannot include transfer credit or work experience) as follows:
   - 36 credit hours of 500/600 level architecture courses, including four courses (24 hours) of architectural design (Arch 552, Arch 562, Arch 662, Arch 672);
   - Five courses (15 credit hours) of specific required architecture courses (Arch 516—Architectural Representation, Arch 572—Architectural Theory and Criticism, Arch 583—Professional Practice, Arch 589 Site Planning, and Arch 660—Thesis Development Seminar)
   - One course (3 credit hours) in each of three subject areas—Architectural History, Environmental Technology, and Structures
   - 15 credit hours of transferable electives from the Business School
2. 60 credit hours in the Business School, including:
   - 30 credit hour M.B.A. core (no credit is awarded for Business Administration core courses successfully waived; credit must be earned with Business electives
   - 15 elective credit hours in Business Administration
   - 15 credit hours of transferable elections from Taubman College

Students must earn a cumulative GPA of "B" in Architecture and maintain good academic standing in Business.

Enrollment is evenly divided between the two units, resulting in two separate transcripts. For the first year (Year 5), the student has a choice between registering in Taubman College (Plan I) or registering in the Business School (Plan II). Registration in the second year (Year 6) then takes place in the other unit. During the third year (Year 7), registration is split between the two units, with one semester completed in Taubman College and one in the Business School. Each program then applies its individual policies on the transfer of credit to award the degrees simultaneously. If a student decides not to continue in the program, either degree may be awarded independently, provided the requirements of the single degree have been met. Because enrollment in the program involves two separate units, it becomes the responsibility of the student to follow the academic policies and procedures of each.

Sample Schedule: Plan I, M.Arch./M.B.A. Degree

YEAR 5: GRADUATE

Fall Term	Credit Hours
Arch 552 Architectural Design V (Gateway Studio)	6
Arch 572 Architectural Theory and Criticism	3
History of Architecture, Environmental Technology, or Structures Requirement	6
Total	15

Winter Term	Credit Hours
Arch 562 Architectural Design VI	6
Arch 516 Architectural Representation	3
Arch 589 Site Planning	3
History of Architecture, Environmental Technology, or Structures Requirement	3
Total	15

YEAR 6: GRADUATE

Fall Term	Credit Hours
A 501 Principles of Financial Accounting	3
BE 501 Applied Microeconomics	3
CS 502 Corporate Strategy I	1.5
F 552 Principles of Finance	1.5
IB 503 The World Economy	1.5
M 501 Marketing Management	3
SMS 502 Applied Business Statistics	1.5
Total	15

Winter Term	Credit Hours
A 552 Management Accounting	1.5
F 553 Principles of Corporate Finance	1.5
OM 552 Operations Management Basics	1.5
OBHRM 552 Human Behavior and Organization	1.5
BA 553 Multidisciplinary Action Project	7.5
Business Elective	1.5
Total	15

YEAR 7: GRADUATE

Fall Term	Credit Hours
Arch 672 Architectural Design VII	6
Business Elective	1.5
Business Law or Business Ethics	1.5
Business Electives	6
Total	15

Winter Term	Credit Hours
Arch 682 Architectural Design VIII	6
Arch 583 Professional Practice	3
Business Electives	6
Total	15

Sample Schedule: Plan II, M.Arch./M.B.A. Degree

YEAR 5: GRADUATE

Fall Term	Credit Hours
A 501 Principles of Financial Accounting	3
BE 501 Applied Microeconomics	3
CS 502 Corporate Strategy I	1.5
F 552 Principles of Finance	1.5
IB 503 The World Economy	1.5
M 501 Marketing Management	3
SMS 502 Applied Business Statistics	1.5
Total	15

Winter Term	Credit Hours
A 552 Management Accounting	1.5
F 553 Principles of Corporate Finance	1.5
OM 552 Operations Management Basics	1.5
OBHRM 552 Human Behavior and Organization	1.5
BA 553 Multidisciplinary Action Project	7.5
Business Elective	1.5
Total	15

YEAR 6: GRADUATE

Fall Term	Credit Hours
Arch 552 Architectural Design V (Gateway Studio)	6
Arch 572 Architectural Theory and Criticism	3
History of Architecture, Environmental Technology, or Structures Requirement	6
Total	15

Winter Term	Credit Hours
Arch 562 Architectural Design VI	6
Arch 589 Site Planning	3
Arch 516 Architectural Representation	3
History of Architecture, Environmental Technology, or Structures Requirement	3
Total	15

YEAR 7: GRADUATE

Fall Term	Credit Hours
Arch 672 Architectural Design VII	6
Business Elective	1.5
Business Law or Business Ethics	1.5
Business Electives	6
Total	15

Winter Term	Credit Hours
Arch 682 Architectural Design VIII	6
Arch 583 Professional Practice	3
Business Electives	6
Total	15

Master of Architecture/Master of Engineering

Description and Objectives

Taubman College of Architecture and Urban Planning and the Department of Civil and Environmental Engineering, in conjunction with the College of Engineering, have established a Dual Degree Program in Architecture and Construction Engineering and Management. The program combines the two-year/60 credit hour M.Arch. degree with the one-year/30 credit hour M.Eng. degree, resulting in a two and one half year/75 credit hour program.

Admission Requirements and Application Procedure

To be eligible for admission, a student must have a B.S. degree from Taubman College or an equivalent degree earned at another institution with at least one year of calculus, one year of physics and a minimum "B" average in science and mathematics courses. Admission to both programs is normally limited to the fall term, but winter admission may be considered in special cases. The recommended procedure is to apply to each program for the same term. It is possible, however, to apply to either program once enrollment has taken place in the other.

Two separate and complete applications are required, one to Taubman College for Year 5 Master of Architecture and one to the Department of Civil and Environmental Engineering for the M.Eng./Construction Engineering and Management Program. This is available from:

Department of Civil and Environmental Engineering (CEE)
College of Engineering
The University of Michigan
2340 G.G. Brown Building
2350 Hayward
Ann Arbor, MI 48109-2125
Phone: (734) 764-8495
Fax: (734) 764-4292
Email: cee-dept@umich.edu
Web: http://www.engin.umich.edu/dept/cee

The application fee is required only once if an application is made to each unit for the same term. In this case, the check or money order may be included with either application, but a note regarding disposition of the fee should be attached to the application of the unit not receiving the money. Each program will make an admission decision independently of the other. Only if both programs approve admission is the applicant considered a dual degree student.

M.Arch./M.Eng. Degree Requirements

Students must dually register in the A. Alfred Taubman College of Architecture + Urban Planning and the College of Engineering. For any given term, courses being double-counted should be elected in each unit, while those pertaining only to the M.Arch. degree are elected in Architecture and Urban Planning and those pertaining only to the M.Eng. degree in Engineering. The dual M.Arch./M.Eng. degree requires the completion of a minimum of 75 credit hours. Specifically, a student must complete:

1. 36 credit hours of 500/600 level architecture courses, including four courses (24 credit hours) of architectural design (Arch 552, Arch 562, Arch 662, Arch 672);
2. Five courses (15 credit hours) of specific required architecture courses: (Arch 516—Architectural Representation, Arch 572—Architectural Theory and Criticism, Arch 583—Professional Practice, Arch 589—Site Planning, and Arch 660—Thesis Development Seminar)
2. One course (3 credit hours) in each of three subject areas—Architectural History, Environmental Technology, and Structures
3. 9 credit hours of construction engineering "core" courses (CEE 531, CEE 532, CEE 536)
4. 6 credit hours of graduate-level construction engineering courses
5. 3 credit hours of a construction practice seminar (CEE 530)
6. Any additional cognate/elective courses needed to fulfill the 75 credit hours and general requirements of each degree

In addition to the requirements outlined above, students must also complete—by the end of their first year of graduate study—the following courses or approved equivalents: CEE 351 Civil Engineering Materials, CEE 431 Construction Contracting, CEE 432 Construction Engineering, and CEE 445 Engineering Properties of Soils. In order to minimize scheduling problems, students are strongly encouraged to complete these courses prior to entering the dual program. Note that these four courses, as well as other 300 and 400 level courses, will not be recognized for graduate credit within the 30 credit hours required for the M.Eng. degree.

A cumulative GPA of "B" must be earned in each unit and no more than 15 credit hours may be double-counted toward the two degrees.

Each unit maintains a separate transcript and either degree may be awarded independently, provided the requirements for the single degree have been met. Because enrollment in the dual program involves two separate units, it becomes the responsibility of the student to follow the academic policies and procedures of each.

Sample Schedule: M.Arch./M.Eng. Degree

YEAR 5: GRADUATE

Fall Term	Credit Hours
Arch 552 Architectural Design V (Gateway Studio)	6
Arch 516 Architectural Representation	3
History of Architecture, Environmental Technology, or Structures Requirement	3
CEE 431 Construction Contracting (if needed) or a graduate-level architecture or construction engineering course	3
Total	15

Winter Term	Credit Hours
Arch 562 Architectural Design VI	6
Arch 572 Architectural Theory and Criticism	3
CEE 351 Construction Engineering Materials (if needed) or a graduate-level architecture or construction engineering course	3
CEE 432 Construction Engineering (if needed) or a graduate-level architecture or construction engineering course	3
Total	15

YEAR 6: GRADUATE

Fall Term	Credit Hours
Arch 672 Architectural Design VII	6
Arch 660 Thesis Development Seminar	3
CEE 531 Construction Cost Engineering	3
CEE 445 Engineering Properties of Soil (if needed) or a graduate-level architecture or construction engineering course	3
Total	15

Winter Term	Credit Hours
Arch 662 Thesis Studio	6
CEE 532 Construction Management and Project Engineering	3
CEE 530 Construction Practice Seminar	1
Architectural History, Environmental Technology, or Structures Requirements or Graduate-level courses in architecture, construction engineering or elective field	6
Total	16

YEAR 7: GRADUATE

Fall Term	Credit Hours
Arch 583 Professional Practice	3
Arch 589 Site Planning	3
CEE 530 Construction Practice Seminar	2
CEE 536 Critical Path Methods	3
Architectural History, Environmental Technology, or Structures Requirement or Graduate-level courses in architecture, construction engineering, or elective field	6
Total	17

Competitions

Kiefer Traveling Fellowship

The Leroy E. and Helen L. Kiefer Traveling Fellowship in Design is awarded every other year through an architectural design competition. Eligible participants include students who have substantially completed at least the senior year of their undergraduate work. The winner receives a traveling fellowship of approximately $3,000. Leroy Kiefer earned his B.S. in 1925 and won the George G. Booth Traveling Fellowship in Architecture in 1926. He later joined General Motors and was eventually named head of styling in the products division. Helen Kiefer established this fellowship in 1984 through a bequest honoring her husband's belief in the importance of travel for architects.

Wallenberg Competition

The Wallenberg Competition is the vehicle through which Raoul Wallenberg Scholarships are awarded annually. These scholarships honor Raoul Wallenberg, B.S.Arch. '35, who is credited with single-handedly rescuing over 100,000 Jews from Nazi persecution in Budapest, Hungary, during World War II. It was established by the Benard L. Maas Foundation in 1986. The competition acts as a reminder of Wallenberg's courage and humanitarianism and is aimed at reflecting his ideals. The winners receive significant traveling fellowships. Eligibility is limited to students enrolled in Year 4 design studios, who are assigned this competition as a class project.

Willeke Design Prize

This prize was established in 1983 by Pierre V. Heftler, executor of the Willeke estate. It is awarded through an annual portfolio competition and all undergraduate students in Year 3 and Year 4 are eligible to participate. The competition is held in honor of the late Detroit architect Leonard B. Willeke (1889-1970) to promote excellence and innovation in architectural design. Portfolios are reviewed by a five-member committee consisting of three faculty members and two practicing professionals. An award of approximately $4,800 is given to the first place winner, while about $2,200 is given for second place. The awards are given without any restrictions on their use.

Booth Traveling Fellowship

The George G, Booth Traveling Fellowship was first awarded in 1924–24. It is offered annually by Taubman College and presently carries a stipend of $4,000. The Fellowship provides the opportunity for younger alumni/ae to research some special aspect of architecture that requires international travel. To be eligible for the competition candidates must be 30 years of age or under before the March 31 application deadline and must be Master of Architecture graduates of the University of Michigan. The award is made on the basis of the applicant's academic and professional record and the submission of a well-documented plan of international study that states where the work will be carried out, the inclusive time period of travel and a detailed budget. The awardee submits a written report within six months following the completion of travel and presents a lecture at the College.

Honors and Awards

Alpha Rho Chi Medal

Alpha Rho Chi, a national professional fraternity for students of architecture and the allied arts, awards its medal annually, in April, upon recommendations of the architecture faculty in each school of architecture. The purpose is to recognize the M.Arch. degree candidate who has shown leadership and given service to the school and whose personality and attitude give promise of real professional worth.

AIA Henry Adams Medal and Certificate

In each recognized school of architecture in the United States, the American Institute of Architects annually awards an engraved medal to the M.Arch. degree candidate with the highest scholastic standing. A certificate is awarded to the degree candidate with the second highest standing. The faculty determines the awards.

Burton L. Kampner Memorial Award

Established in 1967 by contributions from alumni and friends of Burton L. Kampner, B.Arch. '53, a memorial award is presented annually to the B.S. degree candidate whose final design project is considered to be the most outstanding. The selection is made by a jury consisting of architecture faculty appointed by the chair of the Architecture Program.

Marian Sarah Parker Memorial Award

Sarah Drake Parker initiated this endowment, shared with the College of Engineering, in memory of her daughter, Marian Sarah Parker, C.E. 1895, the first woman to graduate with an engineering degree from the University of Michigan. She became a specialist in the design of the steel-framed "skyscraper." The award is made annually to the outstanding woman senior in engineering and to the outstanding woman M.Arch. degree candidate.

Chair's Cup Award

The Chair's Cup is awarded to an architecture student who has made a significant contribution to the College by fostering and participating in the development of interdisciplinary educational activities among students and faculty on campus. The chair of the program determines the award.

Summer Discovery Program

This is an enrichment program that successfully introduces high school students to the college experience. The program provides an environment that is intellectually stimulating, culturally and socially enriching, and fun. A series of courses is offered to provide students with skills that are useful for academic achievement, personal growth, and college preparation. The program is either three or six weeks in duration and is designed for individuals who have completed the ninth, tenth, or eleventh grade.

Taubman College offers courses to students who would like to explore architecture. No experience, special skills, or prior knowledge of the field is required—just a serious interest in exploring the many facets of what architecture is all about.

During the program, students will benefit from the knowledge of noted professionals and educators in the field. Courses offered include a studio titled "Designing the Environment" where students have the opportunity to explore space, form, the nature of materials, and experience designing a building as well as drawing and building models. In the "Introduction to Graphic Design" course, students explore the use of text and image—the building blocks of graphic design—through two-dimensional projects. They also discover the elements of color, texture, design, and layout. To bring together technology, image, and text, a computer design component is included.

For more information contact:

Muskier Discovery Programs, Inc.
1326 Old Northern Boulevard
Roslyn, New York 11576
Phone: (888) 878-6637
Fax: (516) 625-3438
Email: info@summerfun.com
Web: http://www.summerfun.com

The University of Michigan does not grant academic credit for participation in the Summer Discovery Program.

Study Abroad Programs

Students enrolled in undergraduate and graduate programs may elect to spend one term of study in an international design studio. Programs are currently offered in India, Ghana, Italy, the Czech Republic, Japan, and Holland. In addition, the University of Michigan and the University of California-Berkeley were chosen as faculty linkage partners with the University of Durban/Westville (South Africa) in a program established in 1992. Eventually, the exchange will include students as well as faculty. In Korea, the College is establishing partnerships with architecture and planning schools, exploring the potential development of continuing education programs with professional firms and looking into collaborative research efforts with Korean corporations. In Thailand, the College has established an official relationship with seven universities called The Consortium for the Development of Thailand's Architectural Education. This effort was initiated by the Thai government through the Ministry of University Affairs in Thailand in response to the need for trained architects. These international connections, with their recognition of the importance of global development and cross-cultural needs, are a significant aspect of the educational, research and service opportunities at Michigan.

India Studio

The India Studio, which debuted in fall 1999, is the result of years of conversations between Dean Douglas Kelbaugh and Vikram Prakash, a faculty member from the University of Washington who is originally from India. The India Studio begins with a design charrette in the city of Ahmedabad. As the studio program continues, students focus on other areas of interest in the city and develop a broad range of projects. A highlight of the program is a traveling study tour of several cities. A number of India cities were built in ancient times, while others are relatively recent. The resulting urban form and the layout of streets in many Indian cities have a great variation of form and density. The India Studio offers students the opportunity to learn from experiencing life in a country with ancient roots.

Ghana Studio

Inaugurated in 2000, this spring studio for undergraduate and graduate students is organized in collaboration with the faculty and students at the Department of Architecture, Kwame Nkrumah University of Science and Technology in Kumasi, Ghana and with anthropology faculty at the University of Ghana in Accra. Architecture students engage in either an urban-scale design project or an architectural design collaborative that focuses on village development. With both, the aim is to generate possible architectural linkages between the physicality of three-dimensional space and the unbounded and existential spirituality of human aspiration. This

broad pedagogical approach to architecture allows the studio to explore a global, cross-cultural approach to such issues as vernacular tectonics and ecological sustainability, while engaging itself locally in the array of historical and cultural factors shaping the built environment of central West Africa. Student energy is focused on measured drawings and intensive site visits in Kumasi, Accra (the capitol), Cape Coast (the former capitol), and in rural villages.

The program is mainly in Kumasi and Accra, with students living in university guest houses and studying in two of Ghana's largest cities. Class instruction is supplemented with trips to key sites in other neighboring West African countries, as time permits. Three weeks of the studio time is spent in Ghana, with the remaining time split between pre-Ghana orientation and post-Ghana presentations.

Florence Studio

Each fall term, the University of Michigan, the University of Wisconsin and Duke University sponsor a program, which is housed in the Villa Corsi-Salviati, located in Sesto Fiorentino (Florence) Italy. Students may elect courses in architectural design; Italian art, architecture, and sculpture; music; history and politics; or language and literature. With the exception of Italian language courses, all classes are taught in English. Architectural design studios are taught by a College faculty member; other courses are taught by faculty from Michigan and Wisconsin, or by academics from the Florence area. Classroom instruction is supplemented by field trips to sites in Florence such as the Uffizi Gallery, the Duomo, and the Laurentian Library, and to Pisa, Siena, and other Italian cities. A maximum of 15 students from the College may participate in the Florence program each fall. Students register at the University of Michigan; a maximum of 16 credit hours may be elected.

Prague Studio

Each spring half-term (the months of May and June) the College sponsors a program in the city of Prague in the Czech Republic. Students and faculty from the College spend seven weeks working with faculty and students from the Technical University at Prague on an intensive studio design problem. The program is held in Prague, where the students live in apartments and study in the city. Studio instruction is supplemented with field trips to Vienna and other European cities. Students register at the University of Michigan; 6 hours of studio credit may be elected.

Japan Studio

Taubman College's newest studio encourages both graduate and undergraduate students to synthesize foreign cultural experience with architectural analysis and design. The 2003 Japan studio was based in the cities of Hikone, Tokyo, and Kyoto, with side trips to cities such as Sendai, Yokohama, Osaka, and Hiroshima. Organized site visits present a wide cross-section of Japanese architecture, ranging from culturally significant buildings to internationally recognized works, including exposure to local and emerging architectural practices. In addition to gaining an appreciation for the historic culture of Japan, students are prompted to explore architectural issues of particular significance within the modern Japanese metropolis.

Inquiries regarding the international studio study abroad programs should be directed to:

A. Alfred Taubman College of Architecture + Urban Planning
The University of Michigan
2150 Art and Architecture Building
2000 Bonisteel Boulevard
Ann Arbor, MI 48109-2069
Phone: (734) 936-0221
Fax: (734) 763-2322
Web: http://www.tcaup.umich.edu/studios/studios.html

Academic Policies and Procedures

The following information on academic policies and procedures specifically pertains to students enrolled in Years 3 through 6 of the Architecture Program and the Master of Urban Design Degree Program.

Students enrolled in the Doctoral Program in Architecture (Master of Science, Ph.D.) or the Urban and Regional Planning Program (Master of Urban Planning, Ph.D. in UTEP) must refer to the Horace H. Rackham School of Graduate Studies online publications for the most up-to-date information on admission, programs of study, courses, fees and expenses, financial support, academic standards, and various other policies at the web address below:

Office of Admissions
Horace H. Rackham School of Graduate Studies
The University of Michigan
1006 Rackham Building
915 E. Washington Street
Ann Arbor, MI 48109-1070
Phone: (734) 764-8129
Fax: (734) 647-7740
Email: rackadmis@umich.edu
Web: http://www.rackham.umich.edu/

Admission

Admission requirements and procedures are described in this section under Bachelor of Science Degree for Year 3 and under Master of Architecture Degree for Year 5.

Readmission

Students returning to the Architecture Program who have not been enrolled for more than 12 months must formally apply for readmission. Inquiries should be directed to:

Architecture Program Admissions
A. Alfred Taubman College of Architecture + Urban Planning
The University of Michigan
2150 Art and Architecture Building
2000 Bonisteel Boulevard
Ann Arbor, MI 48109-2069
Phone: (734) 764-1649
Fax: (734) 763-2322

The application for readmission should be filed no later than two months before the beginning of the term of re-enrollment. No application fee is required.

Orientation

Taubman College does not participate in the University Summer Orientation Program, but instead, conducts its own orientation program just prior to the start of fall term classes. It is important that all entering students attend. Students will receive detailed orientation information by early August.

Registration

Students are officially enrolled for a term at the time of registration. Each student completes this registration process by using Wolverine Access, a web-based information system. Directions for Wolverine Access registration are in the "University of Michigan Schedule of Courses" for a selected term. A late registration fee will be assessed to students who register after the end of the scheduled registration period for any term or program. Please refer to the section on "Fees and Expenses."

Computer Hardware and Software Recommendations

A personal computer is an essential tool for learning and professional work in the programs offered at Taubman College of Architecture + Urban Planning. Our students master computing technologies and use them throughout the curriculum. Although the College provides desktop computing clusters in various locations throughout the building and also hosts a campus computing site, it is strongly recommended each student provide his or her own personal computer.

Before making a purchase, students should consult the current hardware and software recommendations on the TCAUP Help Desk website at http://www.tcaup.umich.edu/helpdesk/help.html.

Academic Counseling

The chair of the Architecture Program coordinates academic counseling. Throughout their period of enrollment, students are encouraged to consult with various members of the faculty regarding academic and career goals. Students enrolled in Year 5 are required to have a Program Planning Form, signed by a faculty advisor, on file with the College Registrar. Although faculty and administrators may assist a student in arranging an academic program, the student is ultimately responsible for meeting all program and degree requirements.

Course Elections

GENERAL POLICY

Students in the Architecture Program are not required to have election worksheets or drop-add forms signed and stamped by the College Registrar, provided they are registering or making changes within the official registration/drop-add period for any given term. Except under extraordinary circumstances, students will not be allowed to drop, add, or modify courses

after the official drop-add deadline published in the University's Time Schedule. Any modifications to course elections after this date are subject to approval from the instructor(s) involved and/or the program chair or the chair's designee.

It is the responsibility of each student to adhere to the College's policies and procedures for course elections as described below. The College Registrar reviews the class schedules of all students to make sure they have complied with policy, but this does not take place until after the drop-add deadline has passed. If a student has not followed the College's policies and procedures, the Registrar has the authority to change course elections consistent with the following rules. The student will be notified of such changes. Students should contact the Registrar if they have any questions.

DROPPING AND ADDING

Students may drop and/or add courses through the third week of any full term and the second week of any half term. A course officially dropped after this deadline will appear on the academic record with the designation "W" (withdrawal). No credit is awarded toward the degree and grade point averages are not affected. A withdrawal from a course does not result in tuition reimbursement. An unofficial drop is when the student does not complete a course and does not obtain permission for a withdrawal. Unofficial drops are recorded on the academic record as an "ED." Provided the course is taken for a letter grade, an "ED" will be counted as an "E" when calculating grade point averages and no credit is awarded toward the degree.

AUDITING COURSES

A student may elect or modify a course as an official audit (visit) through the third week of any full term and the second week of any half term. Permission of the instructor (a signature on an election worksheet or drop-add form) is required and regular fees are assessed. A course elected as an official audit will appear on the academic record with the designation "VI," but no credit will be awarded toward the degree and grade point averages are not affected. It is the responsibility of the student to make arrangements with the instructor as to class attendance, assignments, and/or exams to be completed. Unsatisfactory completion of these requirements, as determined by the instructor, will result in an "ED" (unofficial drop) on the academic record. The "ED" will not affect grade point `averages because the course was not elected for a letter grade.

PASS/FAIL

A student may elect or modify a course to pass/fail through the third week of a full term and the second week of a half term, but under the following conditions:

1. Courses offered by Taubman College may not be taken pass/fail
2. Courses taken to fulfill pre-professional requirements for the B.S. degree—art, English, mathematics, physics, computers, humanities, natural sciences, and social sciences—may not be taken pass/fail
3. Courses taken to fulfill the cognate requirement for the M.Arch. degree may not be taken pass/fail
4. Courses taken as substitutes for required classes may not be taken pass/fail
5. English Language Institute courses may not be taken pass/fail
6. A maximum of one course per term may be taken on a pass/fail basis

Credit hours for courses satisfactorily completed as pass/fail will apply toward the degree, but grade point averages are not affected. Instructors are not informed of those students taking a course on a pass/fail basis. Instructors report grades as usual and the Office of the Registrar makes the following conversions:

- A through C- is entered on the academic record as "P" (pass) for credit
- D+ through E is entered on the academic record as "F" (fail) for no credit

CREDIT HOURS

A student electing more than 18 hours per term must obtain permission (a signature on an election worksheet or drop-add form) from the program chair.

ARCHITECTURE STUDIOS

A student is allowed to take only one architectural design studio per term. A studio cannot be elected as an official audit. At the graduate level, it is the responsibility of the student to use the correct course number, as outlined below, when electing a studio. For this purpose, Year 5 is defined as those students having 29 credit hours or less toward the M.Arch. degree, while Year 6 is defined as those students having 30 credit hours or more.

Year 5: Arch 552, fall term
Arch 562, winter term

Year 6: Arch 672, fall term
Arch 662, winter term

ARCHITECTURE INDEPENDENT STUDIES

Undergraduate students must use Arch 300 or Arch 400 as an independent study number. Permission of the instructor (an override) is required.

Graduate students must use Arch 600 (Arch 593 for Architectural History) as an independent study number. Permission of the instructor and approval by the program chair are required. Students should obtain a Tutorial Studies Approval Form from the College Registrar. Only one Tutorial Studies course may be elected per term, and no more than 6 credit hours of Tutorial Studies credit may apply toward the M.Arch. degree.

TRANSFER OF CREDIT

Credit hours approved for transfer from another program, unit or institution will appear on the student's transcript and will count toward the B.S. or M.Arch. degree. Only credit hours, and not grades or honor points, will be posted to the student's record. Requests for transfer of credit should initially be made to the College Registrar. In some cases, approval from the program chair is necessary.

Years 3 and 4

For undergraduate students, credit for academic courses from other units of the University and other institutions is evaluated by the Office of Undergraduate Admissions. All credit earned in other units of the University, except remedial courses below normal college-level and introductory officer education courses, will transfer.

Credit earned through high school advanced placement exams, conducted nationally by the College Entrance Examination Board, will transfer, provided the scores meet University standards. No credit will be awarded for placement exams offered by other departments of the University or by other institutions. Not more than 7 credit hours of nonacademic or technical courses earned at other institutions may be transferred; such credit is evaluated by the Architecture Program. Normally, not more than 10 credit hours of correspondence and/or extension work from other accredited institutions may be transferred.

Years 5 and 6

Credit for all course work is evaluated by the Architecture Program. A maximum of 10 credit hours may be transferred. Credits used to satisfy previous baccalaureate degree requirements may not be counted toward the M.Arch. degree.

Grading

GRADING SYSTEM

Course grades are awarded on a letter system, A through E. These letter grades are translated into honor points for each hour of course credit, as follows:

A	=	4.0	B-	=	2.7	D+	=	1.3
A-	=	3.7	C+	=	2.3	D	=	1.0
B+	=	3.3	C	=	2.0	D-	=	0.7
B	=	3.0	C-	=	1.7	E	=	0.0

In addition, the following notations are used to indicate unresolved academic situations:

ED	unofficial drop
I	incomplete
NR	no report from instructor
X	absent from examination
Y	course extends beyond published schedule of term

No honor points are given for courses in which any of these grades are assigned. Students receiving a grade of ED or NR are advised to contact the College Registrar immediately. Students earning grades of I or X are advised to read the section on Incomplete Grades and to contact their instructors immediately.

GRADE POINT AVERAGE

The grade point average (GPA) for a term is calculated by dividing the Michigan Honor Points (MHP) earned during the term by the number of Michigan Semester Hours (MSH) elected for the term. The cumulative grade point average is calculated by dividing the total of all Michigan Honor Points earned during enrollment in the program by the number of Michigan Semester Hours elected in that program. The Michigan Semester Hours do not include credit hours:

1. Transferred from another program, unit, or institution
2. For courses elected pass/fail or audit
3. For professional work experience

TERM GRADES/TRANSCRIPTS

Students enrolled on the Ann Arbor campus obtain grades through Wolverine Acess on the Web or on the Touch-Tone Grade Reporting System. Grades for the current term will be available as they are entered in the computer system at the end of the term. Official transcripts must be obtained from the Transcript Department within the Office of the Registrar.

INCOMPLETE GRADES

When a student is unable to complete the required work for any course because of illness or for other reasons acceptable to the instructor and only when the amount of unfinished work is small, the instructor may report a grade of "I" (incomplete). As soon as a student learns that an "I" grade has been (or will be) reported, he or she shall immediately contact the instructor. The instructor shall explain to the student the work that must be made up and shall set a time period for its completion within the limits described below. A final grade must be submitted to the Registrar within two months following the last day of classes of the term in which the "I" grade was earned. This deadline may be extended for just cause provided the instructor files a time extension form with the Registrar prior to the two-month deadline. No extension will be granted beyond the last day of classes of the first full term (fall, winter or spring/summer) following the term in which the "I" grade was earned, unless such an extension is approved by the Program Chair. If the final grade is not submitted prior to the two-month (or extended) deadline, the "I" grade will lapse to an "E." When a student is absent from an examination, the instructor may report a grade of "X." The procedures and deadline for making up this work are similar to those described above for "I" grades.

GOOD STANDING

To be in Good Standing in Years 3 and 4, a student must have a GPA of at least 2.0 for the term just concluded and a cumulative GPA of at least 2.0. To be in Good Standing in Years 5 and 6, a student must have a GPA of at least 3.0 for the term just concluded and a cumulative GPA of at least 3.0.

Academic Discipline

DEFINITION OF ACADEMIC DISCIPLINE

Any student not in Good Standing is on Academic Discipline under one of the following categories: Action Pending, Probation, Further Enrollment Withheld or Reinstated on Probation. As soon as possible after the College receives the transcripts, all students on Academic Discipline will be notified of their status. Each student so notified should contact the College Registrar immediately. For students on Academic Discipline, the program chair (or chair's designee) has the right and responsibility to approve course elections and changes, to require the election of specific courses and to establish a maximum or minimum number of courses and credit hours. The final responsibility for the administration of matters related to Academic Discipline rests with the Committee on Academic Standing. All actions of Academic Discipline are entered on, and become a permanent part of, the student's academic record; except that when such action results from administrative, faculty, or staff error, the entry will be expunged. As soon as the student corrects all academic deficiencies, Record Clear is noted on the transcript, and the student is again in Good Standing.

In this policy on academic discipline, term, except as modified, refers to either a full term or a half term. When a student elects less than 6 credit hours in a term, his or her academic status will normally be determined by counting the current term and the preceding term as a single combined term; except that if this totals more than 20 credit hours, the status will normally be determined by counting the current term and the following term as a single combined term.

ACTION PENDING

Action Pending is assigned when the academic record of a student not on Probation or Reinstated on Probation is incomplete (grades of ED, I, NR, or X) for the term just concluded, and when failure to correct this deficiency will result in a term GPA and/or cumulative GPA below 2.0 (undergraduate)/ 3.0 (graduate). Action Pending is assigned only for the two-month period permitted for finishing incomplete work. At the end of this makeup period, the student's academic record will be reviewed again and a status of either Good Standing or Probation will be assigned, except that Further Enrollment Withheld may be invoked in cases of extremely poor academic performance.

PROBATION

Probation is assigned when a student not already on Probation or Reinstated on Probation has a deficiency of:

1. Less than 10 honor points below a 2.0 (undergraduate)/3.0 (graduate) for the full term just concluded
2. Less than 5 honor points below a 2.0 (undergraduate)/3.0 (graduate) for the half term just concluded
3. Below a cumulative 2.0 (undergraduate)/3.0 (graduate) GPA

Probation is assigned for a period of one term only, during which the student is required to:

1. Earn at least a 2.0 (undergraduate)/3.0 (graduate) GPA for that term
2. Raise his or her cumulative GPA to at least 2.0 (undergraduate)/3.0 (graduate)
3. Meet any other special conditions of the Probation

If a student satisfies all requirements of the Probation, he or she is again in Good Standing. If a student fails to satisfy all of these requirements, a status of Further Enrollment Withheld is assigned. The student may not continue in the program unless he or she successfully appeals that action.

FURTHER ENROLLMENT WITHHELD

Further Enrollment Withheld is assigned when a student is in severe academic difficulty. Specifically one of the following:

1. If the term GPA, the cumulative GPA or any combination thereof is below 2.0 (undergraduate)/3.0 (graduate) for two successive terms

2. If there is a deficiency of 10 or more honor points below either a 2.0 (undergraduate)/3.0 (graduate) full term GPA or cumulative GPA
3. If there is a deficiency of 5 or more honor points below either a 2.0 (undergraduate)/3.0 (graduate) half term GPA
4. If there is lack of reasonable progress toward a degree
5. If a student on Probation or Reinstated on Probation fails to meet all requirements of the Probation

When further enrollment is withheld and if the student is not already on Reinstated on Probation, he or she has the privilege of appealing the action, in accordance with procedures established by the Committee on Academic Standing. The student will be required to explain in writing the particular reasons for the low academic performance and to present a compelling argument why continuing enrollment or readmission should be permitted. Each case will be carefully considered on its own merits. If the Committee on Academic Standing approves the appeal, the student is Reinstated on Probation. If the Committee denies the appeal, the student is prohibited from enrolling in the College normally for at least two full terms, and the status of Further Enrollment Withheld continues in effect. During the last term of the required disenrollment period, the student may petition for reinstatement by presenting evidence that, during this period, he or she has taken steps to substantially improve his or her chances for academic success in the remainder of the program. If the Committee approves this petition, the student is Reinstated on Probation.

REINSTATED ON PROBATION

Reinstated on Probation is assigned following a student's successful appeal, or subsequent petition, of Further Enrollment Withheld. Reinstated on Probation is assigned for a period of one term only during which the student is required to:

1. Earn at least a 2.0 (undergraduate)/3.0 (graduate) GPA for the term, unless a higher GPA is prescribed by the Committee on Academic Standing
2. Raise his or her cumulative GPA to a level prescribed by the Committee on Academic Standing
3. Meet any other special conditions of the probationary reinstatement

If a student satisfies all requirements of the probationary reinstatement and has a cumulative GPA of at least 2.0 (undergraduate)/3.0 (graduate), he or she is again in Good Standing. If a student satisfies all conditions of the probationary reinstatement except that the cumulative GPA is still below 2.0 (undergraduate)/3.0 (graduate), he or she is on Probation. If a student fails to satisfy the requirements of the probationary reinstatement, further enrollment is automatically withheld and further appeal for continuing enrollment is not permitted.

Repeating Courses

A student must repeat a course that he or she has failed if the course is either a required course or a prerequisite for another course that the student wishes to elect. A student may repeat a course in which he or she has received a passing grade.

All elections of a course remain on the transcript. The Michigan Semester Hours and the Michigan Honor Points from both the original and repeat elections, except in those cases involving cross-campus transfers, are included in the GPA calculation; credit hours toward program requirements are counted only once.

The following rules govern the repeating of failed required courses in the Architecture Program.

1. If a student earns a grade below "D" (1.0) in a required course, he or she must repeat the failed course.
2. If a student earns a grade below "D" (1.0) in a course that is a prerequisite for a later course in a sequence, he or she may continue with the next course in the sequence, but must repeat the failed course.
3. If a student earns a grade below "D" (1.0) in a second course (whether consecutive or not) in a sequence, he or she cannot continue with subsequent courses in the sequence until all earlier courses in the sequence have been satisfactorily completed prior to (and not concurrent with) election of the next course in the sequence.
4. If a student withdraws from a required course, he or she must repeat that course in its entirety at a later date. If the course is a prerequisite for a later course in a sequence, the course in which the withdrawal occurred must be satisfactorily completed prior to (and not concurrent with) election of the later course.
5. When a student is required to repeat a course and when, in the interim, the credit hours have changed and/or the course content has changed significantly, the program chair shall determine the extent of the remedial work required.

Withdrawal from Program

A student who terminates his or her enrollment during the term is required to officially withdraw. The student is responsible for initiating the withdrawal; he or she should contact the College Registrar. Any refund of fees is handled in accordance with University regulations as described in the section on Fees and Expenses.

Student Records

An academic file is maintained by the College for each student. The file contains admission materials, academic records and transcripts, correspondence, etc. The College endorses the University's Policy on Student Records, which meets the standards set forth in the Family Educational Rights and Privacy Act of 1974. Each student has the right to examine all materials in his or her file, except as prohibited by the above policies.

The College Registrar and the administrative officers of the College, or their appointed representatives, shall have direct access to all records. All other persons, including faculty, may have access to portions of a student's record only when so authorized by the student.

Joint/Dual Degrees

Students wishing to pursue a dual degree program other than those described are advised to contact the College Registrar. Requests are approved on an individual basis.

Officer Education Programs

Officer education training programs are available to all students enrolled in the University of Michigan. Enrollment in officer education programs is voluntary, but the University and the armed forces expect each student who volunteers to meet the full obligations accepted. Since there are minor variations in the programs, interested students are encouraged to consult the chairpersons of the respective Army, Navy, and Air Force Officer Education Programs for information.

Questions regarding the granting of academic credit for Officer Education Program course elections for students in the Architecture Program should be directed to the College Registrar.

Index of Architecture Program Courses

Environment and Behavior

513	Social Change and the Architect
523	Theories of Meaning in Contemporary Architecture
526	Sociocultural Issues in Planning and Architecture
561	Building Programming
567	Program/Built Environment Evaluation
613	New Roots for Environmental Design and Planning

Environmental Technology

315*	Environmental Technology I
425*	Environmental Technology II
515	Advanced Architectural Acoustics
525#	Computer Applications in Environmental Technology
535#	Case Studies in Environmental Technology
545#	Advanced Lighting Design
555#	Building Systems and Energy Conservation
565#	Research in Environmental Technology
575#	Building Ecology
585#	Advanced Building Technology
605#	Environmental Design Simulation

Experimental

209	Special Topics in Architecture
409	Special Topics in Architecture
509	Experimental Course

Graphics, Visual Communications

201+	Basic Drawing
202+	Graphic Communications
218+	Visual Studies
551	Advanced Architectural Graphics

Historic Preservation

673	Historic Preservation and Urban Conservation
683	Techniques of Historic Preservation and Restoration

History of Architecture

313*	History of Architecture I
323*	History of Architecture II
413!	History of Architecture and Urbanism
443	History of Urban Form
503#	Special Topics in Architectural History
518#	Renaissance Architecture
528#	Baroque Architecture
533#	19th Century Architecture

543# 20th Century Architecture
553# American Architecture
563# Colonial/Post-Colonial Architecture and Urbanism
568# Russian Architecture
573# History of the Architect
588# History of Building Technology
593 Tutorial Studies in Architectural History
603# Seminar in Architectural History
623# Seminar in Thresholds of Architectural Theory
633# Seminar in Renaissance and Baroque Architecture
643# Seminar in Modern Architecture
653# Seminar in American Architecture
663# Seminar in Russian Avant-Garde Architecture
693# Seminar in Colonial Architecture/Urbanism

Independent Studies

300 Tutorial Studies in Architecture
400 Tutorial Studies in Architecture
500 Student Organized Study
600 Tutorial Studies in Architecture

Introductory

212+ Understanding Architecture

Management and Practice

517 Architecture/Planner as Developer
527 Introduction to Building Economics
537 Housing Systems
583** Professional Practice

Structures

314* Structures I
324* Structures II
514# Frame Structures
524# Surface Structures
534# Reinforced Concrete Structures
544# Wood Structures
554# Steel Structures
564# Advanced Materials Structures

Urban Planning and Design

423	Introduction to Urban and Environmental Planning
519	Principles and Practice of Urban Design I
529	Principles and Practice of Urban Design II

* Course required for Bachelor of Science (B.S.) degree

** Course required for Master of Architecture (M.Arch.) degree

\# One course in each of three subject areas—Environmental Technology, History of Architecture, and Structures—required for M.Arch. degree

\+ Not open to students enrolled in the College

! 3+ option only

Introduction

The Doctoral Program in Architecture was one of only four such programs in the United States when it was established in 1969. Since that time, its major goal has been to contribute to the development of a comprehensive understanding of the knowledge base of architecture. This is accomplished through the education of scholars who conduct significant research, thereby making important contributions to the development of the field of architecture. The program has granted over 160 architecture doctoral degrees, more than any institution in the country.

The Doctoral Program in Architecture offers two post-professional degrees: the Doctor of Philosophy degree and the Master of Science degree. While some doctoral programs have tended to formulate curricula around concepts and methods of related disciplines, such as art history, engineering, or the social sciences, the concept of a comprehensive model of architectural research constitutes the basis for the organization and content of the curricula of both degrees offered by the Program.

Educational Resources

The Doctoral Program in Architecture provides students with a broad range of resources needed to support advanced research. Each of the three specialization areas is represented by nationally and internationally recognized members of the College faculty. In addition, the University of Michigan provides doctoral students with access to an unusually rich variety of faculty and researchers in other departments and colleges. Faculty from other University units are often called on to participate in Doctoral Program activities and serve as members of dissertation committees. The Program also draws upon a number of consultants from outside the University.

The strong research orientation of the College and the University has resulted in the establishment of research facilities that are among the best in the country. Computing facilities include an instructional computing facility shared by the School of Art and Design and Taubman College, the College's Computer Laboratory, and a small cluster of Macintosh and Windows computers. Students also have access to the Building Technology Laboratory. When sponsored research projects conducted by faculty members are consistent with the research interests of students, they may participate in these projects in an academic or professional capacity.

Other research units on campus also provide specialized laboratory facilities, exposure to a broad range of research activities and possibilities for field experience. Among the resources most commonly used by students are the Environmental Simulation Laboratory, the Institute of Gerontology, the Institute for Social Research, the Center for Research on Learning and Teaching, the Institute of Public Policy Studies, the Statistical Research Laboratory, and the University of Michigan Medical Center. By special arrangement, students may also have access to research and testing facilities outside the University.

Areas of Specialization

Each student in the Doctoral Program in Architecture will select a major area of specialization from the three areas of specialization described below. These areas represent the foci of research and teaching by Program faculty and describe generally recognized areas of architectural research. Studies that span across areas are also encouraged. Master of Science degree students engage in intensive study of new applications and issues in architecture. Ph.D. degree students conduct substantive research that contributes to the development of new knowledge or new approaches to the theory and practice of architecture.

BUILDING AND ENVIRONMENTAL TECHNOLOGY

How buildings are made and how they are controlled is the realm of Building and Environmental Technology. There are many possible subareas of research within this specialization. They include materials and construction, structural systems, lighting and daylighting, acoustics, heating and air-conditioning, energy conservation, sustainable design, and intelligent buildings. Typically, research in these areas requires physical testing of building components, computer simulation of systems performance, and statistical evaluation.

In recent years, faculty research in building and environmental technology has focused on heating and air conditioning, lighting and daylighting, sustainable materials and materials behavior, structural form optimization, energy conservation, sustainable design, and intelligent buildings. Excellent research facilities are available for the conduct of research in these areas.

Building and environmental technology courses in the College are augmented by course work in other University units. Typical cognate courses include heat transfer, thermal-dynamics, industrial ecology, and statistics.

DESIGN STUDIES

The specialization "Design Studies" focuses on research and knowledge of the design process, decision-making, and the cultural and behavioral context of these activities. A vital component of this area is the development of computer-based tools to support both the activities of design and design research. Within this specialization, students may concentrate within one or more of the following interrelated components. Students take advantage of a rich array of University resources that contribute to the knowledge-base of this specialization; cross-disciplinary research is encouraged.

Design Process and Design Cognition: Approaches to design process and design cognition are examined in terms of common aspects of designing in general and in the context of architectural design. Issues of design knowledge, representation, and decision making are investigated within the changing social and economic structure of design. Also issues of management of complex interdisciplinary design are addressed. Studies of design process and design cognition are often interdisciplinary in nature, drawing upon fields such as organizational dynamics, cognitive science, psychology, engineering, and economics.

Cultural and Behavioral Studies: This area encompasses studies of how people, organizations, and communities engage, interpret, and are influenced by the built environment. An understanding of these issues is important to the advancement of architectural theory, architectural practice, and the formulation of public policy. Within this specialization, thematic emphases that are particularly well supported by the program faculty and the interdisciplinary resources of the College and the University include:

- Community Design and Quality of Life
- Workplace Design and Organizational Studies
- Design for Special Populations
- Meaning of Place

For example, studies in Workplace Design and Organizational Studies Resources include the program in Organizational Behavior at the School of Business Administration, the School of Information, the School of Public Policy, the Center for Research in Electrically Mediated Work (C.R.E.W. Labs) and the Interdisciplinary Committee on Organizational Studies.

Urban Design and Building Form: Studies in this area address the multiple links between architectural form, spatial structure, typology, functional policy implication, behavior and cultural values. Representing and modeling the spatial dimensions of behavior become aspects of the formal description of built as well as virtual environments. Studies in

urban design and building form may be closely linked with cultural and behavioral studies, urban planning, public policy, and with the field of computer science.

Urban Design and Building Form: Studies in this area address the multiple links between architectural and urban form, spatial structure, typology, functional/policy implication, behavior, and cultural values. Representing and modeling the spatial dimensions of behavior become aspects of the formal description of built as well as virtual environments. Studies in this area may be closely linked with cultural and behavioral studies, the College's Master of Urban Design and Master of Urban Planning, and with the fields of public policy and computer science.

Design Computing: Since their pioneering research on computer-aided design techniques during the 1960's, College faculty and students have played an active role in building computing environments to support the design process. Areas of current interest include geometric modeling, interactive graphics programming, knowledge-based design systems, databases for design, collaborative design, and simulation. This area links with the field of computer and information science.

ARCHITECTURAL HISTORY AND THEORY

The specialization area in the History and Theory of Architecture is concerned with a critical examination of the record of architectural development from the earliest times to the present. It provides for the development of new knowledge and methods for promoting critical inquiry into the history and theory of architecture and producing informed insights into the varied factors and influences that have shaped design decisions over time. This specialization area takes a comprehensive approach to architectural history and theory, viewing them both as independent and interdependent facets of the discipline of architecture. By examining and discriminating among the various methodologies and points of view that attempt to describe and explain knowledge about architecture, students become better equipped to determine the appropriate method or approach to be adopted in their inquiry into the history and theory of architecture.

The Architectural History and Theory specialization area encompasses two broad, interrelated facets in which students may specialize. The first facet, focusing on historical inquiry, involves accounting for and critiquing the intentions of the makers as well as the patrons and consumers of architecture in relation to the conditions of their time and the constraints of their respective tasks and involvements. The primary objective of this inquiry is to ascertain and assess, on the basis of documentary research, the actual contexts within which a given building, ensemble, or architec-

tural phenomenon would have originated in its time and place as well as have exhibited any subsequent changes over time.

The second facet focuses on theoretical exegesis and theory-building. New methodologies and theoretical stances, grounded in a critical examination of past and present bodies of knowledge on various aspects of architecture, may be advanced for the purpose of working out and testing new theoretical bases for the discipline of architecture.

Application Materials

Students seeking admission to the Doctoral Program in Architecture to pursue either the M.Sc. degree or the Ph.D. degree should obtain application materials from:

Doctoral Program in Architecture
A. Alfred Taubman College of Architecture + Urban Planning
The University of Michigan
2226 Art and Architecture Building
2000 Bonisteel Boulevard
Ann Arbor, MI 48109-2069
Phone: (734) 763-1275
Fax: (734) 763-2322
E-mail: arch.doctoral.program@umich.edu
Web: http://www.tcaup.umich.edu/

Rackham School of Graduate Studies Information

Unless otherwise specified, the rules, regulations, and requirements of the Horace H. Rackham School of Graduate Studies apply to both degrees offered by the Doctoral Program in Architecture. Please refer to the online publications (in HTML and PDF formats) for the most up-to-date information on admission and programs of study at the web address below:

Office of Admissions
Horace H. Rackham School of Graduate Studies
The University of Michigan
106 Rackham Building
915 E. Washington Street
Ann Arbor, MI 48109-1070
Phone: (734) 764-8129
Fax: (734) 647-7740
E-mail: rackadmis@umich.edu
Web: http://www.rackham.umich.edu/

Master of Science Degree

Description and Objectives

The Master of Science degree is designed to meet the need for post-professional education in applied research. It is a two and one-half term, intensive, non-studio-based program. It is particularly appropriate for mid-career professionals, students interested in pursuing a Ph.D. but who lack the knowledge or skills for immediate pursuit of this degree and persons who presently hold a professional degree in architecture and are seeking to broaden their knowledge and skill base, thus enhancing their employment prospects.

In contrast to the Master of Architecture degree, the Master of Science degree is a non-professional, non-terminal degree. Those who hold only the Master of Science degree are not eligible to apply for professional registration. Moreover, in most cases, the Master of Science curriculum does not include studio design courses. Instead, it culminates in an independent research project.

Admission Requirements

Admission to the Doctoral Program in Architecture to pursue the Master of Science degree is limited to the Fall term only. To qualify for admission, an applicant must have earned:

1. A professional degree in architecture, or
2. A professional degree in a design field, or
3. A bachelor's or more advanced degree in any field and significant professional exposure to architecture

In addition, the following items are required from applicants:

1. An undergraduate grade point average of 3.0 (B) or better. For applicants who have been out of school for some time, professional accomplishment will be considered along with the GPA
2. A statement of purpose describing the applicant's proposed area of specialization and research interests
3. Examples of work by the applicant which may consist of a portfolio, published articles, or other papers and documents which are relevant to the applicant's proposed specialization area
4. The Graduate Record Examination scores
5. A minimum of three letters of recommendation—if possible, at least two of these letters should be from the applicant's previous professors
6. For applicants whose native language is not English, the TOEFL language test with a score of 560 or better (paper-based test); 220 or better (computer-based test). The Michigan English Language Assessment Battery (MELAB) test with a score of 80 or better may be substituted for the TOEFL test requirement.

APPLICATION PROCEDURE

All applicants should follow carefully the instructions in the Horace H. Rackham School of Graduate Studies application brochure. In addition to the materials listed in the brochure, all applicants must submit official scores for the Graduate Record Examination, three letters of recommendation, and examples of work relevant to the applicant's proposed specialization area to the following address:

Master of Science Degree in Architecture
A. Alfred Taubman College of Architecture + Urban Planning
The University of Michigan
2226 Art and Architecture Building
2000 Bonisteel Boulevard
Ann Arbor, MI 48109-2069
Phone: (734) 763-1275
Fax: (734) 763-2322
E-mail: arch.doctoral.program@umich.edu

Requests for information may also be directed to this address.

APPLICATION DEADLINE

Completed applications must be submitted by **January 15**. If possible, students are encouraged strongly to visit the Doctoral Program for an interview.

Master of Science Degree Requirements

To earn the Master of Science degree, a student must complete a minimum of 32 credit hours with a GPA of 3.0 (B) or better. Specifically, a student must complete:

1. Two courses (2 credit hours) of Orientation Seminar (Arch 811, Arch 821)
2. One course (3 credit hours) of Research Design and Methods in Architecture or another methods course approved by the Doctoral Program
3. One course (6 credit hours) of Independent Research (Arch 739) under the direction of the student's faculty advisor, pursued over two consecutive terms, typically Winter and Spring. Those continuing on to earn a Ph.D. from the Doctoral Program in Architecture need not elect Arch 739
4. One course (3 credit hours) of Area Seminar (Arch 823, 824, 825) in the student's area of specialization
5. Four courses (12 credit hours) of elective architecture courses in the student's area of specialization (for Architectural History and Theory, 6 of these credit hours must be area course offerings)
6. Two courses (6 credit hours) of cognate courses in the student's area of specialization. It should be noted that courses offered by

University units other than the Doctoral Program in Architecture and the Architecture Program are considered to be cognate courses

All course elections must be approved by the student's faculty advisor on a Master of Science Degree Planning Form. No advanced placement credits may be counted toward the 32 credit hour requirement.

Elective and cognate courses are elected on the basis of area of specialization and in consultation with the student's major advisor. Areas of specialization for the Master of Science degree option are those described in the previous Introduction section, under Areas of Specialization.

Some Master of Science degree students apply and are accepted into the Ph.D. program. These students may count two courses total from their M.Sc. degree program towards either their Ph.D. major or minor; however, they must still complete the total credit hour requirement for the degree.

Examples of Course Requirements and Sample Schedules:
Master of Science

I. BUILDING AND ENVIRONMENTAL TECHNOLOGY (LIGHTING/DAYLIGHTING OPTION)

This option introduces the student to research tools in analysis and testing of thermal, lighting, and daylighting environments as well as building systems integration and energy conservation. In the second term, emphasis is placed on the integration of energy conservation concepts during the evolution of an architectural design project. The independent research may focus on topics such as building climatology, passive solar energy utilization, computer applications for thermal analysis, or the interdependence of daylighting and thermal systems.

Fall Term	Credit Hours
Arch 565 Research in Environmental Technology	3
Arch 575 Building Ecology	3
Arch 600 Tutorial Studies in Architecture (Computers in Lighting)	3
Cognate	3
Total	12

Winter Term	Credit Hours
Arch 555 Building Systems and Energy Conservation	3
Arch 813 Research Design and Methods	3
Arch 825 Seminar in Building and Environmental Technology	3
Cognate	3
Total	12

Spring Half-Term	Credit Hours
Arch 739 Independent Research	6
Total	6

2. DESIGN STUDIES (COMPUTER-AIDED DESIGN OPTION)

This option is aimed at students with a computing background who wish to extend and broaden their skills in the areas of graphic and CAD programming. During the second term, the seminar brings together students from all levels of the Architecture Program and the Doctoral Program in Architecture and covers current and emerging topics in computer-aided building design and computer graphics.

Fall Term	Credit Hours
Arch 411 CAD Fundamentals I	3
Arch 431 Computer Programming for Architects	3
Arch 521 CAD Fundamentals II	3
Cognate	3
Total	12

Winter Term	Credit Hours
Arch 541 2D CAD Programming	3
Arch 813 Research Design and Methods	3
Arch 824 Seminar in Design Process and Methods	3
Cognate	3
Total	12

Spring Half-Term	Credit Hours
Arch 739 Independent Research	6
Total	6

3. ARCHITECTURAL HISTORY AND THEORY (HISTORY OPTION)

This option is directed to professionals seeking to increase their knowledge and enhance their skills in the history of architecture.

Fall Term	Credit Hours
Arch 533 History of Architecture III	3
Arch 623 Seminar in the Thresholds of Architectural Theory	3
Arch 813 Research Design and Methods in Architecture	3
Cognate	3
Total	12

Winter Term	Credit Hours
Arch 553 History of Architecture IV	3
Arch 823 Seminar in Architectural History and Theory	3
History of Art Elective	3
Cognate	3
Total	12

Spring Half-Term	Credit Hours
Arch 739 Independent Research	6
Total	6

Ph.D. In Architecture

Description and Objectives

The Doctor of Philosophy (Ph.D.) degree is designed for individuals who are interested in acquiring the knowledge and skills that are needed to conduct substantive, innovative, and original research that contributes to the theoretical and methodological foundation of architecture and to disseminate it through teaching, publication, and practice. To this end, the curriculum is structured so that students move gradually from an overview of architectural research to the identification and pursuit of major and minor areas of specialization and—finally—to highly specialized original dissertation research. This framework promotes stimulating intellectual discourse among individuals with varying research philosophies and interests. Both faculty and students interact within this framework to develop an enhanced understanding of how specialized research contributes to the definition and evolution of an improved theoretical and methodological basis for the discipline of architecture.

Admission Requirements

Admission to the Doctoral Program in Architecture to pursue the Ph.D. degree is limited to the Fall term only. Students interested in pursuing this degree may enter the Program by means of regular or special admission. The academic requirements of the Ph.D. degree apply to persons qualifying for regular admission. Those accepted under special admission are subject to additional requirements.

To qualify for regular admission, an applicant must have earned:

1. A professional degree in architecture, or
2. A master's degree in any field, accompanied by a bachelor's degree in architecture or other evidence of the applicant's commitment to the discipline of architecture such as a reasonable amount of work experience in architecture

Special admission applies to persons with:

1. A pre-professional bachelor's degree in architecture, or
2. A bachelor's or more advanced degree in any field and significant professional exposure to architecture

Additional degree requirements accompanying a special admission will vary with individual cases and may range from a few courses to an entire year or more of preparatory work. Applicants with insufficient background in architecture will be required to take additional course work including at least one year of a studio design course. Allowance may be made for academic credit beyond that related to a degree as well as for individual achievement, professional experience, and other aptitudes exhibited by the applicant.

In addition to the above requirements, the following items are required from applicants:

1. An undergraduate grade point average of 3.3 (B+) or better
2. A graduate grade point average of 3.5 or better
3. A statement of purpose describing the applicant's proposed area of specialization and research interests
4. A minimum of three letters of recommendation—if possible, at least two of these letters should be from the applicant's previous professors
5. The Graduate Record Examination scores
6. Examples of work by the applicant which may consist of a portfolio, published articles, or other papers and documents which are relevant to the applicant's specialization area
7. For applicants whose native language is not English, the TOEFL language test with a score of 600 or better (paper-based test); or 250 or better (computer-based test). The Michigan English Language Assessment Battery (MELAB) test with a score of 85 or better may be substituted for the TOEFL test requirement.

APPLICATION PROCEDURE

All applicants should carefully follow the instructions in the Horace H. Rackham School of Graduate Studies application brochure. In addition to the materials listed in the Horace H. Rackham School of Graduate Studies application, all applicants must submit official scores for the Graduate Record Examination, three letters of recommendation, and examples of work relevant to the applicant's proposed specialization area to the following address:

Doctor of Philosophy Degree in Architecture
A. Alfred Taubman College of Architecture + Urban Planning
The University of Michigan
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2000 Bonisteel Boulevard
Ann Arbor, MI 48109-2069
Phone: (734) 763-1275
Fax: (734) 763-2322
E-mail: arch.doctoral.program@umich.edu

APPLICATION DEADLINE

Completed applications must be submitted by **January 15**. If possible, students are encouraged strongly to visit the Doctoral Program for an interview.

EVIDENCE OF QUALIFICATIONS

In addition to submitting evidence of acceptable academic achievement, applicants must provide evidence of their qualifications for study in their

proposed area of specialization. In the evaluation of an application, much weight is placed on the applicant's Statement of Purpose. The statement should explain why the applicant wishes to pursue a Ph.D. degree and should include a description of the applicant's career plans as well as a thorough discussion of the proposed research topic. Moreover, the statement should include references to previous research that informs the definition of the topic. Evidence of research experience and professional or other accomplishments should be provided if available.

Applicants are encouraged to submit examples of work, which they have performed either as individuals or as members of a team. If this is provided in the form of an illustrated brochure, it should not exceed 8″ x 10″. Applicants may request the return of this material at their own expense, which will be done within two months after they have been notified of the action taken on their application. After this period, the material will be discarded.

Students pursuing the Ph.D. degree place heavy demands on faculty time and other University resources. For the Program to provide them with needed resources, the number of admissions must be kept relatively small. Normally, only 5–7 new students can be admitted each year. This number represents a small percentage of those applying for admission. It should be noted that priority for acceptance is not necessarily given only to those qualifying for regular admission.

Ph.D. in Architecture Degree Requirements

Students who have been offered regular admission are required to complete a minimum of 39 credit hours of graded course work (including core courses and electives) prior to achieving candidacy. Specifically, students are required to take 15 credit hours of core courses (including 4 credit hours related to the Research Practicum), 12 credit hours of courses in the major specialization area (for Architectural History and Theory, 9 of these credit hours must be area course offerings and include two 600 level or higher seminars), 9 credit hours of courses in the minor specialization area, and 3 elective courses. Students must complete two consecutive terms of full-time graduate work in residence beginning in the fall term of their first year so that the core courses may be taken in the required sequence. Students who have been offered special admission will be required to complete additional course work.

Rackham requires that graduate-level cognate courses of at least 4 credit hours be satisfactorily completed in a department or program other than the Doctoral Program in Architecture and the Architecture Program. These courses may be used to satisfy the major or minor requirement and must be approved by the student's major professor.

Upon satisfactorily completing all Ph.D. course work, a Ph.D. student is eligible to apply for and be awarded the Master of Science degree.

Core Course Offerings

The core curriculum for the program consists of courses in the theoretical foundations of architecture, research methods, and seminars relating to the student's major and/or minor specialization areas. For detailed descriptions of these courses see the Course Descriptions section.

Course	Hours
Arch 811/821 Orientation Seminar	2
Arch 812 Theory in Architectural Research	3
Arch 813 Research Design and Methods in Architecture	3
Arch 823 Area Seminar: Architectural History and Theory	3
Arch 824 Area Seminar: Design Studies	3
Arch 825 Area Seminar: Building and Environmental Technology	3
Arch 839 Research Practicum	1–4

With approval from the Doctoral Program, a student may elect to take another 3 hour methods course in lieu of Arch 813.

The Area Seminars each represent a Doctoral Program specialization area. Every student is required to attend the one in his/her major specialization area. The student may, however, be required by the minor advisor to elect a second area seminar. In that case, the second seminar would count toward the required 9 credits in the student's minor area.

Each student must elect, with the approval of his/her major advisor, to take the Research Practicum in one of two ways: 1) as a 4 credit hour independent study with his/her major advisor, or 2) as 1 credit hour of independent study with his/her major advisor taken in conjunction with a 600 or higher level course of at least 3 credit hours in his/her major area of specialization.

Major and Minor Areas of Specialization

Each student is required to identify both a major and a minor area of specialization. This requirement is intended to reinforce the development of an understanding of architecture as a discipline.

The major is defined as that area of specialization in the Doctoral Program within which the student is expected to write his/her dissertation. It is chosen from one of the three major areas of specialization within the Program (see Areas of Specialization at the beginning of this section):

1. Building and Environmental Technology
2. Design Studies
3. Architectural History and Theory

The courses and seminars offered within the major area of specialization may be augmented by cognate course work in areas that complement a student's research interests. These may include not only other area course offerings within Taubman College, but also courses offered by other units on campus. Focusing one's work in a specialization area is aimed at preparing the individual for a productive academic career in teaching and conducting research in architecture, or for creative work in the architectural profession.

The minor area of specialization is defined as that subject area, either within the Doctoral Program in Architecture or within another University unit, which is both complementary to and distinct from, the student's major area of specialization. Minor work is possible in one of the remaining two areas of specialization within the Program, in Urban Planning within Taubman College, or in a subject area offered by another University of Michigan department, program, or center that has been approved for Rackham graduate credit and which is deemed appropriate for the student's program of study and approved by the major professor. The cognate courses required by the Graduate School may, if approved by the Doctoral Program Advisory Committee, be used in partial fulfillment of the major or minor specialization area requirements.

At the end of the first year of study, each student is required to submit to the Doctoral Program Advisory Committee a Program of Study identifying: (1) a major area of study, (2) a minor area of study, and (3) all course work, completed and proposed. The Doctoral Program Advisory Committee reviews each Program in consultation with the student's major and minor professors and makes recommendations for any modifications deemed necessary prior to the student's entering his/her second year of study. Once approved, the Program must be fulfilled to meet graduation requirements. If changes are found necessary or desirable, a revised Program must be submitted to the Advisory Committee for approval.

Admission to Candidacy

A student advances to candidacy status after successfully completing a Qualifying Examination and after having the results of this examination ratified by the Program Advisory Committee.

A student should make every effort to advance to candidacy within four years or sooner from the date of first enrollment.

QUALIFYING EXAMINATION

The Qualifying Examination is intended to be both a personally-broadening and synthesizing experience. In general, it is an examination designed to challenge students with the kinds of questions that researchers and scholars seek answers to throughout their careers. Specifically, the Qualifying Examination seeks to pose the kinds of questions that will help the student: (1) look back and rethink in a broader framework the knowledge that has been gained through course work and (2) to look ahead and conceptualize in a broader context the question(s) that he or she is about to encounter as a researcher.

A. PREREQUISITES

1. Completion of 39 Credit Hours of Graded Course Work
   Course work includes 15 credit hours of core courses (including 4 credit hours of courses related to the Research Practicum), 12 credit hours of courses in the student's major specialization area, 9 credit hours of courses in a minor specialization area, and 3 of elected credit hours.
   To satisfy fully these requirements, each student should verify his/her academic record with the Program Secretary at the beginning of the term in which he or she anticipates taking the Qualifying Examination. The student's academic record should be reviewed by the major faculty advisor.

2. Formulation of a Dissertation Topic
   A dissertation topic serves to provide an important context for formulating examination questions and should be developed in consultation with the student's major faculty advisor. The dissertation topic should be defined and articulated in a text that is as concise as possible. This text should provide an indication of the research question or hypothesis, the methods that may be used and the possible outcomes of the research. It is understood that these ideas are preliminary.

3. Formation of an Examination Committee
   After articulating a dissertation topic, the student continues to consult with his/her major faculty advisor to form an Examination Committee. The Examination Committee will include at least three, but not more than five members chosen by the student in consultation with his/her major advisor and approved by the Program Chair. The committee will include the major and minor professors, as well as at least one and no more than three members from the student's major and/or minor areas. At least two members must be faculty from the Doctoral Program in Architecture. The Examination Committee works with and counsels the student in preparing for the examination.

B. CONTENT, SCHEDULING AND FORMAT OF EXAMINATION

The examination consists of three written examinations and an oral examination.

Prior to the start of the examination, the Examination Committee and the student will decide on a schedule for the four examinations. A copy of this schedule should then be forwarded to the Program Chair. An additional copy should be forwarded to the Program Secretary. Although this schedule may be changed, it will provide a general time frame, understood by all participants, concerning the schedule for the examinations. Students are reminded that they should plan to begin their examinations at least 30 days prior to the last day of the term in which they hope to complete them. It should be noted that no more than 90 days are permitted to elapse between the beginning of the examinations and their conclusion.

I. The Written Examinations

The written examinations consist of a series of essay questions formulated with each student's particular course preparation, research interests, and proposed dissertation topic in mind.

a) Major Examination questions are developed by the major professor. They are aimed at testing the student's knowledge of his/her declared major area of specialization and his/her ability critically to integrate various aspects of that knowledge. The parameters of the student's declared major area of specialization and the emphasis reflected in the major examination questions are, for the most part, established by the major professor in consultation with the student. The major examination is scheduled to take no more than four days.

b) The Minor Examination is intended to cover the student's minor area of specialization. The question(s) for the minor examination is/are developed by the minor professor in a manner similar to those prepared for the major examination. The minor examination is scheduled to take no more than two days.

c) The Integrative Examination is aimed at evaluating the student's ability to integrate critically basic theoretical, methodological, and substantive issues in architectural research. The faculty member who has been assigned to the Examination Committee will propose the integrative examination question(s). The questions for the integrative examination are intended to address general issues that may be considered topics for discussion by all researchers and scholars in architecture. For example, issues such as those discussed in Arch 812 and Arch 813 provide the kind of focus a student may expect. The integrative examination is scheduled to take no more than two days.

(1) Delivery of Completed Examination Questions
As each written examination is completed, the student is required to deliver to the Program Secretary one copy for his/her file and one copy for each of his/her Examination Committee members.

(2) Evaluation of the Written Examinations
Student responses to the three written examinations are reviewed by all members of the Examination Committee. However, each member of the Examination Committee has the responsibility to evaluate critically student responses to his/her questions. If the results of this evaluation are deemed satisfactory, they are used to formulate questions for the oral exam. If the written examinations are not passed, the student may be separated from the Program. The Examination Committee may, however, permit one re-take of any or all of the written examinations as well as indicate any additional requirements the student needs to satisfy to prepare for re-examination. Only those examinations evaluated as unsatisfactory will need to be re-taken.

2. The Oral Examination
The oral examination is based on the three written examinations. The Examination Committee shall meet at least once prior to the oral examination to discuss the results of the written examinations and to formulate questions for the oral examination.

The oral examination is aimed at assessing the student's ability to synthesize the theoretical and methodological issues in his/her major and minor areas of specialization within the discipline of architecture. This examination is also intended as a forum for the Examination Committee to meet with the student and discuss issues arising from the written examinations. The Examination Committee may choose to conduct this discussion in closed session.

Upon completion of the oral examination, the qualifying examination process is complete. If the student does not pass this examination, he or she may be separated from the Program. The Examination Committee may, however, permit the student to take the oral examination once more as well as indicate any additional steps the student needs to take in preparing for re-examination.

C. FORMAL NOTIFICATION OF STUDENT

After completion of the oral examination, the Examination Committee informs the student of the Committee's evaluation and its recommendation to the Program Chair. If the Examination Committee determines that all parts of the qualifying examination have been successfully completed,

the Program Chair will forward a Recommendation for Candidacy to the Graduate School for final approval. Formal notification of his/her advancement to candidacy is sent to the student by Rackham.

If the student fails to successfully complete the examination, the issue is resolved by the Examination Committee, the Advisory Committee, and the Program Chair.

Dissertation Committee and Proposal

Upon successful completion of the Qualifying Examinations, each candidate, in collaboration with his/her major professor, forms a Dissertation Committee, which will be charged with supervising the student's dissertation. The Dissertation Committee will include at least four members chosen by the student in consultation with his/her major advisor and approved by the Program Chair. These members will include: (1) the major and minor professors, (2) one other professor from the student's major area and (3) one outside or cognate member who is a regular member of the Graduate Faculty in a Rackham doctoral program and who does not hold any fraction of an appointment in the Architecture Program. At least two members must be faculty from the Doctoral Program in Architecture.

The Horace H. Rackham School of Graduate Studies Handbook is to be consulted to resolve any question regarding the composition of the dissertation committees.

Before embarking upon dissertation research, each student is required to submit a Dissertation Proposal for review and approval by his/her Dissertation Committee. The proposal should contain: (1) a clear, detailed description of the proposed dissertation topic and its underlying hypothesis or objective, (2) an account of the research methodology to be used in the dissertation and (3) a discussion of the contribution that the proposed dissertation will be expected to make both to the subject area in question and to the discipline of architecture. In addition, the proposal must demonstrate the student's mastery of the literature on the subject area of the dissertation. The candidate will give a public, oral presentation of the proposal at a time and place designated by the Dissertation Committee chair. A copy of the proposal must be submitted to the Program Office.

Dissertation and Final Examination

Each candidate is required to prepare a dissertation, which will give satisfactory evidence of his/her ability to conduct original, advanced research and to present the results of that research in effectively organized and well-written form. The dissertation is expected to contribute substantive new knowledge both to the subject area of the dissertation and to the discipline of architecture as well as to exhibit the student's mastery of the source material.

Once all members of the Dissertation Committee find the dissertation acceptable, the final oral examination or defense of the dissertation is scheduled and conducted by the Committee. The dissertation defense is open to the members of the faculty and students of the University. Upon successful completion of the procedure, the candidate is recommended by the Dissertation Committee to Rackham for conferral of the Ph.D. degree.

Completed dissertations must be submitted in a form suitable for publication in print or other media. In addition, the candidate is required to prepare a written abstract of the dissertation for publication in the Dissertation Abstracts. Rackham's requirements regarding the number of dissertation copies to be submitted by the candidate apply to the Doctoral Program in Architecture. At least two copies of the dissertation must be delivered to the Program Secretary. One of these copies will be archived in the Architecture Library located in the University of Michigan Media Union.

Language Requirement

FOREIGN LANGUAGE REQUIREMENT

There is no overall foreign language requirement for Ph.D. students. However, it is recognized that work in some areas of specialization (e.g., architectural history and theory) and on certain research/dissertation topics may require a reading knowledge of one or more foreign languages. Hence, at the time of acceptance, the Program Advisory Committee, in consultation with faculty members in the student's proposed major area of specialization, will determine whether his/her proposed program of study requires knowledge of one or more foreign languages and, if so, stipulate the language(s). Students are not permitted to take the qualifying examinations until the stipulated language requirement has been met.

ENGLISH LANGUAGE PROFICIENCY REQUIREMENT

Prior to taking the qualifying examinations, students are required to demonstrate writing skills in the English language of the sort required to produce a well-written doctoral dissertation. Typically, such writing skills will be demonstrated in the process of completing written assignments in the core courses. Students having difficulty doing so are encouraged to take writing courses at the English Language Institute and/or other University units. Subsequently, they are required to take a Program English Proficiency Examination prior to taking the qualifying examinations. In the Program English Proficiency Examination, a student is given two hours to write an essay of about 800 words without assistance. The essay is evaluated by a committee of two Program faculty members selected by the Program Advisory Committee.

Introduction

The Urban + Regional Planning Program offers two degrees: a professional Master of Urban Planning (M.U.P.) and a Ph.D. in Urban, Technological, + Environmental Planning (U.T.E.P.). The urban planning profession is concerned with the human and physical environments of cities and regions. A primary goal of the profession is to improve the quality of life in places—whether neighborhoods, cities, metropolitan regions, rural settlements, or larger regions—anywhere in the world. In pursuing this goal, graduate students acquire knowledge in these areas:

1. An understanding of cities and regions, including the interrelationship between their social, economic, and political systems; their spatial patterns; and their transportation networks.
2. An awareness of the techniques for analyzing cities and regions and for developing plans and programs for their future.
3. The formulation of future development policies, especially as the process involves identifying problems, establishing objectives, generating and evaluating alternative plans, and implementing them.

Master of Urban Planning Degree

Description and Objectives

The M.U.P. degree offers professional education in the planning field. Students may eventually apply their professional skills in various government agencies, private enterprises, or nonprofit organizations within a variety of subject areas. Graduate education at Michigan emphasizes the development of students' abilities to analyze, evaluate, integrate, and apply critical thinking in interdisciplinary planning processes. The course of study normally requires two years (four terms/full-time) for completion.

The M.U.P. degree, formally accredited through the American Planning Association and the Association of Collegiate Schools of Planning, takes a broad view of the scope of urban and regional planning. The core courses, about one-third of the credits, provide background for all areas of planning. Students choose to concentrate their studies in such areas as land use and environmental planning; housing, community and economic development; planning in developing countries; physical planning and urban design; and transportation planning. Because urban and regional planning is an interdisciplinary field, students are encouraged to choose related courses in numerous other departments.

Admission Requirements

To be eligible for admission for the M.U.P. degree, a student must have earned a bachelor's degree from an accredited college or university and is expected to have maintained a "B" average (3.0 on a 4.0 scale) or better in his or her undergraduate studies.

GRE scores (General Test) are recommended for all applicants. These are not required of international students who have not studied at an English-speaking institution. Schedule a test at: http://www.gre.org.

The TOEFL or MELAB test of English fluency is required of all international students except those who have received a degree from an institution where the language of instruction is English. Rackham School of Graduate Studies minimum expected scores are:

TOEFL	560 (paper-based); 220 (computer-based)
MELAB	80 or better

M.U.P. minimum expected scores are:

TOEFL	600 (paper-based); 250 (computer-based)

AEE—All international students will be required by the Rackham Graduate School to take the Academic English Evaluation (A.E.E.) test after arrival on campus before classes begin.

APPLICATION PROCEDURES

Students are encouraged to apply for fall term admission; M.U.P. students are also admitted in the winter term. The M.U.P. is oriented toward meeting the needs of full-time students, but part-time students are also encouraged to apply. The program seeks to accommodate the scheduling needs of these students.

Overall administration of the Graduate Program in Urban + Regional Planning is by the Horace H. Rackham School of Graduate Studies. All applicants must meet the general requirements of the Horace H. Rackham School of Graduate Studies. Please refer to the online publications for the most up-to-date information on admission and programs of study at the web address on the next page:

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E-mail: rackadmis@umich.edu
Web: http://www.rackham.umich.edu

All inquiries concerning admission, requests for program information or related matters should be addressed to:

Master of Urban Planning
Urban + Regional Planning Program
A. Alfred Taubman College of Architecture + Urban Planning
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2000 Bonisteel Boulevard
Ann Arbor, MI 48109-2069
Phone: (734) 763-3075
Fax: (734) 763-2322
E-mail: mup.masters@umich.edu
Web: http://www.tcaup.umich.edu/urp/

Students seeking admission for the M.U.P. are encouraged to apply online at: http://www.tcaup.umich.edu/admissions/admissions.html. Application packets can also be downloaded at: http://www.rackham.umich.edu/Admis/rackhamalt.html.

For those unable to apply online or download an application packet, applications may be requested at the above address or by emailing mup.masters@umich.edu. In addition to the application, each applicant is required to furnish a written statement of purpose that explains the applicant's decision to study urban and regional planning and future plans, including plans for graduate study with an indication of the field of intended specialization or concentration. Two letters of recommendation are required. Personal interviews are not necessary, but prospective students are invited to visit the College and to arrange for appointments with the program chair, faculty, and students.

See Frequently Asked U.R.P. Admission Questions at:
http://www.tcaup.umich.edu/admissions/admurpfaq.html.

Please clearly mark departmental application materials for Urban Planning or M.U.P. U. S. citizens should send original transcript(s) to the department only. International applicants should send a second set of original transcripts with their Rackham application to the Graduate School. Transcripts and letters of recommendation can be sent separately from the application or with the application (sealed in an envelope and signed on the flap).

APPLICATION DEADLINE

For financial aid consideration, applications should be submitted by **January 1.** Most applications are reviewed in February and early March. For fall term, completed applications will be accepted through **July 1** for international students and **August 1** for domestic students—or until the class is filled. For winter term, the application deadline is **October 15** for international students and **November 15** for domestic students.

Send test scores to the following codes:

	Institution	Department
TOEFL	1839	97
GRE	1839	4402

EVALUATION

The Urban + Regional Planning Program faculty carefully review each application on the basis of the candidate's grade point average and pattern of undergraduate academic performance, written statement of purpose and intended area of specialization, GRE and TOEFL scores, record of professional experience, career objectives, evidence of scholarly abilities, and potential for professional development. For those also applying to law schools, the LSAT can be used in place of the GRE For those also applying to business schools, the GMAT can be used in place of the GRE

The Concurrent Undergraduate/Graduate Study Program (CUGS)

Under certain circumstances, University of Michigan undergraduates may begin concurrent graduate studies in urban and regional planning.

The Concurrent Undergraduate/Graduate Study (CUGS) option offers advanced University of Michigan undergraduates the opportunity to combine the senior year with the first year of the master's program. A student graduates with the master's degree in one additional year after the combined year. Up to 15 credits of graduate level courses may be counted toward both the bachelor's and the master's degrees. Applications for CUGS are evaluated by looking at a student's breadth of program, commitment to the field, degree of motivation, academic ability, and GPA among other factors ordinarily used by graduate admissions committees. Applicants must have an undergraduate grade point average of at least 3.7

and must have met all requirements for the undergraduate degree except in the major and in independent study. The student must have completed at least six courses in the major and one independent study experience.

Students interested in CUGS should consult both their undergraduate advisors and the Urban + Regional Planning Program in their junior year. More detailed information on the application procedure can be obtained from the Rackham web site: http://www.rackham.umich.edu/Admis/pdfforms/cugsform.pdf or the LSA website: http://www.lsa.umich.edu/saa/publications/bulletin/chapter5/cugs.html.

Master of Urban Planning Degree Requirements

In order to obtain the Master of Urban Planning degree, a student must fulfill the following requirements:

1. The student must complete a minimum of 48 approved credit hours, of which:
   a) a minimum of 30 hours must be in graduate-level urban planning courses; and
   b) no more than 8 hours may be counted from among individual study-type courses (i.e., UP 680, 681, 682, 683, 690, 692, 694, 733, or 734).
2. The student must complete all "core" courses, unless waived by the faculty member who teaches a specific core course.
3. Each student must complete a course in economics and a course in statistics if these were not taken as an undergraduate.
4. Each student must complete a minimum of 4 hours of courses outside the program.
5. Each student completes a concentration that normally includes at least three courses.

Each student must earn an overall grade point average of "B" (5.0 on the 9.0 Rackham scale) or better while enrolled in the program.

Incoming students are assigned a faculty advisor with whom programs of study, course alternatives, concentration choices, and career objectives are explored. The counseling procedure within the program varies according to the individual student's needs and his or her evolution through the four terms of study.

All students develop a written study plan using the "Degree Requirements Checklist." This study plan should be reconsidered and revised by the student with the approval of the advisor each term. The checklist will be maintained in the student's file and serve as the official record of a student's progress toward degree requirements. Keeping the form up to date helps to ensure that degree requirements are met in a timely fashion.

Students complete a concentration declaration form during their second full semester in the program; the concentration advisor should approve a student's concentration plan on the Degree Requirements Checklist before the end of the third semester.

CORE COURSES

Generally, students take the majority of their courses during the first year from among the offerings of the Urban + Regional Planning Program. A series of "core" courses serve to give the student a broad base of knowledge of planning. These classes deal with urban planning analysis, theory, and history, professional practice and the social, economic, political, legal, and physical aspects of urban planning. If a student already possesses an acceptable level of competence in an area covered by a core course, an elective may be substituted. The determination as to whether or not a student possesses an acceptable level of competence will be made by the respective instructor in a core course in consultation with the student, his or her advisor, and the chair. All changes must be noted on the "Degree Requirements Checklist." International students are not required to complete UP 513 or UP 610 if they intend to work outside the United States.

The "core" courses required of Master of Urban Planning students are as follows:

Course Number/Title	Credit Hours
UP 503 Introduction to Statistics* (for those who have not taken statistics)	2
UP 504 Quantitative Planning Methods	3
UP 505 Fundamentals of Planning Practice	3
UP 510 Public Economics for Urban Planning** (for those who have not taken economics)	3
UP 513 Legal Aspects of the Planning Process	2 required of a 3-credit course
UP 540 Planning Theory	3
UP 610 Fiscal Planning and Management***	2 required of a 3-credit course
UP 634 Integrative Field Experience or UP 631 Land Use and Physical Planning Studio or UP 733/4 Planning Thesis/Professional Project	6

* Or a statistics course taken prior to program entry.

** Or a microeconomics course taken prior to program entry.

*** A prerequisite for this course is a basic course in microeconomics or UP 510.

CONCENTRATIONS

Students select a concentration in an area of planning. The purposes of concentrations are:

1. To enable students to develop their professional skills and knowledge in greater depth.
2. To guide students in taking advantage of the larger University offerings.
3. To improve students' marketability upon graduation.

A concentration consists of at least three courses selected from several recommended ones plus a small selection of closely related courses all focused on the same area; usually these include a "foundation" or conceptual frameworks course, a methods course, and choices of a range of other courses. The concentration advisor signs to verify that a student has fulfilled the concentration requirement on the "Degree Requirements Checklist"; this approval should occur by the end of the third semester in the program. Students who want to define an alternative concentration should do so in consultation with a faculty member and with the approval of the chair; the faculty member and the chair will verify that the alternative concentration is completed by signing the "Degree Requirements Checklist." Areas of concentration approved by the Urban + Regional Planning Program are the following.

Land Use and Environmental Planning

This concentration prepares planners to work toward the long-term environmental and social sustainability of land use by focusing on informing private and public decision-making processes related to land development. Students are taught to recognize the value-based and analytical conflicts that are common to land development and environmental planning debates and to employ planning and policy-making approaches designed to resolve those disputes. The challenge is to guide land development in ways that preserve and restore the ecological integrity of both urban and rural systems while improving the quality of life for residents, facilitating a vital economy, promoting the efficient use of land and community facilities, and respecting fiscal and legal requirements. Land use and environmental planners address a wide array of overlapping issues such as metropolitan sprawl and intergovernmental growth management; the relationships between land use and transportation systems; the relationships between economic development and environmental protection; open space and farmland preservation; brownfield redevelopment; trans-boundary environmental issues; and environmental justice. Land use and environmental planners find employment in local, regional, state, and federal government agencies, as private sector planning consultants, and in environmental nonprofit organizations.

Housing, Community and Economic Development

This concentration focuses on planning at the neighborhood level and the collaborative process of (re)building safe, healthy, economically strong communities. The goals of planning in housing and community and economic development are to increase social and economic capital and to improve the quality of life in metropolitan areas—particularly in low-income, minority, and other disadvantaged communities. In community economic development, planners focus on finding ways to intervene in growth and development processes to affect where increased economic activity happens, who gets jobs, and where incomes and tax base improve. Their goal is to achieve greater equity with growth. Housing, community and economic development planners work with local residents, neighborhood and community organizations, community development corporations, nonprofit housing developers, public agencies, consulting firms, and other private sector agents in efforts to secure decent, affordable housing; improve job opportunities; increase safety; and restore or maintain community stability.

Planning in Developing Countries

This concentration prepares planners to work in the diverse and rapidly changing contexts of developing countries and in American cities with large immigrant, multinational, multicultural populations. Development planners focus on how to incorporate an understanding of distinct cultural, socioeconomic, and political environments into plans and policies and how to achieve social justice and redistribution of development benefits. They work in project management, administration, and finance, as well as in urban policy. They work in contexts that demand an understanding of how the flows of capital, labor, technology, culture, and information—in an increasingly integrating world—impact the local space of cities and regions.

Physical Planning and Urban Design

This concentration focuses on spatial relationships in the built environment and encourages the conception of physical plans and the practice of urban design in ways that address urban challenges such as uncomfortable, unsafe built environments, community powerlessness, economic deprivation, and fragmented interventions. Physical planning and urban design focus on how spatial relationships and designs of spaces such as public areas and building complexes affect long-term community, economic, and international development processes. Physical planners and urban designers develop skills in reconceptualizing urban spaces, and they develop a self-consciousness about how design and spatial relationships are embedded in and influenced by society and in turn can change social, economic, and political conditions.

Transportation Planning

This concentration builds an interdisciplinary range of skills and perspectives to plan for urban transportation with an understanding of transportation planning's societal roles. Students learn applied technical and evaluation skills, historical uses and misuses of transportation planning techniques, and the rich interdependencies between transportation planning and other areas of urban and regional planning. Major themes in transportation studies include the interaction of transportation and land use planning; the relationships between transportation systems and metropolitan development patterns; the associations between transportation access, poverty, and economic development; alternative approaches to public transit policy; the role of technology in improvement of transportation systems; policies that aim to reduce the environmental costs of transportation; and the intergovernmental and interjurisdictional dimensions of transportation problems.

Sample Schedule: Master of Urban Planning Degree

The following schedule is typical for a full-time student enrolled for the Master of Urban Planning degree.

M.U.P. SCHEDULE: YEAR 1

Fall Term	Credit Hours
UP 503* Introduction to Statistics	2
UP 510** Public Economics for Urban Planning	3
UP 513 Legal Aspects of the Planning Process	2–3
UP 540 Planning Theory or elective	3
Elective or concentration course	3

Winter Term	Credit Hours
UP 504 Quantitative Planning Methods	3
UP 505 Fundamentals of Planning Practice	3
UP 540 Planning Theory or elective	3
Elective or concentration course	3

Spring Half-Term

Many students take one or two electives

M.U.P. SCHEDULE: YEAR 2

Fall Term	Credit Hours
UP 631 Land Use and Physical Planning Studio	6
or UP 733 Planning Thesis/Professional Project	3
Electives or concentration courses	6–9

Winter Term	Credit Hours
UP 610 Fiscal Planning and Management	2–3
UP 631 Land Use and Physical Planning Studio	6
or UP 634 Integrative Field Experience	6
or UP 734 Planning Thesis/Professional Project	3 or 6
Electives or concentration courses	6

* For students who have not taken statistics.

** For students who have not taken economics.

Students play an integral role in the management of M.U.P. degree activities, and their participation is solicited in program governance. All students are encouraged to participate in the Urban Planning Student Association (UPSA) which meets regularly during the year. This organization allows students to discuss problems and issues, formulate policies, and provide direct input to the faculty. In addition to its formal organizational functions, UPSA provides an opportunity for informal associations among students, faculty, staff, and alumni.

Educational Resources

The geographic location of the University provides a wide variety of academic and practical opportunities for advanced inquiry by the planning student. First, the vast research and teaching facilities of the greater University are available to students enrolled for the M.U.P. degree. Libraries, laboratories, research institutions, lecture series, and computer centers serve as educational resources. Second, the City of Ann Arbor, with a population of over 120,000 people, is a lively and urbane living environment. Its cultural and social offerings are varied, and its citizens are politically informed and involved in the continued improvement of their community. Third, the College is proximate to Detroit and its suburban and rural surroundings. These contrasting environments provide a comparative base for investigation by the student and increases his or her understanding of the breadth of urban and regional planning concerns.

Internships and Career Services

Although an urban planning-related internship is not required, the program encourages students to find work related to the profession and provides assistance to students in finding internships. The program funds numerous internships through grants and alumni gifts. The Michigan Neighborhood AmeriCorps Program provides positions for several urban planning students each year. The U. S. Department of Housing and Urban Development Community Development Work Study Program often supports internships for up to three low-income and minority students. The College's manager of community partnership programs identifies many internships for students.

The program provides assistance to students in finding professional planning positions after graduation. A part-time staff person maintains job and internship listings, arranges resume reviews, facilitates networking with alumni, provides information on good job searching techniques, maintains job web site connections, and connects students to the services of the UM Career Planning and Placement office.

Computer Hardware and Software Recommendations

A personal computer is an essential tool for learning and professional work in the programs offered at Taubman College. Our students master computing technologies and use them throughout the curriculum. The College provides desktop computing clusters in various locations throughout the building and also hosts a campus computing site.

In order to assure effective access to computing resources, many students have personal computers. Current hardware and software recommendations for those students who decide to purchase a computer are available on the TCAUP Help Desk website at http://www.tcaup.umich.edu/helpdesk/help.html.

Accreditation

The M.U.P. degree is fully accredited by the Planning Accreditation Board. A copy of the most recent accreditation report is available in the Urban + Regional Planning Program office.

Combined Degrees

Because urban and regional planning is an interdisciplinary field that relates to many other professions and disciplines, the Urban + Regional Planning Program offers students opportunities to pursue combined degrees. Dual degree programs enable students to earn two degrees in considerably less time than if each degree were earned separately. Three formal, dual degree programs enable students to study for a dual Master of Business Administration/Master of Urban Planning degree, a dual Doctor of Jurisprudence/Master of Urban Planning, or a dual Master of Architecture/ Master of Urban Planning degree. Students can pursue student-initiated dual degrees with a wide range of other programs. Certificate programs allow students to gain depth in specific topics that relate to many disciplines and professions. The Concurrent Undergraduate/Graduate Study Program allows advanced undergraduates to begin the master's degree before they have completed the undergraduate degree.

For either formally approved dual degrees or student-initiated dual degrees, students apply for admission to each program. After admission to a formal dual degree, students meet the specified requirements of the dual degree.

After admission to both programs for a student-initiated dual degree, the student meets the requirements of both degrees. The student may double-count one-sixth of the sum of the credits required for each of the two degrees. A student may apply for a student-initiated dual degree at any time during the course of study.

If the two units in a combined degree program charge different tuition fees, the student may be liable for the higher tuition in a semester when he or she registers for any credits in the unit with the higher tuition.

Formal dual degree programs include:

- Architecture and Urban + Regional Planning
- Business Administration and Urban + Regional Planning
- Law and Urban + Regional Planning

Student-initiated dual degrees allow students to combine a second field of study with the Master of Urban Planning. The most established degrees combine Urban + Regional Planning with:

- Social Work
- Resource Policy and Behavior (School of Natural Resources and Environment)
- Landscape Architecture
- Public Policy
- Public Health (Health Behavior and Health Education)
- Urban Design

Students may also initiate other dual degrees to meet their interests in individual specializations.

Certificate programs allow students to gain depth in specific areas as they work towards the Master of Urban Planning or the Ph.D. in Urban, Technological, and Environmental Planning. The certificates that have most interested students in the Urban + Regional Planning Program are:

- Certificate in Complex Systems
- Certificate in Spatial Analysis
- Certificate in Real Estate Development

Other certificate programs of potential interest to students in Urban and Regional Planning include:

- Industrial Ecology
- Science, Technology, and Society
- Women's Studies

Formally Structured Dual Degrees

Dual Degree in Urban + Regional Planning/Architecture

The M.U.P./M.Arch. dual degree is structured to develop highly qualified professionals capable of combining architecture and urban planning to work effectively in the professional fields of architecture, urban development, and community and social planning. It equips students with a broad range of skills and particular expertise related to the design and planning of the built environment. Graduates with a dual degree in Architecture and Urban + Regional Planning are able to work both in the private sector and with a wide range of public agencies and non-profit organizations. The program combines the two-year/60 credit hour M.Arch. degree with the two-year/48 credit hour M.U.P. degree, resulting in a three-year/84 credit hour program.

M.U.P./M.ARCH. DEGREE REQUIREMENTS

Students must register in the A. Alfred Taubman College of Architecture + Urban Planning and the Horace H. Rackham School of Graduate Studies. Because of the way the Architecture Program calculates grade point averages, a student must register for double-counted courses in both units in the semesters when these courses are taken. A student may register for all courses in both units so that course elections are identical in both units. The dual M.Arch./M.U.P. degree requires the completion of a minimum of 84 credit hours. Specifically, a student must complete:

1. 36 credit hours of 500/600 level architecture courses, including four courses, 24 hours, of architectural design (Arch 552, Arch 562, Arch 672, Arch 662).
2. Five courses (15 credit hours) of specific required architecture courses (Arch 516 Architectural Representation, Arch 572 Architectural Theory and Criticism, Arch 583 Professional Practice, Arch 589 Site Planning, and Arch 660 Thesis Development Seminar).
3. One course (3 credit hours) in each of three subject areas-Architectural History, Environmental Technology, and Structures.
4. 30 credit hours of graduate level urban planning courses, including all "core" course work unless waived by the instructor.

Any additional cognate/elective courses needed to fulfill the 84 credit hour requirement.

In addition, students who lack college-level economics or statistics must complete acceptable courses in these two areas. These may be counted toward the 30 credit hours of graduate-level urban planning courses, provided they are taken for graduate credit in urban planning. A cumulative GPA of "B" must be earned in each unit and 24 credit hours may be double-counted toward the two degrees.

Each unit maintains a separate transcript, and either degree may be awarded independently, provided the requirements for the single degree have been met. Because enrollment in the dual program involves two separate units, it becomes the responsibility of the student to follow the academic policies and procedures of each.

SAMPLE SCHEDULE: M.U.P./M.ARCH. DEGREE

FIRST YEAR GRADUATE STUDY

Fall Term	Credit Hours
Arch 552 Architectural Design V	6
Arch 516 Architectural Representation	3
UP 503 Introduction to Statistics	2
UP 513 Legal Aspects of the Planning Process	2–3
Total	13–14

Winter Term	Credit Hours
Arch 562 Architectural Design VI	6
UP 572 Architectural Theory and Criticism	3
Architectural History, Environmental Technology, or Structures Requirement	3
UP 505 Fundamentals of Planning Practice	3
Total	15

SECOND YEAR GRADUATE STUDY

Fall Term	Credit Hours
Arch 672 Architectural Design VII	6
Arch 519 (UP 519) Principles and Practice of Urban Design	3
UP 540 Planning Theory	3
Arch 660 Thesis Development Seminar	3
Total	15

Winter Term	Credit Hours
Arch 662 Thesis Studio	6
Arch 583 Professional Practice	3
UP 504 Quantitative Planning Methods	3
Architectural History, Environmental Technology, or Structures Requirement (2 courses at 3 credits each)	6
Total	18

THIRD YEAR GRADUATE STUDY

Fall Term	Credit Hours
Arch 443 (UP 443) History of Urban Form	3
Graduate level courses in architecture, urban planning or elective field	12
Total	15

Winter Term	Credit Hours
UP 631 (NRE 631) Land Use and Physical Planning Studio	6
UP 610 Fiscal Planning and Management	2–3
Graduate level courses in architecture, urban planning, or elective field	9
Total	17–18

Dual Degree in Urban + Regional Planning/Business Administration

The Urban + Regional Planning Program and the Business School offer a dual degree program that enables qualified students to pursue concurrent work in business administration and urban and regional planning, leading to the Master of Business Administration (M.B.A.) and Master of Urban Planning (M.U.P.) degrees. Students can complete all requirements for both degrees within six semesters of full-time study.

The dual degree program is for students who want to go into urban real estate development, management of urban operations, or urban economic revitalization in the United States and elsewhere in the world.

The dual degree program is designed to educate developers interested in making urban areas better places to live, managers fascinated with the prospect of making city agencies perform, and leaders engaged in bringing more economic activity to transform areas that need jobs and tax base the most. In the Business School students normally choose a concentration in real estate finance, corporate strategy, entrepreneurship, or organizational behavior and human resources. In the Urban + Regional Planning Program, students in the dual degree program often concentrate in housing and community development, transportation, economic development, or international development.

M.U.P./M.B.A. DEGREE REQUIREMENTS

The dual degree is an 84-credit-hour program that can be completed in three years. This combines the two-year, 48-credit-hour Master of Urban Planning with the two-year, 60-credit-hour Master of Business Administration. Each student must take at least 45 credits of Business School courses and at least 30 credits of Urban + Regional Planning courses. Students may double-count up to 15 credits between the two parts of the joint degree. Students must meet the requirements of both programs. Students normally register one year entirely in one school and a second year entirely in the other school. In the third, final year, students combine courses from both schools. Both schools must agree to admission of a student to the dual degree.

SAMPLE SCHEDULE: M.U.P./M.B.A. DEGREE

This schedule is based on requirements in effect in May 2003. If a student decides to begin in the Urban + Regional Planning Program, years I and 2 would be reversed.

FIRST YEAR: BUSINESS SCHOOL CORE CURRICULUM

Fall Term

Principles of Financial Accounting (I4 weeks)

Business Economics (I4 weeks)

NOTE: Meets the M.U.P. requirement for economics.

Corporate Strategy I (7 weeks)

International Business (7 weeks)

Marketing (I4 weeks)

Financial Management (I4 weeks)

NOTE: Meets part of the M.U.P. requirement for UP 6I0 Fiscal Planning and Management; the remainder can be met through a directed study course arranged with the instructor or through specific other public management courses. A dual degree student meets with the instructor for UP6I0 to discuss his or her background and to plan the fulfillment of the requirement. The directed study credits are included in the total credits required for the degree.

Winter Term

Management Accounting (first 7 weeks)

Organizational Behavior (first 7 weeks)

Operations Management (first 7 weeks)

Applied Business Statistics (first 7 weeks)

NOTE: Meets the M.U.P. requirement for statistics

Elective in Business or U.R.P.

Multidisciplinary Action Project (second 7 weeks)—preferably on a project related to interests that bridge Business and Urban + Regional Planning. Students work on this project full time and take no other courses.

SECOND YEAR: URBAN + REGIONAL PLANNING PROGRAM

Fall Term

Planning Theory

Legal Aspects of the Planning Process

2 electives in real estate finance, economic development, community development and housing, transportation, international development, and/or public management

Winter Term
Quantitative Planning Methods
Fundamentals of Planning Practice

NOTE: This requirement may also be met by a combination of writing and presentation experiences at the Business School. The instructor for the required urban planning course will judge whether a student has enough experience to fulfill this requirement. The student should meet with the instructor to determine what materials are needed to demonstrate mastery of the course content.

2 electives

THIRD YEAR: BOTH SCHOOLS

Fall Term
Business law or ethics
3–4 electives

Winter Term
Capstone requirement for U.R.P.
2 electives

Students are encouraged to take electives that address their specific interests in combining the two degrees. Here are some examples:

1. A student interested in urban real estate development may elect a set of urban real estate development or finance courses. These include:
   - An introductory course in real estate
   - A course on the planner as developer
   - Urban and regional development
   - Real estate finance
   - Real estate law
   - A course focused on a real estate project, such as the capstone course in urban planning, may meet the requirement in U.R.P. for an integrative, practice-oriented experience.

   The student should refer to the courses offered for the Certificate in Real Estate Development.

2. A student interested in management of urban operations may elect a series of courses in a topic of interest in urban management. These might include:
   - The series of U.R.P. concentration courses in transportation (for interest in public transit agencies), the series of U.R.P. concentration courses in housing, community, and economic development (for interest in public housing), and so forth.
   - Courses in public and nonprofit management in the Business School.

3. A student interested in urban revitalization through economic development may elect a series of courses that bring the public and private perspectives on economic development together. These could include:
   - The series of courses in economic development in U.R.P. (see the concentration in housing, community, and economic development planning and the Certificate in Real Estate Development).
   - Urban entrepreneurship in the Business School
   - Business plans and entrepreneurship in the Business School.

Dual Degree in Urban + Regional Planning/Law

The Urban + Regional Planning Program and the Law School offer a dual degree program that enables qualified students to pursue concurrent work in law and urban and regional planning, leading to the Doctor of Jurisprudence (J.D.) and Master of Urban Planning (M.U.P.) degrees. Students can complete all requirements for both degrees within eight semesters of full-time study.

The dual degree program is for students who want to focus on concerns that intersect both law and urban and regional planning. These areas of common interest include community development, real estate development, land use planning and regulation, environmental planning and regulation, and legislative work related to housing, land use, economic development, taxation, transportation, immigration, and other topics.

M.U.P./J.D. DEGREE REQUIREMENTS

The dual degree is a 131-credit-hour program (83 Law credits and 48 Urban + Regional Planning credits) for students entering the Law School before summer 2001, and a 128-credit-hour program (80 Law credits and 48 Urban + Regional Planning credits) for students entering the Law School in summer 2001 or after. Nine credits may be counted from Urban + Regional Planning toward satisfaction of the requirements for the J.D.; fifteen Law credits may be counted toward satisfaction of the requirements for the Master of Urban Planning. Thus, students enrolled in the program may reduce by 24 the number of credits they would need if they were pursuing the two programs separately, allowing the program to be completed in four years. This combines the two-year, 48-credit-hour Master of Urban Planning with the three-year Doctor of Jurisprudence. Each student must meet the requirements of each program by taking course work as follows:

1. The required first-year law courses and additional upper-class courses, as required by the Law School's academic regulations. More specifically, students entering the Law School prior to summer 2001 must earn a minimum of 83 credits toward the J.D., 52 or 53 of which must come from upper-class courses. Students entering the Law School in Summer 2001 or after must earn a minimum of 80 credits toward the J.D.

2. At least 30 credit hours in Urban + Regional Planning courses, including the core courses; with double-counted courses, the total credits must equal at least 48.

The first two years of study will be divided equally between the Law School and Urban + Regional Planning; students are normally expected to spend one year, full-time in each school. These two years are followed by two years of mixed enrollment. Tuition is assessed at either the Law School rate or the A. Alfred Taubman College of Architecture + Urban Planning rate, whichever is higher, when courses toward both degrees are taken in a single term.

Students are required to satisfy the degree requirements of each school and work closely with advisors in each school to determine precise graduation requirements for each degree. Students should not expect any law courses beyond first year courses to be offered in the summer term. Students will not receive credit toward the law degree for non-law course work taken prior to matriculation at the Law School. The Urban + Regional Planning Program will consider for dual degree enrollment a student who has completed a year or more of Law School courses at the UM.

In the Urban + Regional Planning Program each dual degree student receives a requirements checklist laying out the degree requirements. Because the program is small, students' advisors are knowledgeable about the dual degree curriculum and provide guidance. In the Law School, students should consult with the assistant dean regarding fulfillment of requirements for the J.D.

SAMPLE COURSE SEQUENCE (BASED ON REQUIREMENTS IN EFFECT IN FALL 2001):

Note: If a student decides to begin in the Urban + Regional Planning Program, years I and 2 would be reversed.

FIRST YEAR: LAW SCHOOL

Civil Procedure, 4 hours
Contracts I and II, 3 to 6 hours
Criminal Law, 4 hours
Introduction to Constitutional Law, 4 hours
Legal Practice I and II, 4 hours (2 for each term)
Property I and II, 3 to 6 hours
Torts, 4 hours
First Year Elective in ways of approaching legal problems that go beyond the common law method, 2–3 hours

SECOND YEAR: URBAN + REGIONAL PLANNING PROGRAM

Fall

Planning Theory, 3 credit hours

Introduction to Statistics, 2 credit hours
(for students who have not taken statistics previously)

Public Economics for Urban Planning, 3 credit hours
(for students who have not previously taken economics)

Electives, if statistics, economics, or law courses are not taken.

(The requirement of Legal Aspects of the Planning Process, 2–3 credit hours are waived for students in the dual M.U.P./J.D. degree)

Winter

Quantitative Planning Methods, 3 credit hours

Fundamentals of Planning Practice, 3 credit hours

2 electives

THIRD AND FOURTH YEARS: BOTH SCHOOLS

Capstone requirement for U.R.P. on a project related to the student's focus, 6 hours. Two semesters of credit in the Urban Communities Law Clinic will satisfy the U.R.P. capstone requirement.

Fiscal Planning and Management, 2–3 credit hours, in U.R.P.

At least one Law seminar

Professional responsibility requirement in Law

Land Use Planning and Control and/or Local Government Law should be taken in the Law School if a student has not taken Legal Aspects of the Planning Process in U.R.P.

Electives to meet the credit requirements in each program and to develop a concentration in U.R.P.

Student-Initiated Dual Degrees

Dual Degree in Urban + Regional Planning/Social Work

The focus of the M.U.P./M.S.W. dual degree is community planning. The dual degree prepares students to work for social change at the community level. The program incorporates issues related to class, race, ethnicity, gender, age, and cultural differences. It develops skills in organizing groups for social action, planning programs at the community level, developing community-based services, and involving people in the planning process.

Students have many opportunities to participate in community-based planning projects associated with Taubman College's Detroit Community Partnership Center and in research projects related to community development.

M.U.P./M.S.W. DEGREE REQUIREMENTS

The M.U.P./M.S.W. is a 90-credit-hour program designed for completion in 2-1/2 to 3 years. Students take 60 credit hours in Social Work, 48 credit hours in Urban + Regional Planning; 18 of which may double-count toward both degrees. Students meet the specific requirements of each degree.

In Social Work, students usually major in community organization and also concentrate in a substantive policy or service field. Human behavior and social environment courses emphasize community structure, organizational processes, and related areas. In Urban + Regional Planning, students usually choose to concentrate in housing, community, and economic development or international development. Students often take courses in non-profit and public management and take advantage of seminars and workshops offered through the University's Non-Profit and Public Management Center.

COORDINATED REQUIREMENTS

Field experience is an important part of the program, and the Social Work field placement is usually arranged in a setting that gives the student exposure to community development from the perspective of both social work and urban and regional planning. Dual degree students can complete the Urban + Regional Planning Program's capstone requirement through a professional project that builds on experience in a field placement or can participate in a community-based group planning project in partnership with a community-based organization in Detroit. Students may take either SW 661 or UP 610 to meet the budgeting and financial management requirement in Urban + Regional Planning.

Dual Degree in Urban + Regional Planning/Resource Policy and Behavior

This student-initiated dual degree between the Urban + Regional Planning Program and the School of Natural Resources and Environment (SNRE) is for students especially interested in environmental planning in urban and urbanizing areas, regional planning, urban environmental justice, or community-based environmental planning.

The dual degree combines the study of natural resource policy and management with planning for the built environment in urban areas. Through coursework in the School of Natural Resources and Environment and the Urban + Regional Planning Program, students learn about urban and environmental challenges from a range of perspectives. Students have the opportunity to develop the tools, skills, and knowledge to integrate natural resource policy and management into the local and regional planning processes. Some of the topics students could study include management of metropolitan growth, brownfield redevelopment, industrial ecology, environmental justice, regional land use and resource management, community organizing, and advocacy with respect to urban environmental issues.

M.U.P./M.S. DEGREE REQUIREMENTS

The M.U.P./M.S. is a 70-credit-hour program designed for completion within 2-1/2 to 3 years. Students take 36 credits in SNRE and 48 credits in U.R.P. with 14 of these credits counted in both programs. In Urban + Regional Planning, students usually choose a concentration in land use and environmental planning, physical planning and urban design, or housing, community and economic development. In SNRE, students in Resource Policy and Behavior choose among resource policy; resource planning; and advocacy, behavior, and education tracks. The Resource Policy and Behavior concentration emphasizes understanding the policy outcomes, institutions, and human societies that affect natural resources. A required core includes courses in resource policy and administration, land use, or economics; analytics; and biology or ecology. Students meet the specific requirements of each degree.

Students complete a 6-credit "capstone" requirement of a thesis or a team project that integrates what they have learned and addresses an environmental planning issue, usually for a client or community partner.

COORDINATED REQUIREMENTS

A statistics course in SNRE or UP 503 meets the statistics requirement in both programs. UP 504 meets the requirement for an analytic methods course in SNRE An SNRE economics course meets the U.R.P. economics requirement. One capstone project meets the requirements of both programs, subject to approval of appropriate faculty or committees.

Dual Degree in Urban + Regional Planning/Landscape Architecture

Students especially interested in physical planning at any scale—from site design to metropolitan planning—may decide to get both a Master of Urban Planning and a Master of Landscape Architecture. The dual degree equips students to plan and design the built environment in a comprehensive manner. Students develop design skills at the same time that they understand the social, economic, and political context of the built environment. Having both degrees enables graduates to design at both the large and small scales and to understand the relationship between the two. Graduates can address questions such as: How do small-scale design decisions relate to the larger social context? How can the regional or local jurisdiction's political environment affect a design? Graduates address issues that draw on the knowledge in both degrees—livable communities, smart growth, conservation design, watershed-scale planning.

M.L.A./M.U.P. DEGREE REQUIREMENTS

The M.L.A./M.U.P. degree is a 70-credit-hour program that can be completed in 3-1/2 to 4 years. The M.U.P. requires 48 credits (with 30 of these in urban planning courses); the M.L.A. requires 36 credits. Fourteen of these can be double counted. M.L.A. students take approximately 29 credits of prerequisites early in their program; these do not count toward the 36 credit total. A student in the dual degree must meet the requirements of both programs.

In Urban + Regional Planning, students often choose a concentration in physical planning and urban design, land use and environmental planning, or housing, community and economic development. In Landscape Architecture, students proceed through a structured sequence of studios and complementary support courses, while taking advantage of elective courses in the School of Natural Resources and Environment.

COORDINATED REQUIREMENTS

Students may complete a 6-credit master's project in either program to meet the project requirement in both. The required UP 504 Quantitative Methods for M.U.P. can fulfill the analytics course requirement for the M.L.A. An advanced M.L.A. student may be excused from taking UP 505 Fundamentals of Planning Practice; the faculty member will review the student's background to make this decision. Under some circumstances, UP 505 may fulfill the M.L.A. requirement for Arch 583 Professional Practice; students should consult advisors.

SAMPLE SCHEDULE: M.L.A./M.U.P. DEGREE

A student may begin the dual degree program with emphasis in either department. The first two years of the landscape architecture curriculum include many required courses and therefore allow little room for courses

in urban and regional planning. The following is an example of a course of study where a student begins in Landscape Architecture and starts course work in Urban + Regional Planning in the third year. In this example, the student elects to do the master's project in the Urban + Regional Planning Program, and the student has undergraduate background in economics and statistics.

YEAR 1, PRIMARILY IN LANDSCAPE ARCHITECTURE
Fall Term
NRE 587 Watershed Studio
NRE 430 Soil Properties
NRE 437 Woody Plants
NRE 586 Visualizing the Environment

Winter Term
NRE 590 Landscape Ecology Studio
NRE 403 History of Environment and Design
NRE 588 Site Engineering
NRE 540 GIS and Natural Resource Applications

YEAR 2, PRIMARILY IN LANDSCAPE ARCHITECTURE
Fall Term
NRE 690 Landscape Planning/GIS Studio
NRE 691 Ornamental/Planting Design
NRE 591 Materials and Methods
NRE/UP 579 Land Use Planning

Winter Term
NRE 688 Site Planning Studio
UP 504 Quantitative Planning Methods
NOTE: Prerequisite is an undergraduate course in statistics or UP 503 Introduction to Statistics, offered fall semester.
UP 505 Fundamentals of Planning Practice
Elective

YEAR 3, PRIMARILY IN URBAN + REGIONAL PLANNING, WITH STUDIOS IN LANDSCAPE ARCHITECTURE
Fall Term
NRE Modular studios, each 7 weeks
UP 540 Planning Theory
UP 513 Legal Aspects of the Planning Process
UP 631, UP 733 Masters Project

Winter Term
NRE Modular studios, each 7 weeks
UP 610 Fiscal Planning and Management
NOTE: Prerequisite is an undergraduate course in economics or UP 510 Public Economics for Urban Planning, offered fall semester.
Arch 583 Professional Practice
UP 634, UP 631, UP 734 Masters Project

YEAR 4
Complete remaining courses to fulfill credit and distribution requirements and develop a concentration.

Dual Degree in Urban + Regional Planning/Public Policy

The Master of Public Policy and Master of Urban Planning is especially suited for students interested in urban policy and in state and local policy in subjects such as economic development, transportation, regional development, and housing. The dual degree also trains students interested in community-based approaches to social change; in implementation of plans and policy at the local level; and in leadership of nonprofit organizations working to improve communities.

Students most likely to enroll in this degree want to combine strong analytic approaches to designing policy solutions, public and nonprofit management skills, and hands-on interdisciplinary approaches to improving the quality of life in cities and neighborhoods with a strong foundation in the substance of urban and regional issues.

M.U.P./M.P.P. DEGREE REQUIREMENTS
The M.U.P./M.P.P. degree is an 80-credit-hour program that can be completed within 3 years. The M.P.P. and the M.U.P. each require 48 credits; 16 credits may be double-counted, according to the Rackham guidelines, but students should check with the Ford School before assuming that a given course may be double-counted toward the M.P.P. Students meet the specific requirements of both degrees.

In Urban + Regional Planning, students usually choose a concentration in transportation or housing, community and economic development. In Public Policy, a student's concentration is the area of the dual degree, Urban + Regional Planning. Students take required courses in statistics and math, economics, the political environment for policy, cost-benefit analysis, public management, ethics, and a policy exercise. Students normally enroll nearly full time in one school one year and nearly full time in the second school the second year. They usually combine courses from both schools in the third year.

COORDINATED REQUIREMENTS

The statistics, other methods courses, and economics in Public Policy meet the requirements for statistics and economics in Urban + Regional Planning and at least part of the requirement for quantitative methods for urban planning. Public Policy students are often waived out of the municipal budgeting course in Urban + Regional Planning if they have taken a series of courses in Public Policy that cover similar material.
A student who feels he or she has fulfilled a requirement in Urban + Regional Planning through other courses should consult with the faculty member for that course.

Dual Degree in Urban + Regional Planning/Health Behavior/Health Education in Public Health

The student-initiated dual degree in Urban + Regional Planning and in Health Behavior and Health Education in Public Health (M.U.P./M.P.H.) is for students who want to work to create healthier environments in urban areas anywhere in the world. Students may wish to go into work to promote health through the improvement of the places where people live in a wide range of ways. For example, they may be interested in the provision of safer shelter, in community-based initiatives for water supply and waste disposal systems, in reducing sprawl development and the traffic congestion that accompanies it, in planning for parks and recreation that offer more fitness opportunities, in implementing truck routing around low-income neighborhoods to reduce air pollution and increase pedestrian safety—to name just a few of the ways that public health and urban planning intersect. They may want to work for a nonprofit in a big city, for a planning department or a public health department, for a regional rural services agency, for an NGO or a community-based initiative in a developing country.

M.U.P./M.P.H. DEGREE REQUIREMENTS

The M.U.P./M.P.H. is a 90-credit-hour program for students without relevant health education experience or advanced degrees. Students take 60 credits for the M.P.H. and 48 credits for the M.U.P. Eighteen of these credits may be counted in both programs. Students with substantial prior relevant postgraduate work or with substantial relevant experience may complete the dual degree with 80 credit hours, with 48 credits for the M.P.H., 48 credits for the M.U.P, and 16 credits counted in both programs. Students take at least 30 credits in the Urban + Regional Planning Program, at least 30 in Health Behavior and Health Education, and at least 10 credits in specific other courses in Public Health outside HBHE. Students normally complete the dual degree in three years of full-time study.

COORDINATED REQUIREMENTS

Courses taken to meet the requirement in behavioral research and evaluation methods in Public Health may meet part or all of the requirement for UP 504 Quantitative Planning Methods. UP 504 meets the requirement of Biostatistics 503 for students doing the dual degree.

Field experience is required for the M.P.H. and strongly encouraged for the M.U.P.

Dual Degree in Urban + Regional Planning/Urban Design

Students who are especially interested in urban design and in physical aspects of the city and of urban development may decide to enroll in both the Master of Urban Planning and the Master of Urban Design. Students who want to enter a design-based planning practice may benefit from the additional design education that the M.U.D. provides.

Although the Master of Urban Design is primarily for students who already have a Master of Architecture, Master of Landscape Architecture, or Master of Urban Planning degree, students enrolled in the Urban + Regional Planning Program may apply to work toward the M.U.D. beginning in their second year of study. A student entering Urban and Regional Planning with very strong design background or with a Bachelor of Architecture may apply to begin the dual degree in the first year of study toward M.U.P.

An Urban + Regional Planning student without a B.Arch. degree who intends to apply for study toward the M.U.D. should take UP 518 and UP 519 in his or her first year in the M.U.P. and should enroll in the Arch 402 studio in the summer before the beginning of the second year of study.

M.U.P./M.U.D. DEGREE REQUIREMENTS

The M.U.P./M.U.D. is a 73-credit-hour program that can be completed in 2-1/2 to 3 years. Students take 48 credits in Urban + Regional Planning and 39 credits in Urban Design with 14 of these credits counted in both programs. In Urban + Regional Planning students usually choose a concentration in physical planning and urban design or in land use and environmental planning. Students meet the specific requirements of both degrees. Because the M.U.D. is a second professional degree, dual degree candidates for M.U.D./M.U.P. must plan to receive degrees concurrently.

COORDINATED REQUIREMENTS

UP 631 Land Use and Physical Planning Studio meets the capstone requirement for the M.U.P. and can fulfill one studio course requirement for the M.U.D. if so determined by the M.U.D. program director and faculty.

Other Student-Initiated Dual Degrees

Urban + Regional Planning students can initiate a combination of master's degrees to cover individual specializations. Where course material is similar in required courses, students are often waived out of the requirement in one unit with permission of the instructor. Recently, students have enrolled in dual degrees in a number of fields:

M.U.P./M.P.H. in areas such as Epidemiology or Health Management and Policy with interests in community-based approaches to public health in urban areas and the effects of a healthy environment in improving the quality of life in places—whether in American cities or rural areas or in developing countries.

M.U.P./M.F.A. with interests in the use of art in urban design and physical planning to improve the quality of urban life.

M.U.P./M.S. IN RESOURCE ECOLOGY AND MANAGEMENT with interests in the management, restoration, and re-creation of ecosystems in urban areas.

M.U.P./M.S. IN INFORMATION with interests in community-based information systems and the use of information systems to improve urban planning, urban public management, and the quality of urban life.

Certificate Programs

Through the Rackham School of Graduate Studies, certificate programs are available for graduate students interested in gaining additional strength in a field that cuts across many disciplines. Students in Urban + Regional Planning are most often interested in certificate programs in the areas of Real Estate Development, Complex Systems, and Spatial Analysis. Students may count some of the credits for the M.U.P. degree toward a certificate, up to one-half the credits for the certificate. See the Rackham Handbook online at http://www.rackham.umich.edu/.

CERTIFICATE IN REAL ESTATE DEVELOPMENT

The graduate Certificate in Real Estate Development offers students the opportunity to gain knowledge about the making of good urban settlements, about shaping the built environment in ways that enhance the quality of life and conserve the natural environment. The certificate is a 17-credit interdisciplinary program with requirements in an overview of real estate, real estate finance, real estate and land use law, real estate in the urban development context, design and implementation, and an integrative seminar. For more information, see http://www.tcaup.umich.edu/.

CERTIFICATE IN SPATIAL ANALYSIS

The graduate Certificate in Spatial Analysis is an interdisciplinary program where students acquire a set of core skills and knowledge in spatial analysis and its relevant sub-fields. Coursework offered through the program leads to a graduate Certificate in Spatial Analysis with a focus on applied remote sensing, geographic information systems, or spatial statistics. Students select one of these three areas as a primary focus but select remaining course work to increase depth and breadth or to add a secondary focus. The Certificate requires 15 credit hours of course work within the program. For further information contact Daniel G. Brown at danbrown@umich.edu, or visit online at http://gis.umich.edu/.

CERTIFICATE IN COMPLEX SYSTEMS

The graduate Certificate in Complex Systems introduces students to the ideas and methods used in the study of complex, nonlinear, and adaptive systems. The specific aim of this curriculum is to allow students from different fields to integrate the rich paradigms and useful analytic and modeling techniques of complex systems into their own research, including agent based modeling. The curriculum is designed to be accessible to students in a wide range of disciplines including the social sciences. To enroll or for further information contact the Center for the Study of Complex Systems at cscs@umich.edu or visit online at http://www.cscs.umich.edu/.

Ph.D. Degree in Urban, Technological, + Environmental Planning (U.T.E.P.)

"U.T.E.P. offered me a great opportunity to advance myself as an active scholar, with analytic tools, an interdisciplinary vision and a planning sensibility. Dynamic interaction with professors and colleagues stimulated my academic insights and spurred me to completion of my doctoral work. I especially benefited from the numerous research opportunities and seminar series that were available in the Program and at the University."

Soonae Park (Ph.D. 1998), Assistant Professor
Department of Public Administration,
Soongsil University, Seoul, Korea

"U.T.E.P. provided me with the flexibility to design a program that included my interests in planning theory and social science methods applied to transportation and land use planning. Owing to the degree's interdisciplinary nature, I found the faculty very open to collaboration with students and with other departmental units."

Daniel Rodriguez (Ph.D. 2000), Assistant Professor
Department of City & Regional Planning,
University of North Carolina, Chapel Hill

Description and Objectives

Planning is an interdisciplinary field that focuses on knowledge and research capabilities for action and analysis in public- and private-sector policy formulation, implementation, and evaluation. The Ph.D. degree in Urban, Technological, + Environmental Planning (U.T.E.P.) is oriented towards research in the planning field, which addresses complex systems that typically encompass an array of environmental, social, political, technical, and economic factors.

Urban and regional planning research most commonly embodies a distinct spatial dimension. Scholars are interested in subjects as diverse as the political economy of public transit, the creation of conditions for inner-city revitalization, international economic shifts due to the spread of semiconductor technology, the effects of environmental contamination on patterns of urban and regional development, public policy toward regulatory agencies, and behavioral responses to built environments and the policies that influence that behavior. These are also areas of research for many social scientists and scholars from professional fields such as business administration, engineering, public health, and social work. Scholars in planning differ from these in that their interdisciplinary work draws on

and contributes to a range of disciplines and their attention particularly focuses on the implication of research for processes of policy making.

The Ph.D. in U.T.E.P. is an interdisciplinary doctoral degree aimed at training mature individuals interested in policy and research in public- and private-sector planning issues. In order to prepare to do research in a sub-area of this large field, each student is expected to demonstrate an understanding of the literature, theory, and research in a specialization area within urban, regional, technological, and environmental planning. The highly individualized course of study operates under the premise that concepts and methods from several professions and academic disciplines are applicable to problem solving and planning for various urban and regional systems. Accordingly, students rely on faculty resources from Taubman College and from other schools, colleges, and institutes of the University of Michigan.

History of the Ph.D. in U.T.E.P.

The Ph.D. in Urban, Technological, + Environmental Planning began in 1968 as the Ph.D. Program in Urban + Regional Planning under the Office of the Vice President for Academic Affairs. From its inception, it was a University-wide Ph.D. program with faculty participation from many colleges throughout the University. In the late 1970s, the degree moved into the Rackham Graduate School. The name changed to the Ph.D. in Urban, Technological, and Environmental Planning in 1982. The degree moved into A. Alfred Taubman College of Architecture + Urban Planning in 1989 and administratively merged with the professional program in planning to form the Urban + Regional Planning Program. In its over 35 years of existence, it has granted about 160 Ph.D. degrees. U.T.E.P. graduates hold faculty positions in a range of departments in universities and work as consultants and staff of research organizations.

Educational Resources

U.T.E.P. provides students with a broad range of faculty and institutional resources to support doctoral-level research. Affiliated faculty include nationally and internationally recognized members of the University of Michigan's graduate faculty at Taubman College; the College of Engineering; the College of Literature, Science, and the Arts; and the Schools of Business Administration; Education; Natural Resources and Environment; Public Health; Public Policy; and Social Work.

The strong research focus of the College and the University has resulted in the establishment of research facilities that are among the best in the country. The libraries have large collections and increasingly offer online access to data and documents. In addition to computing facilities across campus, U.T.E.P. students have access to an instructional computing

facility shared by the School of Art and Design and Taubman College, a research facility consisting of a cluster of computers. Doctoral students also have access to the extensive research and testing facilities of Taubman College, as well as the Geographic Information Systems Laboratory. Doctoral students participate regularly in sponsored research projects directed by Urban + Regional Planning faculty.

The Urban + Regional Research Collaborative (U.R.R.C.) is the umbrella organization for research of the Urban + Regional Planning faculty and students, as well as others in the Taubman College interested in urban and regional issues. The U.R.R.C. provides space for student research assistants on funded and unfunded research projects, together with up-to-date computer facilities. The U.R.R.C. sponsors a monthly seminar series highlighting the research of Taubman college faculty, students, and visitors, and provides a vehicle for collaborative research and venue for developing external funding.

Other research units on campus also provide specialized laboratory facilities, exposure to a broad range of research, and possibilities for field experience. Among the resources most commonly identified with doctoral student interests are the Institute for Social Research, the Center for Research on Learning and Teaching, the Population Studies Center, the Center for Statistical Consultation and Research, U.M.T.R.I. (UM Transportation Research Institute), I.L.I.R. (Institute for Labor and Industrial Relations), the UM Medical Center, and the Michigan Program on Poverty and Social Welfare Policy.

Admission Requirements

Unless otherwise specified, the general requirements of the Horace H. Rackham School of Graduate Studies apply to the Ph.D. degree in Urban, Technological, and Environmental Planning. Applicants to U.T.E.P. must meet the general requirements of the Horace H. Rackham School of Graduate Studies. Please refer to the online publications for the most up-to-date information on admission and programs of study at the web address below:

Office of Admissions
Horace H. Rackham School of Graduate Studies
The University of Michigan
106 Rackham Building
915 E. Washington Street
Ann Arbor, MI 48109-1070
Phone: (734) 764-8129
Fax: (734) 647-7740
E-mail: rackadmis@umich.edu
Web: http://www.rackham.umich.edu/

Admission to U.T.E.P. is normally limited to the fall term. Academic requirements for the Ph.D. degree apply to persons qualifying for regular admission. Normally, only three to five new students can be admitted each year. This number represents a small percentage of those applying for admission. Students may also apply as a departmental "Not Candidate for Degree" (N.C.F.D.) if they wish to take a few courses before deciding to apply for admission as a regular U.T.E.P. student.

ELIGIBILITY

Applicants will normally possess a master's degree in urban planning or a related field. Applicants with other master's degrees will be considered as well, as will exceptionally well prepared applicants with a bachelor's degree and at least one year of work experience in an organization/agency engaged in planning.

In some cases applicants will be offered special admission. The requirements accompanying special admissions will vary with individual cases and may range from a few additional courses to an entire year or more of preparatory work. Those applicants with insufficient background in planning may be required to take additional course work. Allowance may be made in the admission process for academic credit beyond that related to a degree as well as for individual achievement, professional experience and other promising aspects exhibited by the individual applicant. Exceptionally prepared students lacking a master's degree may apply to the joint M.U.P./Ph.D. program. Application may be made to both programs at the same time.

In addition to the above requirements, the following items are normally required for applicants to U.T.E.P.:

1. An official undergraduate transcript; a grade point average of 3.3 or better is expected.
2. An official graduate transcript; a grade point average of 3.5 or better is expected.
3. A statement of purpose explaining the applicant's proposed area of study and research interests.
4. A minimum of three letters of recommendation. Where reasonable, at least two of these letters should be from the applicant's previous professors.
5. The Graduate Record Examination (General Test). The GRE is required of students whose native language is English and is recommended for all applicants. The GRE is not required of international students who have not received a degree at an institution where English is the language of instruction. Schedule a test at: http://www.gre.org.

6. Examples of relevant work by the applicant. These examples may consist of a portfolio, published articles or other papers and documents that are representative of the applicant's work.
7. For applicants whose native language is not English, the TOEFL language test with a score of 600 or better (paper-based test); 250 or better (computer-based test). The Michigan English Language Assessment Battery (MELAB) test with a score of 85 or greater may be substituted for the TOEFL test requirement. Applicants who received graduate degrees from institutions where English was the language of instruction may waive these tests. Rackham School of Graduate Studies will require all international students to take the Academic English Evaluation (A.E.E.) test after arrival on campus before classes begin.

APPLICATION PROCEDURE

Students seeking admission for the Ph.D. in U.T.E.P. are encouraged to apply online at: http://www.tcaup.umich.edu/admissions/admissions.html. Application packets may also be downloaded at: http://www.rackham.umich.edu/Admis/rackhamalt.html.

For those unable to apply online or download an application packet, applications can be requested at the address below or by sending an email to utep.phd@umich.edu.

Ph.D. in U.T.E.P.
Urban + Regional Planning Program
A. Alfred Taubman College of Architecture + Urban Planning
The University of Michigan
2000 Bonisteel Boulevard
Ann Arbor, MI 48109-2069
Phone: (734) 763-3075
Fax: (734) 763-2322
E-mail: utep.phd@umich.edu
Web: http://www.tcaup.umich.edu/urp/

See Frequently Asked U.R.P. Admission Questions at: http://www.tcaup.umich.edu/admissions/admurpfaq.html.

Please mark departmental application materials for Urban Planning or U.T.E.P. U. S. citizens should send original transcript(s) to the department only. International applicants should send a second set of original transcripts with their Rackham application. Transcripts and letters of recommendation may be sent separately from the application or with the application (sealed in an envelope and signed on the flap).

APPLICATION DEADLINES

For consideration for departmental financial aid, applications should be submitted by **January 1.** Most admission decisions are made in February. Applications for fall admission will be accepted through **July 1** for international students and **August 1** for domestic students or until the class is filled.

Send test scores to the following codes:

	Institution	Department
TOEFL	1839	97
GRE	1839	4402

Ph.D. U.T.E.P. Degree Requirements

Degree requirements are divided into two parts: pre-candidacy and candidacy/dissertation research. The former involves course work, qualifying examinations, an approved interdisciplinary paper, and a dissertation prospectus. Candidacy is certification that all requirements have been met except the dissertation. The Doctor of Philosophy (Ph.D.) degree in Urban, Technological, and Environmental Planning is granted upon the successful completion and defense of the dissertation.

All students must satisfy the pre-candidacy requirements including demonstration of competence in planning theory, analytic methods, research design, and a selected specialization. In addition, demonstrated ability to integrate knowledge from different disciplines and professional fields must be shown through an interdisciplinary paper.

Candidacy preparation for the U.T.E.P. Ph.D. degree typically involves 24 to 48 credit hours of course work over a two- to three-year period. The Rackham School of Graduate Studies requires a student to accumulate at least 68 Rackham fee totals overall (course and dissertation work), 36 of which must be accumulated prior to admission to doctoral candidacy. Most students entering U.T.E.P. have a master's degree, and many requirements are satisfied by virtue of previous course work. Students who enter with a relevant master's degree will have the minimum Rackham fee total requirement reduced by 18. Thus, the minimum requirement for U.T.E.P. students with a relevant master's degree is reduced to a total of 50 Rackham fee totals, at least 18 of which must be completed before candidacy is attained.

Pre-Candidacy Requirements

1. A Compliance Form is used to record the completion of requirements and various approvals and to monitor the student's progress through the program. The student is responsible for maintaining this form and for making sure a current duplicate form is on file in the Urban + Regional Planning office. The Compliance Form is an integral part of the student's record. The student's advisor should review and sign the form

each term, thereby approving course elections and monitoring progress. Beginning in the second year, students complete annual reviews in conjunction with their advisors in order to monitor and facilitate progress through the program.

2. As a general rule, at least two years of formal enrollment and course work are completed before dissertation-level research is begun. During this time, a student's cumulative grade point average may not fall below a B without academic discipline or probation.
3. A student demonstrates knowledge in three areas: analytic methods, interdisciplinary studies and a selected area of specialization.
4. Evidence of the equivalent of eight months of full-time work experience (teaching, research, or practicum) in a planning-related situation must be submitted and approved by the student's advisor or the coordinator of doctoral studies. Work experience before entering or while enrolled qualifies equally.
5. Students may not be inactive (unenrolled) in the pre-candidacy period for two consecutive terms (fall/winter) without special permission. Two ways exist for a student to be inactive with permission:
   - Leave of Absence
     A pre-candidate may request a leave of absence from U.T.E.P. for one year. The student may request an extension of the leave for a second year. During a leave of absence, a student is not enrolled in courses. The student's advisor and the coordinator of doctoral studies evaluate and approve the request. A form for requesting a leave of absence is available from the Urban + Regional Planning office.
     A student must apply for re-admission to the Rackham Graduate School and U.T.E.P., but U.T.E.P. will assure re-admission if the terms of the leave of absence have been observed. If a student does not return to U.T.E.P. by the end of the second year of the leave of absence, re-admission will not be automatic. The U.T.E.P. Admissions Committee will consider the student for re-admission based on the student's record in the program, a new statement of purpose, the connection of the student to advisors, the recommendations of faculty with whom the student has been working in U.T.E.P., and the articulation of a clear and feasible plan for completing the Ph.D. The aim of these requirements is to assure that a student has refocused on Ph.D. work after a long absence, has renewed desire and commitment to completing the work and is prepared to move ahead quickly with the Ph.D. The student is responsible for initiating the re-admission process at the end of the leave period or at the end of the period when the student was not part of U.T.E.P.

   - Detached Study
     A student may apply for detached study status for a period of study

during which he or she is physically absent from the University and draws no services (with the exception of financial aid) from the University. During this period, the student must devote time to the program of study. Students apply to Rackham with approval of U.T.E.P. for certification of detached study status. This certification assures the student of re-admission to the program at the end of the detached study period, except when the absence exceeds 12 months. No application for re-admission is required. If a student enrolls at the University while on detached study, the detached study certification will be cancelled. Students on detached study may apply for deferment of educational loan payments.

6. The student is advanced to candidacy when all requirements except the dissertation have been satisfied. The normal time limit to achieve candidacy is two to three years from date of first enrollment in U.T.E.P. Students who take longer than four years need to document a clear rationale for their slow progress. Candidacy is achieved with a hearing, which is conducted by members of the faculty. This hearing committee meets with the student and either recommends candidacy or advises the student to return later when requirements are fully satisfied. If candidacy is recommended, the committee will submit a formal recommendation for candidacy to the Rackham Graduate School.

Candidacy Requirements

1. A complete Compliance Form that indicates the satisfactory completion of all degree requirements except the dissertation.
2. Approved work experience.
3. A dissertation prospectus that is fairly specific (usually not more than 20 pages in length) should identify the area of research (including the proposed dissertation topic), reflect adequate knowledge of the applicable research methods as well as adequate knowledge of the relevant literature and theory and show an appreciation of the implications of the research for planning and/or policy. The prospectus is the focal point of the candidacy hearing and an approved prospectus is a major requirement for advancement to candidacy. The prospectus needs to present a clear statement of the problem or issue that will be dealt with, what the candidate intends to do and how it will be done. A student with a well-prepared prospectus (and candidacy) should be able to leave campus, if necessary, with a foundation upon which a more extensive proposal can be prepared and dissertation work can begin.
4. A collection of papers and/or reports relevant to area requirements and the proposed dissertation research.
5. Evidence that other Rackham requirements have been met (see *Rackham Student Handbook*).

6. The Rackham Graduate School requires that students be enrolled during the term in which they take their preliminary examinations (for U.T.E.P. students this means the term in which the area specialization exam is taken; the interdisciplinary paper is not considered a preliminary examination.)

Dissertation Research

1. Students achieving candidacy must organize a dissertation committee and have a dissertation proposal approved by that committee within six months of candidacy. The proposal is a more extensive document than a prospectus. It is generally 30-50 pages in length and covers the same topics as a prospectus but in greater detail. For example, it would present the research topic, specific questions to be addressed, a detailed research design, the methods to be employed, data sources and relevant theory and literature. Essentially, it is a detailed research plan, very much like a proposal for a sponsored research project. An approved proposal constitutes readiness to proceed with dissertation work.
2. The Rackham Graduate School defines rules and regulations governing dissertation research and preparation. U.T.E.P. requires a dissertation committee consisting of at least four persons. The committee should have a minimum of two members of the program faculty, one of whom is chair or co-chair, and one member from outside Taubman College. (See the *Rackham Student Handbook* and the *Rackham Dissertation Handbook*.)

Required Courses

Three courses are required of all U.T.E.P. students. During the first year, students must register for UP 830 (U.T.E.P. Core Seminar) for three credit hours. The seminar examines the application of diverse aspects of planning practice and theory from an interdisciplinary perspective and considers ethical issues related to components of the planning process.

Second-year students are required to take UP 835 (U.T.E.P. Research Seminar) for four credit hours. This year-long seminar has three objectives. First, it exposes students to various approaches to research related to planning. Second, it enables students to formulate and test out researchable topics among faculty and student peers. Finally, it enables students to gain experience in developing an appropriate research design, in executing the research and in formally presenting it to an audience of faculty and students at a "Symposium on Applications of Planning Theory." During either their first or second years students take Urban Planning 650, Advanced Urban Theory. This course is offered during the winter semester of odd-numbered years, and joins two U.T.E.P. cohorts in one class.

Qualifying Examinations and Interdisciplinary Studies

Students are expected to be skilled in at least two analytic research techniques (in addition to statistics) and reasonably knowledgeable about several others. They are also expected to display substantive knowledge within a specialized area of study. Finally, students are expected to demonstrate an ability to integrate and synthesize knowledge from at least three disciplines in an interdisciplinary paper.

AREA I: ANALYTIC METHODS

Students qualify in analytic techniques by completing the following:

1. Satisfactory performance (B or higher) in two cumulative graduate level statistics courses. Students entering with previous statistics experience may wish to enter directly into a second semester statistics course.
2. Competence in at least two analytic/research methods. These are methods used in planning research and should prepare the student for his/her likely area of dissertation work. Competence is demonstrated through completion of three methods courses (in addition to statistics) with a median grade of no less than B+. See the *U.T.E.P. Handbook* for more details.

AREA II: INTERDISCIPLINARY STUDIES

Most problems in public planning cannot be adequately addressed from the perspective of a single discipline. Therefore, students are expected to demonstrate an understanding of the literature, theory, and methods from each of three disciplines and an ability to synthesize or integrate that knowledge. An understanding of the relevant literature, theory and methods is normally achieved through graduate-level course work in the disciplines. Integration is demonstrated through satisfactory completion of an interdisciplinary paper, prepared under the guidance of three faculty readers. The paper is written as part of an interdisciplinary directed study taken as a three-credit-hour course under the direction of three faculty. The inter-disciplinary paper is often linked to the student's dissertation topic and its literature review.

1. Course Work:
   During the first semester in the program, each student should meet with his/her advisor(s) to:

a) Discuss the student's goals and interest in U.T.E.P.

b) Identify three disciplines (i.e., fields of study, areas of inquiry) that may be the foundation for satisfying the interdisciplinary requirement.

c) Develop a plan of study indicating courses to be taken, or courses that have been taken, covering the appropriate literature (theory and method) for each of the disciplines. Students must take at least two three-hour, graduate-level courses in each of three disciplines. The courses in a discipline need not necessarily be taken in a department that offers degrees in the discipline. This program of interdisciplinary study should be reviewed periodically by the faculty advisor.

2. Directed Study:
   When the student has completed course work covering the disciplines identified in Ib, he or she may register for a three-credit-hour interdisciplinary directed study. This course is normally taken during the fifth semester in U.T.E.P. under the guidance of a committee of three faculty. The requirement will be satisfied when the formal course work is completed and the directed study (interdisciplinary paper) is completed to the satisfaction of faculty readers.

AREA III: SUBJECT SPECIALIZATION

The requirements for the subject specialization area are the following:

I. Coursework in the specialization, to be determined jointly by the student and his or her advisor.
2. A take-home exam, followed by an oral exam, with a "Pass" outcome. The student will meet with the committee to identify areas of expertise before construction of the exam. The exam may be taken once again, if necessary, to achieve a "Pass" or "Conditional Pass" status. A "Conditional Pass" indicates that additional requirements must be met, but the exam need not be retaken.

The requirement is met when the examination is passed.

Substitutions and Credit for Previous Work

Most Ph.D. students enter the University of Michigan with master's-level work that may be applied to the degree requirements. The application of previous work to current requirements is proposed by the student and requires the approval of the student's advisor and the coordinator of doctoral studies. This information is recorded on the Compliance Form.

Language Requirement

FOREIGN LANGUAGE REQUIREMENT

There is no foreign language requirement for Ph.D. students in U.T.E.P. However, work in some areas of specialization and on certain research/dissertation topics may require a knowledge of one or more foreign languages.

ENGLISH LANGUAGE PROFICIENCY REQUIREMENT

Prior to taking the qualifying examinations, students are also expected to demonstrate writing skills in the English language of the sort required to produce a doctoral dissertation. Such writing skills will be demonstrated in the process of completing routine written assignments in core courses. Students having difficulty doing so are encouraged to take course work at the English Language Institute and/or other units, as appropriate and subsequently are required to take an English Proficiency Examination prior to taking the qualifying examinations.

Integrated M.U.P./Ph.D. Curriculum

A student-initiated combined M.U.P./Ph.D. curriculum is an option for a very small number of exceptional students. The students who could benefit from such a program fall into two categories: 1) students admitted to the Ph.D. program who do not have a master's degree, or who do not have a Master's in Urban + Regional Planning and are interested in obtaining the professional degree; 2) students currently in the master's program who are admitted to the Ph.D. after their first year in the M.U.P. program. In most cases such students will have begun fulfilling the M.U.P. requirements in their first year and will thus not be able to make use of every choice from the list below.

The master's is the professional degree in the field of urban and regional planning, and the Ph.D. is the research degree. In contrast to traditional disciplines, where the master's is granted on the way to a research-oriented Ph.D., the Master of Urban Planning (M.U.P.) implies a mastery of the professional skills needed for urban planning practice. For this reason, the advisor is responsible for ensuring that students participating in the integrated program take the appropriate set of courses to develop professional competency in their chosen areas of study. In order to enable such candidates to complete both degrees while adding the minimum amount of time to their program, the following areas are proposed for coordination of ways to meet the requirements of the two degrees. These are suggested guidelines for such students, their advisors and the instructors of core courses. All coordination is optional; in any category; the candidate is free to fulfill the requirements of the M.U.P. and the Ph.D. curricula separately.

COORDINATION OF M.U.P./PH.D. REQUIREMENTS

The two statistics courses taken as part of Area I within the doctoral curriculum may fulfill the quantitative methods requirements of the M.U.P. curriculum. This dual counting will be recorded with the signature of the instructor of the quantitative methods course on the M.U.P. Compliance Form.

The U.T.E.P. Core Seminar (UP 830) may fulfill the planning theory requirement of the M.U.P. curriculum. This dual counting will be recorded with the signature of the instructor of the planning theory course.

Subject to Curriculum Committee proposal review and supervising faculty approval, the combination of the Area II paper and the UP 835 (U.T.E.P. Research Seminar) paper will also serve as the candidate's master's thesis. The student who chooses this option will normally prepare Area II and UP 835 papers on closely related topics and will prepare a single integrated document with the Area II paper forming a literature/theoretical basis and the UP 835 paper forming the empirical component.

Credit and Fee Total Accounting

Rackham Fee Totals (RFTs) are slightly different from credits in that a maximum of nine may be accumulated in any semester. Hence the typical M.U.P. graduate would have 36 RFTs upon graduation, which meets the Rackham threshold for advancement to doctoral candidacy. Completion of the Ph.D. requires 68 RFTs including any accrued at the University of Michigan in the M.U.P. curriculum. To participate in the integrated M.U.P./ Ph.D., a student must be admitted to both degree programs.

"But then the Depression came and war and a generation of Americans grew up who had apparently forgotten what a town was, or how a city was built and who were obsessed by enthusiasm for the free passage of the automobile at the expense of all other values. We were told that this was the way it had to be done by hero-architects ...; and hero administrators ... put it heroically, savagely, into practice and the Bronx was destroyed and I-95 and its connectors came to New Haven and smashed through between the railroad station and the old town, destroying everything in their path. And I-95 went on down the east coast, reaming out the centers of cities, scattering neighborhoods, mostly those of black Americans, all the way to Miami, where as its last act it obliterated Overtown, an African American community of long standing, where Cab Calloway had delighted to sing."

Vincent Scully, 1999

Introduction

In response to the rise of sprawl and changing notions of place and community, Taubman College has initiated a post-professional Master of Urban Design degree program. Enrollment for the one-year curriculum (fall, winter, and spring/summer terms) will begin in fall 2001.

Movements such as New Urbanism, Livable Communities, Smart Growth and Communitarianism have arisen in America to compete with contemporary notions of a more transient world in technological flux. Indeed, the very notion of the "city" is being questioned as both cyberspace and sprawling urbanized regions come to dominate daily experience. These and other challenges require an informed and sophisticated response from a new generation of urban designers.

Prior to enrollment, students are normally required to have a professional design degree, planning degree or its equivalent in hand, either in architecture (B.Arch., M.Arch.), landscape architecture (B.L.A., M.L.A.), or urban planning (M.U.P.). The program is studio-based and offers an array of required and elective classes which enrich, inform and act as a counterpoint to the studio design projects. Courses focus on history, theory, methodology and practice. Selectives and electives within Taubman College and cognates across campus provide further enrichment, interdisciplinarity and breadth of study. The degree in Urban Design can be coordinated with a Master's Degree in Architecture, Urban Planning or Landscape Architecture.

The University of Michigan is located in a region that has many large cities with possibilities for study, research and engagement (Detroit, Chicago, Toronto, Cleveland, Grand Rapids, Toledo, etc). There is an urban revival currently underway in these and other cities with an influx of new commercial and residential development. As a large industrial city on the rebound, Detroit is an excellent laboratory for urban design research, practice and service.

The program takes advantage of Taubman College's present engagement with the larger public, especially with the city of Detroit, which is only 45 minutes away. Accordingly, it is committed to recruiting applicants from urban centers who have experience and interest in working with urban problems. A new interdisciplinary center is planned that will focus on research and service in metropolitan Detroit and other cities in the state, country and abroad. This initiative builds on the faculty and student efforts already in place in Taubman College and elsewhere on campus.

Urban Design in Relation to Other Professions

The program is designed to bridge architecture and urban planning. These two fields, both professions with well-established bodies of knowledge, have overlapping interests yet there is a lack of linkages between the two.

Architecture, both as a discipline and a culture, prides itself on a long history of aesthetic and technical creativity and virtuosity. The architect has traditionally balanced invention and personal expression against budget, convention and context. Twentieth century modernism has placed a high premium on experimentation, innovation and originality and the cult of the master architect has been heightened by the media in recent decades.

Urban planning, on the other hand, has cultivated more of a culture of community service and participation and an integration of knowledge from multiple disciplines to understand and to shape urban growth and change. Where planners most frequently employ the written word, quantitative analysis and two-dimensional mapping, architects work in physical materials and three-dimensional space. Another, less recognized difference is in the relationship to clients. Architects work directly with clients that commission them to design specific buildings. The clients for public planning are more multileveled; the organization contracting for planning services generally shares that role with relevant communities, stakeholder groups, and "the public interest." Although both professions can be characterized as instrumental and service-oriented, architects have tended to be more autonomous and protective of personal authorship while planners have tended to be more collaborative facilitators and mediators on behalf of other parties.

Landscape architects are situated somewhere between architecture and planning in terms of their design modality and culture. Their interest in the natural environment and its sustainability and stewardship has led them to think regionally. They share both designers' interests in aesthetics and planners' interest in systems, in this case natural systems.

This program educates urban designers who combine many of the skills, methods and values of all three disciplines. Like architects, urban designers work in three dimensions, but at a larger scale than the individual building. Like planners, they translate public policy into criteria and guidelines that direct other design professionals, engineers, and developers. Like landscape architects, they look at the environmental and ecological dimensions of design. Urban designers are both designers and mediators, typically working in the public sector as a sort of civic midwife that coordinates and orchestrates the work of other design professionals. The focus of the program will tend to neighborhood and community design, development, and redevelopment.

Charrettes, Conferences, and Related Activities

Current activities include the annual Detroit Urban Design Charrette. Many of the nation's leading urban designers lead teams of Taubman College students in a four- or five-day workshop that investigates a timely project in Detroit. Several of the guests in the College Lecture Series each year are noted urban designers. The urban design program also hosts important events such as the Midwest Regional Mayor's Institute on City Design, and the 2001 National Academic Conference on New Urbanism.

Program Size

Because the M.U.D. program is meant to be a small, studio-based experience, enrollment each year will be limited to one studio of 10–15 students.

Academic and Career Counseling

The College offers academic and career counseling. Because of the small size of the M.U.D. program, the director of the program and other core faculty members will conduct both academic and career counseling. Staff members who act as liaisons with professional firms assist students in finding internships and employment.

Financial Aid

Funds are available for financial aid to selected students, based primarily on merit in the form of fellowships or graduate teaching instructorships or graduate research assistantships. Applicants can apply through channels prescribed in the General Information section of this Bulletin, and under Financial Assistance on the website.

Academic Policies and Procedures

Master of Urban Design students are subject to the same academic policies and procedures as students enrolled in the Architecture Program. For details, see "Academic Policies and Procedures" in the Architecture Program section of this Bulletin.

Computer Hardware and Software Recommendations

A personal computer is an essential tool for learning and professional work in the programs offered at Taubman College of Architecture + Urban Planning. Our students master computing technologies and use them throughout the curriculum. Although the College provides desktop computing clusters in various locations throughout the building and also hosts a campus computing site, it is strongly recommended each student provide his or her own personal computer.

Before making a purchase, students should consult the current hardware and software recommendations on the TCAUP Help Desk website at http://www.tcaup.umich.edu/helpdesk/help.html.

Master of Urban Design Degree

Description and Objectives

The intent of the program is to prepare design professionals to intelligently and creatively engage the complex challenges and opportunities—physical, social, economic, and cultural—facing the contemporary metropolis in the United States and abroad. The training offered is both theoretical and practical, with an emphasis on the design of physical form that accommodates, embodies, and expresses society's needs and aspirations.

Admission Requirements

To be eligible for admission of the Master of Urban Design degree program, applicants should already possess one (or more) of the following degrees:

1. 5-year Bachelor of Architecture
2. 5-year Bachelor of Landscape Architecture
3. Master of Architecture, Master of Landscape Architecture, Master of Urban Planning, or their international equivalent.

Applicants must show evidence of understanding, aptitude and achievement in the design of the physical environment, as well as an interest and a commitment to urbanism. Professional design experience will be viewed favorably.

Selective courses may be waived on a case by case basis for prior academic experience or work experience in urban design, architecture, landscape architecture, or urban planning; or in organizations such as non-profit housing or real estate development corporations.

APPLICATION PROCEDURE

Requests for information and application materials should be directed to:

M.U.D. Admissions
A. Alfred Taubman College of Architecture + Urban Planning
The University of Michigan
2000 Bonisteel Boulevard
Ann Arbor, MI 48109-2069
Phone: (734) 764-1649
Fax: (734) 763-2322
E-mail: mud@umich.edu
Web: http://www.tcaup.umich.edu/ud/

All application credentials should be directed to the above address. Do not address inquiries or send credentials to the Horace H. Rackham School of Graduate Studies.

APPLICATION DEADLINE

All application materials are due **January 15** to be considered for enrollment the following fall. Admissions is limited to fall term only. An application file is not reviewed until it is complete. Applications arriving after the deadline or those files with missing materials cannot be guaranteed a review. It is the responsibility of the applicant to verify that all required materials have been received.

APPLICATION FORM

The application form is required from all applicants. The form must be filled out completely and accurately to be considered a valid application for admission. Do not use an application form from the Horace H. Rackham School of Graduate Studies.

APPLICATION FEE

The $50.00 (in U.S. funds) nonrefundable application fee is required from all applicants. A check or money order, made payable to the University of Michigan, must be attached to the application form.

OFFICIAL TRANSCRIPTS

The College requires applicants, domestic and international, to provide one official transcript or certified credentials (transcripts) from all universities and community colleges attended. If your academic credentials are not in English, you must submit them in both English translation and in the original language. International credentials should include a certified copy of the diploma, if awarded. Applicants holding degrees from Bangladesh, Sri-Lanka, Burma, India, Nepal, and Pakistan must include detailed examination records, for all years of the program, showing subjects, marks received, and class obtained. Transcripts are kept on file for graduates of our College.

THE GRADUATE RECORD EXAMINATION

The Graduate Record Examination (GRE) is required when applying for either the two-year or the 3+ M.Arch. degree.

LETTERS OF RECOMMENDATION

Three letters of recommendation are required for all applicants. Recommendations should be on the forms provided with the application. If recommendations are sent on University or company/firm stationery, be sure the applicant's full name is prominent or attach the letter to the recommendation form provided. Applicants are encouraged to provide each referee with a pre-addressed envelope (using the address above) to have the recommendation mailed directly to the College.

PORTFOLIO

All applicants are required to submit samples of their academic work and, if possible, their professional work. The following guidelines have been prepared by the Graduate Admissions Committee to help applicants select and prepare these samples.

1. Number and Type of Samples

Select samples of work to include in a portfolio of no more than 12 pages in length (both sides may be used). Samples should be chosen to cover the breadth as well as the depth of the applicant's knowledge, abilities, and interests. The Admissions Committee is interested in work that demonstrates knowledge, interest and ability in technical areas, human and social concerns, and symbolic and aesthetic issues. The Committee considers the following types of work to be suitable for inclusion with an applicant's samples: graphic design, photography, paintings, freehand drawings, building design drawings, analytical investigations (structural and environmental systems), building programming, measured and working drawings, computer generated drawings, and other types of work which best represent the applicant's knowledge, aptitudes and experience. Two or three items showing the development of a plan, detail, or concept from early schematics to finished presentation are especially appropriate. The portfolio should be considered a design problem.

2. Preparation of Samples

The Committee encourages applicants to submit reproductions of work instead of originals and to be judicious in the choice of reproduction methods. The Committee will assume that copies represent the actual quality of the original work in regard to line character, color, value, finish, and other visual characteristics. Slides, transparencies, or videos will not be accepted. Each exhibit should be labeled neatly with information describing the medium used, whether the work represents an academic, professional, or other type of project, and whether the work was undertaken independently or as part of a group effort. For professional and group projects, the label should indicate the type and extent of the applicant's personal involvement.

3. Size and Format of Samples

The collection of samples submitted with the application must be securely fastened together in a durable folder, binder, or box, whose overall dimensions do not exceed 9″ x 12″ x 1″ thick (220mm x 300mm x 25mm). Do not use a mailing tube. Maximum sheet size may be no larger than 11″ x 17″ (280mm x 430mm), which must be folded to a size of 8.5″ x 11″ (215mm x 280mm). Collections that do not meet above specifications for size and format will not be reviewed. Portfolios will be returned

only to those applicants who provide a pre-addressed mailing label and adequate postage (stamps but no envelope). International students may send stamped postal coupons. Please note, the U.S. Postal Service has initiated new restrictions on pre-stamped envelopes. For this reason, we cannot return portfolios that weigh more than 12 ounces.

OFFICIAL TOEFL/MELAB SCORE

An official TOEFL or MELAB score is required from all non-U-M applicants whose native language is not English. The minimum required score on the Test of English as a Foreign Language (TOEFL) is 560 (paper-based test); 220 (computer-based test). The minimum required score on the Michigan English Language Assessment Battery exam (MELAB) is 80. Test scores and/or evaluations from other agencies are not acceptable. Applicants who have received degrees from other universities in the United States are not exempt from this requirement. Those applicants taking the TOEFL should make arrangements to have the score reported directly to the College with the code number of 1839. Official paper-based TOEFL score reports are received six weeks or later after the test date. Applicants should plan accordingly to meet the **January 15** deadline. TOEFL and/or MELAB scores that are more than two years old are not acceptable. If admitted, the College reserves the right to reevaluate English proficiency upon arrival and to require instruction in English if necessary. Instruction in English will be required for those admitted with TOEFL scores below 600 (paper-based test) or 250 (computer-based test).

CERTIFICATION OF FINANCIAL SUPPORT

Certification of financial support is required from all applicants who are not U.S. citizens or permanent resident aliens. The Financial Certification Requirements are included with the application packet and are intended to provide you with a minimum estimate of costs during your program of study. Certification required for personal and parental funds: a letter of support (who will support the student and what is the relationship) signed by the family member(s) offering the support and an original bank statement. Certification required from sponsoring agencies: an official signed letter stating the amount of financial support and the period for which it will be available.

PASSPORTS AND VISAS

Each applicant should submit a copy of his or her passport page (or birth certificate), if available. If either of these items is not available, the applicant must indicate the exact way his or her name appears on their passport. The name on the S.E.V.I.S. I-20 must match the name on the passport.

Other important information/forms needed in connection with the application and S.E.V.I.S. I-20 process include:

- Copies of any previous I-20 forms.
- In connection with the issuance of spousal/dependent I-20s, it is critical that the applicant inform the department ahead of time of any pending marriage plans before departure for the U.S. Information regarding the spouse's name, date and place of birth, and citizenship will be required in the preparation of their I-20.
- If applicant is already in the U.S., he or she needs to indicate their **current** visa status (e.g., F-1, F-2, B-1/B-2, H-1B, H-4, J-1, J-2, etc.) and the INS number. The **start date** and **expiration date** of the visa should also be included.
- Use of a **Transfer-In** form is required for all students who are currently in F-1 (student) status in the U.S. Admitting departments will send this form to the student at the time admission is offered, if appropriate. The student will be required to complete the form and fax it back to the admitting department.
- **Important:** Applicants need to indicate on their application form (in section Previous and/or Current Education) if they are currently undertaking any other type of academic study in the U.S. (e.g., non-degree, language study, continuing education courses, GRE prep, etc). This information alerts the department that a Transfer-In form needs to be sent to the student.

Everyone except Canadian citizens needs a passport and a visa to enter the U.S. To apply for a visa, you will need your passport and either a Form I-20 (Certificate of Eligibility) for a student visa or a Form IAP-66 (Certificate of Eligibility) for an Exchange Visitor visa. Other documents such as proof of financial support, English proficiency and previous academic records and payment of an enrollment deposit may be required. Although Canadians do not need either the passport or visa, they must have either a Form I-20 or IAP-66 in their possession when they approach the U.S. border.

Most frequently, students come to the U.S. with one of the two following visas:

1. Student Visa (F-1 status). Students coming to the U.S. to study usually apply for this visa. To obtain this visa the student must take the Form I-20 to the U.S. consulate. Students with F-1 status must be enrolled for a full course of study during the academic year. It is difficult for an F-1 student to obtain permission to be employed during the summer, so you should not count on income from summer employment to finance your study. Husbands and wives of F-1 students may never be employed. It is possible for F-1 students to obtain permission to have 12 months of practical training employment after graduation.

2. Exchange Visitor Visa (J-1 status). To obtain this visa the student must take the Form IAP-66 to the U.S. consulate. J-1 students may be given permission by their visa sponsor to be employed throughout the year. Husbands and wives of J-1 students may also apply for permission to be employed. It is possible for J-1 students to obtain permission to have 18 months of practical training employment after graduation. J-1 students from many countries will be required to return home for two years upon completion of their academic work.

The following are NOT advised for students:

1. Visitor (Tourist) Visa (B-2 status). The B-2 visa permits visiting the U.S. for only a limited period of time. It is very difficult to change to either F-1 or J-1 status once you have a Visitor (tourist) visa. The one exception to this recommendation is when the Consulate writes the words, "Prospective Student" on the visa that is stamped in your passport.
2. Entering without a visa. While citizens of some countries may enter the U.S. as tourists without a visa, students should never do so. This non-visa status allows a stay of only 3 months and cannot ever be changed to student or Exchange Visitor visa. Canadian students, of course, do not require visas and do not come under these restrictive provisions.

For further information concerning visas, please consult with the U.S. Consul in your country.

MANDATORY HEALTH INSURANCE

All international students entering the University of Michigan are required to have health/hospitalization and accident insurance coverage for themselves and their accompanying dependents, spouse and children. The cost of the insurance will be added into the total amount needed for financial certification.

EVALUATION

Eligible applicants are considered for admission on the basis of the following criteria:

1. Quality and content of all previous academic education
2. Evidence of professional commitment and direction—statement of purpose, employment record, letters of recommendation, portfolio, etc.
3. The number of openings available

The preferred application deadline is **January 15.** Applications will not be evaluated until all credentials have been received and the application fee has been paid. Applications missing credentials cannot be guaranteed a review by the Admissions Committee. Applicants are notified of the Admissions Committee decision beginning late March. Admitted students must pay a University enrollment fee to accept an offer of admission.

Master of Urban Design Degree Requirements

In order to qualify for the Master of Urban Design degree, a student must complete a minimum of 39 credit hours including:

- Eight required courses in urban design (33 credit hours), UD 713 (Arch 443, UP 443) History of Urban Form; UD 719 (Arch 519, UP 519) Theories of Urban Design; UD 739 Seminar (or substitute offering); UD 723 Methodologies of Urban Design; UD 729 Practices of Urban Design; UD 712 Urban Design Studio I; UD 722 Urban Design Studio II; UD 732 Urban Design Studio III. A student with a M.U.P. degree is required to also successfully complete the UD 402 studio during the summer half-term prior to UD 712 in the fall term, unless waived by the program director.
- One selective course in real estate or economics chosen from: UP 510 Public Economics for Planning; UP 517/BA 517 Real Estate Essentials; UP 538 Economic Development Planning; UP 539 Methods for Economic Development Planning.
- One elective chosen from:

  Arch 513 Social Change and the Architect
  Arch 517/UP 613 Architect/Planner as Developer
  Arch 523 Theories of Meaning in Contemporary Architecture
  Arch 526/UP 526 Socio-cultural Issues in Planning and Architecture
  Arch 537/UP 537 Housing Systems
  Arch 567/UP 567 Program and Built Environment Evaluation
  Arch 613 New Roots for Environmental Design and Planning
  NRE 540 Geographic Information Systems
  UD 700 Tutorial Studies in Urban Design
  UP 406 Introduction to Geographic Information Systems
  UP 507 Geographic Information Systems
  UP 513 Legal Aspects of the Planning Process
  UP 532 Sustainable Development: Resolving Economic and Environmental Conflicts
  UP 540 Planning Theory
  UP 572 Transportation and Land Use Planning
  UP 579/NRE 579 Land Use Planning and Design
  UP 610 Fiscal Planning and Management
  UP 650 Advanced Urban Theory
  UP 652 Frameworks for Community Development and Housing
  UP 655 Neighborhood Planning
  UP 658 Urban and Regional Planning in Developing Countries

  OR

  One cognate chosen from another school or college (Instructor's permission may be required):

School of Natural Resources and Environment
- NRE 501 Culture and Environmental Design
- NRE 579 / UP 579 Land and Use Planning and Design
- NRE 791 Landscape Ecology in Ecosystem Management: Giving Interdisciplinary Advice

School of Public Policy
- SPP 573 Benefit Cost Analysis

School of Social Work
- SW 650 Community Development
- SW 651 Planning for Organizational and Community Change
- SW 654 Concepts and Techniques of Community Participation
- SW 658 Women and Community Organization

College of Engineering
- CEE 470 Transportation Engineering
- CEE 589 Risk and Benefit Analysis in Environmental Engineering

School of Business Administration
- LHC 482 Real Estate Law
- F 568 Real Estate Investment
- CS 581 Urban Entrepreneurship

Sample Schedule: Master of Urban Design

This schedule is typical for students with a B.Arch., M.Arch., B.L.A., M.L.A., or M.U.P. degree. Each student will be required to take one selective, one cognate course, or one elective, unless waived by the program director. A student with a M.U.P. degree is required to also successfully complete the UD 402 studio during the summer half-term prior to UD 712 in the fall term. M.Arch., M.L.A., and M.U.P. degree candidates at the University of Michigan are eligible for a joint degree. See "Joint Degrees" in this section for information. These requirements may change without prior notice.

Fall Term	Credit Hours
UD 712 Urban Design Studio I	6
UD 713 History of Urban Form	3
UD 719 Theories of Urban Design	3
Selective, Elective or Cognate	3
Total	15

Winter Term	Credit Hours
UD 722 Urban Design Studio II (including Detroit Charrette)	6
UD 723 Methodologies of Urban Design	3
UD 729 Practices of Urban Design	3
Selective, Elective or Cognate	3
Total	15

Spring Half-Term and/or Summer Half-Term	Credit Hours
UD 732 Urban Design Studio III	6
UD 739 Seminar (or substitute offering)	3
Total	9

Joint Degrees

Applicants interested in coordinating the M.U.D. degree with a M.Arch., M.L.A., or M.U.P. degree at the University of Michigan must apply separately to the Urban Design Program concurrently with the other degree application. Applications from students already enrolled in these programs at the University of Michigan should be submitted by **November 15** to be considered for the required M.U.D. studio the following winter term.

From 12–18 credits of course load can be double counted (depending on program guidelines), six of which can usually be counted toward the design studio requirement. M.U.P. students must complete at least two approved urban design studios prior to enrollment, one of which can be the UD 402 studio during the summer half-term. The admissions process will favor applicants with demonstrated or promising design ability, as evidenced by a record of achievement in design studio. Students who are judged to have insufficient design experience may be asked to take an additional design studio prior to enrolling in the program.

Urban Design Faculty

The Urban Design faculty includes instructors and advisors from Taubman College as well as from other University of Michigan schools and colleges.

Taubman College Faculty and Their Specialties

Peter Allen	Real Estate Theory and Practice
Robert Beckley*	Design, Theory, Methodology, Practice, Housing, Park Planning
James Chaffers	Design, Community Design, Values and Ethics
Barry Checkoway	Community Organization, Action and Participation, Social Welfare Planning
Edward Dimendberg	Theory, City and Film
Robert Fishman	History, Theory, Regionalism
Aseem Inam	Design, History, Theory, Methodology, Housing, International Development
Douglas Kelbaugh	Design, Theory, Practice, Housing, Charrettes
Robert Marans*	Neighborhood Planning, Community Development, Park Planning, User Evaluation
Malcolm McCullough	Digital Design, Computer Applications
Rahul Mehrotra	Design, Preservation, International Development
David Scobey	History, Community-Based Planning
Anatole Senkevitch	History, Historic Preservation
Roy Strickland	Design, Theory, Methodology, History, Housing, Urban Institutions
Jean Wineman	Space Syntax

Faculty in Other Schools and Colleges

SCHOOL OF SOCIAL WORK

Lorraine Gutierrez	Multicultural Issues in Communities and Organizations

SCHOOL OF NATURAL RESOURCES AND ENVIRONMENT

Elizabeth Brabec	Land Use Planning and Law
Terry Brown	Geographical and Spatial Analysis
Donna Erickson	Landscape and Recreation Planning, Rural Landscape
Robert Grese	Management of Natural and Cultural Landscapes
Joan Nassauer	Urban and Regional Landscape Ecology, Ecosystem Management

*Emeritus Professor

Faculty

Faculty members are accomplished and diverse, coming from a variety of educational backgrounds and possessing a wide range of professional experiences. They are award-winning architects, planners, and designers, respected scholars, and leading researchers. Faculty are actively engaged in teaching, practice, and research in many fields including architecture, urban security, environmental technology and planning, transportation, recreation, economic development, housing and community development, land use planning, and urban design. Cross-disciplinary efforts within the College and across the University are strongly encouraged and supported.

Douglas S. Kelbaugh FAIA is dean of the College; and **Jean Wineman** is associate dean for research. **Tom J. Buresh** chairs the Architecture Program with **James A. Turner** as associate chair. **Margaret Dewar** chairs the Urban and Regional Planning Program; Jean Wineman chairs the Doctoral Program in Architecture; **Roy J. Strickland** is director of the Urban Design Program; and **Jonathan C. Levine** is coordinator of doctoral studies in Urban, Technological, and Environmental Planning (UTEP).

Teaching responsibilities within the programs are noted by these symbols, which follow each faculty member's name:

- □ Architecture
- ■ Doctoral Program in Architecture
- ○ Urban and Regional Planning
- ◆ Urban Design

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Course Descriptions

Architecture Courses

Arch 201 Basic Drawing

Prerequisite: None

Fall and Winter (3 credit hours)

A freehand studio drawing course limited to pencil and pen, this introductory class concentrates upon seeing, describing, and analyzing form through linear graphic means. Though intended primarily for students considering a design-related career, it is open to students from any discipline wishing to improve their visual literacy. The first half of the course—unbiased toward a particular art—focuses upon understanding the role of line in creating form. Principles of orthographic and perspective projection are introduced in the second half of the semester.

Arch 202 Graphic Communications

Prerequisite: None

Fall and Winter (3 credit hours)

This studio drawing course emphasizes mechanical drawing means and is intended primarily for students contemplating careers in architecture and related professional fields. The student is introduced to a wide range of basic techniques, conventions, and means used in the design fields, as well as selection of drawing instruments and surfaces. Considerable attention is given to the development of a disciplined approach to the construction of measured drawings.

Arch 209 Special Topics in Architecture

Prerequisite: Non-architecture student

Fall and Winter (1–3 credit hours)

This omnibus course provides a vehicle for either:

1. Subject material offered for the first time on a "trial run" basis with the intention of its subsequent acceptance as a regular course offering.
2. A "one time only" course offering centered on the particular interests and abilities of a faculty member.

Arch 212 (HA 212) Understanding Architecture

Prerequisite: None

Winter (3 credit hours)

This course examines visual, cultural, historical, and philosophical aspects of the man-made environment using examples from the field of architecture and the allied arts. The intent of the course is to provide a general view and a rudimentary understanding of the profession and the discipline of architecture. Upon completion of the course, the student is expected to demonstrate an understanding of the ideation context and the formal attributes of the built environments of various eras. The format includes two weekly lectures, weekly discussion sections, and several basic design problems.

Arch 218 Visual Studies

Prerequisite: None

Fall and Winter (3 credit hours)

This studio course provides an introduction to the elements, principles, and techniques that underlie and inform the analysis, creation, and evaluation of visual organizations and are crucial to the process and product of form-making. The course consists of:

1. An overview of selected topics pertaining to the perception of visual organizations.
2. The study of visual organizations entailing point, linear, two-, and three-dimensional elements or combinations thereof.
3. The study of color and its influence on visual organizations.

A variety of studio exercises are used to apply the knowledge and skills acquired throughout the term.

Arch 300 Tutorial Studies in Architecture

Prerequisite: Year 3 standing and permission of instructor

Winter (1–3 credit hours)

This omnibus course provides an individual student or a small group of students, under the direction of a faculty member, a vehicle for self-motivated study in specially identified areas pertinent to architecture which are not covered by other existing courses and which are appropriate to students in their first year of professional studies.

Arch 312 Architectural Design I

Prerequisite: Year 3 standing

Fall (6 credit hours)

The course—an introduction to architectural design—offers small-scale studio problems that deal with space, measure, structure, site, tectonics, program, and habitation. These problems address human needs and the interaction of persons with the natural and built environment.

Arch 313 History of Architecture I

Prerequisite: Sophomore standing

Fall (3 credit hours)

This course is the first in the undergraduate two-course sequence (Arch 313/323) surveying the history of architecture from antiquity to the present. The course introduces students to leading developments in the history and theory of architecture and urban design from ancient times through the Renaissance. Innovation and change in architectural conception, stylistic expression, building typology, and construction technique are examined. Attention is also paid to the way architecture has historically been shaped by varying combinations of the formal and theoretical intentions of the architect, the preferences and needs of the client, and the particular mix of social, economic, cultural, and technical factors operating to define the specific characteristics of a given time and place.

Arch 314 Structures I

Prerequisite: Year 3 standing

Fall (3 credit hours)

This course covers the basic principles of architectural structures, including the influence of geometric, sectional, and material properties related to flexure and shear in beam and framed systems; vector mechanics with application to analysis of trusses, catenaries, and arches; diagrammatic analysis of beams for bending moment, shear, and deflection as well as the study of structural framing systems for vertical and lateral loads.

Arch 315 Environmental Technology I

Prerequisite: Year 3 standing

Fall (3 credit hours)

This introductory course addresses human needs and comfort in relation to the natural and man-made environments. It shows how environmental factors may be utilized, controlled, and modified as an integral part of architectural design. Specific topics include: climate and weather; psychrometrics; solar radiation; wind patterns; heat gains and losses; systems for heating, ventilating, and air-conditioning; requirements for energy conservation; plumbing and drainage systems; fire safety and fire fighting systems.

Arch 316 Design Fundamentals I

Prerequisite: Year 3 standing

Fall (3 credit hours)

This course introduces the beginning student in architecture to a working understanding of the factors and issues that underlie the translation of human needs and purposes into significant architectural form. Course objectives are:

1. To establish a base of design concepts and knowledge with an introduction to references and ideas to foster independent inquiry.
2. To develop skills in environmental analysis, concept formation, and certain aspects of design.
3. To familiarize students with images of architecture and design drawn from various times and cultures.

Specific topics include the basic elements, attributes, and organizational principles of architectural form and their relationship to design intention. Related topics include framework for design, design methods, site analysis and design, human factors, and environmental factors.

Arch 317 Construction I

Prerequisite: Year 3 standing

Fall (3 credit hours)

This course offers an introduction to the study of construction materials and methods. The course stresses general principles that affect construction and its relationship to design intentions. It is divided into three sections: masonry, light frame, and enclosure. Specific topics within these sections include unit modularity, wall systems, floor and roof systems, waterproofing, prefabrication, and project delivery. Exercises that provide a focus for discussion and practice relating to the broader issues of the course center on masonry and light wood frame.

Arch 322 Architectural Design II

Prerequisite: Arch 312

Winter (6 credit hours)

A continuation of Arch 312, this course focuses on the context in which we build, how people perceive the urban environment, how buildings fit contextually into existing circumstances, and how outdoor spaces relate to built forms. Projects include both analysis of existing places and synthesis incorporating the many dimensions of architectural environments. The course concludes with design of a building of modest scale and complexity.

Arch 323 History of Architecture II

Prerequisite: Arch 313

Winter (3 credit hours)

A continuation of Arch 313, this course is the second in the undergraduate two-course sequence (Arch 313/323) surveying the history of architecture from antiquity to the present. The course examines leading developments in the history and theory of architecture and urban design from the Baroque through the twentieth century. Consideration is given to the role of innovation and change in architectural conception, stylistic expression, building typology, and construction technique. Also examined is the way architecture has historically been shaped by varying combinations of the formal and theoretical intentions of the architect, the preferences and needs of the client, and the particular mix of social, economic, cultural, and technical factors operating to define the specific characteristics of a given time and place.

Arch 324 Structures II

Prerequisite: Arch 314

Winter (3 credit hours)

This course covers the basic principles of elastic behavior for different materials such as wood, steel, concrete, and composite materials and compares the properties and applications of materials generally. It investigates cross sectional stress and strain behavior in flexure and in shear, and torsion as well as the stability of beams and columns. The qualitative behavior of combined stresses and fracture in materials is also covered.

Arch 326 Design Fundamentals II

Prerequisite: Arch 316

Winter (3 credit hours)

Through the examination of exemplary buildings, this course considers techniques and strategies of architectural design. Lectures present analyses of individual buildings relating their form and conceptual ambitions to relevant theoretical premises and historical contexts. The works examined range from the early part of the last century through the present and trace the diverse trajectory of developments in twentieth century architecture. Lectures and readings examine structuring principals of design including programmatic organization, material construction, formal syntax, and type. The course aims to reveal and make available to students design strategies found in historically significant and varied examples of architecture while instilling a critical understanding of all these approaches.

Arch 400 Tutorial Studies in Architecture

Prerequisite: Year 4 standing and permission of instructor
Fall and Winter (1–3 credit hours)
This omnibus course provides an individual or a small group of students, under the direction of a faculty member, a vehicle for self-motivated study in specially identified areas pertinent to architecture which are not covered by other existing courses and are appropriate for undergraduate students.

Arch 402 Architectural Design

Prerequisite: 3+ student
Summer-half (6 credit hours)
The sequence begins as small scale studio problems that deal with space, measure, structure, site, tectonics, program, and habitation while addressing human needs and interaction with the natural and built environment. As students are introduced to and explore the many dimensions of architectural environments, there will also be a focus on the context in which we build, the perception of the built environment, the interrelation of buildings to the existing context, and exterior spaces.

Arch 409 Special Topics in Architecture

Prerequisite: Undergraduate architecture student
Fall and Winter (1–3 credit hours)
This omnibus course provides a vehicle for either:

1. Subject material offered for the first time on a "trial run" basis with the intention of its subsequent acceptance as a regular course offering.
2. A "one time only" course offering centered on the particular interests and abilities of a faculty member.

Arch 411 CAD Fundamentals I

Prerequisite: None
Fall and Winter (1–3 credit hours)
This course is an introduction to two-dimensional computer-aided drafting using AutoCAD or similar computer software. Course objectives are accomplished through lectures and labs, readings, and exercises. Course material is presented in a series of weekly exercises and discussed in detail in class. Most assignments have an architectural flavor. The course covers Windows basics, precision sketching, DXF format, blocks, layers, multiple viewpoints, dimensioning, basic three-dimensional modeling, attributes, and architectural documentation. Also included is an introduction to HTML programming and creation of individual WWW home pages.

Arch 412 Architectural Design I

Prerequisite: 3+ student

Fall (6 credit hours)

The sequence continues in the integration and translation of the knowledge, understanding, experience, and skill gained in previous courses into architectural solutions to satisfy given needs, conditions, and means. The primary emphasis is the development of insight into the solution of building and environmental design problems: how they are studied (analysis), how they are approached and carried through (process), and how they are conceptualized and developed (synthesis). Assigned projects require the student to consider issues of human scale and behavior, environmental responsibility, and building construction at a level of greater complexity than previously encountered.

Arch 413 History of Architecture and Urbanism

Prerequisite: 3+ student

Fall (3 credit hours)

This course surveys key themes in the history of architecture and urbanism from antiquity to the present. The course is intended to introduce students to leading developments in the history and theory of architecture and urban design, both chronologically and thematically. The scope of material covered in this course is broad in geographical terms, and will include settings in Europe, Asia, The Americas, and Africa. The course seeks to illuminate ways that architecture has historically been shaped by the formal and theoretical intentions of the architect, the preferences and needs of the client, and the particular mix of social, economic, cultural, and technical practices present in a given time and place. Our objective is to provide a conceptual framework to help students both digest a substantial body of visual and factual information, and develop new habits of seeing, analyzing, and thinking critically about architecture.

Arch 416 Design Fundamentals

Prerequisite: 3+ student

Summer half-term (3 credit hours)

This course introduces the incoming graduate student to a working knowledge of the factors and issues that underlie the translation of human needs and purposes into significant architectural form.

Course objectives are:

1. To establish a base of design concepts and knowledge with an introduction to references and ideas to foster independent inquiry,
2. To develop skills in environmental analysis and concept formation,
3. To familiarize students with exemplary architecture and design drawn from various times and cultures.

Lectures present analysis of individual projects relating their form and conceptual ambitions to relevant theoretical premises and historical

contexts. The course aims to reveal and make available to students design strategies found in historically significant and varied examples of architecture while instilling a critical understanding of all of these approaches.

Arch 417 Construction

Prerequisite: 3+ student
Fall (3 credit hours)
The intent of this course is to reveal the role that construction plays in the ideation and elaboration of architectural form and to focus on the inherent and tangible materiality of the built artifact. Lectures are given twice weekly and provide an introduction into theories and methods of construction. The first series of lectures focus on:
1. The architecture of mass and of the wall.
2. The development of the frame.
3. The building envelope.

Lectures are reinforced by reading assignments intending to place the role of construction in a historical and theoretical context and to locate it in the realm of enlightened practice.

The second part of this course is the construction studio. Here the student is required—in a number of exercises that parallel the lecture sequence—to demonstrate through small but precise models their understanding of issues of wall, frame, and enclosure. This work is critiqued in the studio as it develops and concludes with a formal public review.

Arch 422 Architectural Design II

Prerequisite: 3+ student
Winter (6 credit hours)
The sequence continues in complexity as most or all of the term is focused on a single design problem. The primary emphasis is in the further development and reinforcement of knowledge, understanding, experience, and skill in all aspects of design communication: the analysis and design of an urban site, further comprehension of issues of context and complex building organization and design, and further experience in the application of building science skills.

Arch 423 (UP 423, NRE 370) Introduction to Urban and Environmental Planning

Prerequisite: None
Fall and Winter (3 credit hours)
This overview course explores urban and environmental planning issues and problems, and reviews the ways planners grapple with them. Speakers from within and outside of the University describe the content of the issues and state-of-the-art intervention programs and techniques. Topics covered

include the origins and history of urban planning, the legal aspects of planning, planning for sustainable development, metropolitan growth and urban sprawl, urban design, housing and real estate development, transportation planning, environmental planning, planning for open space, and historic preservation, brownfield redevelopment, waste management, and third world development.

Arch 425 Environmental Technology II

Prerequisite: Arch 315

Winter (3 credit hours)

This introductory course addresses human needs and comfort in relation to the natural and man-made environments. Specific topics include: daylighting and electrical lighting systems, building acoustics, code requirements for energy conservation, communication systems, and elevator systems.

Arch 427 Construction II

Prerequisite: Arch 317

Winter (3 credit hours)

The objective of this course is to expand the student's understanding of construction materials, to demonstrate that modern construction practice requires the assembly of many independent components, and to illustrate the relationship of the act of building to design intentions. The course consists of three sections: steel and concrete; enclosure materials and systems; and building case studies. Specific topics include heavy timber; steel sections and connections; cast in place and precast concrete; cladding and roofing; fire protection and compartmentation; and an introduction to building types including long span and high rise. Exercises based upon concrete and steel-framed buildings concentrate upon structural and enclosure systems at the scale of both building and the detail.

Arch 431 Computer Programming for Architects

Prerequisite: None

Fall (3 credit hours)

An introduction to programming environments and the C programming language. Material covered includes elementary program structuring, program logic, basic algorithms, interactive programming, data structures, debugging, and program documentation. Course material is presented in weekly lectures, programming assignments, and three exams.

Arch 432 Architectural Design III

Prerequisite: Arch 322 or 422

Fall (6 credit hours)

This is a studio course in which the knowledge, understanding, experience and skill gained in previous courses are integrated and translated into architectural solutions to satisfy given needs, conditions, and means. The primary emphasis is in the development of insight into the solution of building and environmental design problems: how they are studied (analysis), how they are approached and carried through (process), and how they are conceptualized and developed (synthesis). Assigned projects require the student to consider issues of human scale, human behavior, environmental responsibility, and building construction at a level of greater complexity than previously encountered.

Arch 442 Architectural Design IV

Prerequisite: Arch 432

Winter (6 credit hours)

A continuation of Arch 432, this course addresses problems of moderate complexity in a more thorough and comprehensive manner. The objectives are:

1. To provide experience in urban site analysis and design.
2. To gain further insight into the issues of contextualism in design.
3. To gain experience in multi-level building organization and design.
4. To apply knowledge of building science skills.
5. To reinforce skills in all aspects of design communications.

Most or all of the term is focused on a single design problem.

Arch 443 (UP 443) History of Urban Form

Prerequisite: None

Fall (3 credit hours)

The course offers a study of the historical development of the physical form of western cities from ancient times to the present. The course will deal primarily with European and North American cities under the following headings: Ancient and Classic, Medieval, Renaissance and Baroque, and Modern (nineteenth and twentieth centuries). Cities of Asia, Africa, and Latin America will be included where possible and applicable.

Arch 492 Architectural Design

Prerequisite: Year 4 standing

Spring (6 credit hours)

See Arch 432 and 442.

Arch 500 Student Organized Study

Prerequisite: Year 5 standing and permission of instructor
Fall and Winter (1–3 credit hours)
This omnibus course provides a vehicle for self-motivated organization and study by a group of students in specially identified areas pertinent to architecture which are not covered by other existing courses. Students contemplating using this vehicle should apply to the program chair—well in advance of the beginning of the term—in order to permit time for administrative review and assignment of faculty.

Arch 503 Special Topics in Architectural History

Prerequisite: Arch 323 or permission of instructor
Fall and Winter (1–3 credit hours)
This course in architectural history provides a vehicle for either:

1. A topic being explored by a member of the architectural history faculty, with the possibility of subsequent conversion into a regular course offering.
2. A course capitalizing on the particular interests and abilities of a visiting faculty member in architectural history.

Arch 509 Experimental Course

Prerequisite: Year 5 standing and permission of instructor
Fall and Winter (1–3 credit hours)
This omnibus course provides a vehicle for either:

1. Subject material offered for the first time on a "trial run" basis with the intention of its subsequent acceptance as a regular course offering.
2. A "one time only" course offering centered on the particular interests and abilities of a visiting faculty member.

Arch 513 Social Change and the Architect

Prerequisite: Year 5 standing or permission of instructor
Fall (3 credit hours)
This seminar on professional leadership focuses broadly on the prevailing practice and teaching of architecture in contemporary American society. Organized around topical issues of diversity in design, designer values, and equity of access to environment-shaping resources, all discussion is aimed at clarifying the designer's own personal convictions about people and designed environments.

Arch 514 Frame Structures

Prerequisite: Arch 324

Fall (3 credit hours)

This course provides an understanding of the behavior and strength of framed structures such as portal frames, arches, trusses, and grids as well as an introduction to non-linear behavior. Their behavior is explored through the use of computer programs where students learn to prepare input data, analyze the structures, and use materials design post processors to evaluate the results, including model building and laboratory testing.

Arch 515 Advanced Architectural Acoustics

Prerequisite: Arch 535 or permission of instructor

Fall (3 credit hours)

This comprehensive study of architectural acoustics recognizes specific problems related to music, speech, and noise control in buildings. Included are the use of modern acoustical instrumentation, the use of current technical literature, and discussion of acoustically important buildings, electronic acoustical systems, and current topics in architectural acoustics.

Arch 516 Architectural Representation

Prerequisites: Year 5 standing

Fall (3 credit hours)

This course focuses on the development and techniques of architectural representation. Modes of representation are not simply neutral depiction but construct a proposition of architecture. Through investigating potentials within the forms and conventions of representation, this course examines and strengthens the relationship between drawing, model, and architectural intention. The course will be broken into two primary and interrelated parts:

1. Development and Theories of Architectural Representation (Lecture)
2. Drawing Methods (Studio Workshop)

Arch 517 (UP 613) Architect/Planner as Developer

Prerequisite: Graduate standing

Fall (3 credit hours)

This lecture/seminar course focuses on the knowledge and skills associated with the planner/architect working as, or with, a real estate developer in the U.S. The emphasis is on the integration of planning, marketing, site analysis, development regulation, and financial analysis with site design. While the project involves a medium density residential development, methods applicable to office projects are covered as well. Microcomputers are used—previous computer or design experience is not required.

Arch 518 Renaissance Architecture

Prerequisite: Arch 323 or permission of instructor
Alternate Fall Terms (3 credit hours)
The course examines the architecture of the Renaissance—the buildings and cities of the fifteenth and sixteenth centuries in Italy, France, and England. They will be discussed in relationship to contemporary theoretical writings, addressing issues of function, structure, and beauty, as well as in relationship to the cultural context of the Renaissance, including philosophical, religious, political, economic, and environmental factors.

Arch 519 (UP 519) Principles and Practice of Urban Design I

Prerequisite: Graduate standing or permission of instructor
Fall (3 credit hours)
The seminar is designed as a critical and collective inquiry into theories of urban design in order to develop an in-depth, interdisciplinary approach toward a more meaningful urban design for the future. Through a series of readings, discussions, case studies, presentations, and research work, students focus on deficiencies and opportunities in current urban design approaches, and formulate their own perspectives and strategies of urban form intervention, based on a critical understanding of the fundamental nature of cities versus the nature of thinking in the field of urban design.

Arch 521 CAD Fundamentals II

Prerequisites: Arch 411 or permission of instructor
Fall and Winter (1–3 credit hours)
This course is a continuation of Arch 411. It is intended for those who wish to learn how to use commercial CAD software for the creation, measuring, rendering, and animation of three-dimensional models. The student will gain an advanced knowledge of AutoCAD and a good working knowledge of 3D Studio MAX and form•Z. Course objectives are accomplished through lectures and labs, readings, and exercises. Topics covered include isometric drawing, wireframe modeling, surface modeling, solid modeling, lights, cameras, rendering, material and texture mapping, and animation. Course software may vary as new commercial programs become available.

Arch 523 Theories of Meaning in Contemporary Architecture

Prerequisites: Year 5 standing or permission of instructor
Winter (3 credit hours)
The objective of this seminar is to develop a broad understanding of the major issues and concepts that have informed architectural theory since World War II and especially since 1960. Particular attention is given to analyzing the variety of ways in which many contemporary architects intentionally attempt to manipulate the meanings perceived in their buildings.

Arch 524 Surface Structures

Prerequisite: Arch 324

Winter (3 credit hours)

This course provides an understanding of the behavior and strength of continuous surface structures such as plates, grids, and shells, including an introduction to fabric structures. Their behavior is explored through the use of computer programs where the students learn to prepare input data through CAD and preprocessors as well as analyze the structures using different materials, including model building and laboratory testing.

Arch 525 Computer Applications in Environmental Technology

Prerequisite: Year 5 standing or permission of instructor

Fall (3 credit hours)

The focus of this course is the application of computers in building technology design. The course provides an understanding of environmental design methods through the use of commercial and newly-developed computer programs. State-of-the-art thermal, lighting and acoustical analysis models are introduced. The application of these models in environmental system design is explored through case studies.

Arch 526 (UP 526) Sociocultural Issues in Planning and Architecture

Prerequisites: None

Fall (3 credit hours)

The central premise of this class is that urban design—the practice of shaping the built environment—is a socially and culturally engaged process. In light of this, social and cultural issues are as significant to planning and design processes as are issues of aesthetics, order, and form. This course focuses on the sociocultural effects and implications of architectural design and urban planning—at both the theoretical and site-specific levels.

Arch 527 Introduction to Building Economics

Prerequisite: Junior standing

Fall (3 credit hours)

The course offers an overview of existing building cost analysis methods as used by design professionals throughout the design process and the investigation of emerging methods of cost analysis that are likely to be used in the future. The student will:

1. Be introduced to sources of historical cost data and cost indices and to developments in computer-aided cost estimating and cost analysis.
2. Obtain a sensitivity for the relative importance of the many factors influencing the cost and value of buildings.
3. Gain practical experience assessing building value at various stages in the design process (real estate feasibility analysis, cost estimating, and life-cycle cost analysis).

Arch 528 Baroque Architecture

Prerequisite: Arch 323 or permission of instructor
Alternate Fall Terms (3 credit hours)
The course examines the architecture of the Baroque period—the buildings and cities of the late sixteenth to the mid-eighteenth centuries in Italy, France, England, and Central Europe. They will be discussed in relationship to contemporary theoretical writings, addressing issues of function, structure, and beauty, as well as in relationship to the cultural context of the Baroque period, including philosophical, religious, political, economic, and environmental factors.

Arch 529 (UP 620) Principles and Practice of Urban Design II

Prerequisite: Arch 519 or permission of instructor
Winter (3 credit hours)
This seminar focuses upon various themes in Urban Design and explores them in some depth. Some of the themes are predetermined by the instructor, others by the students enrolled in the seminar, on the advice and with the approval of the instructor. Examples of topics which may be examined in this course include neo-traditional town planning, edge cities, suburban design, future trends in urban design, art in urban design, vernacular architecture, recent urban design theories, urban design in practice, design review, downtowns, etc. Enrolled students are expected to undertake extensive reading and research outside the classroom and to be active participants in class presentations and discussions.

Arch 531 Networked Cities

Prerequisite: None
Fall (3 credit hours)
This course examines architecture's emerging relationship with the design of interactivity, interfaces, and information infrastructures. Working mainly in seminar format, in response to short weekly readings, participants debate issues in the past, present and future of technology-laden places. Biweekly lectures explore how places have generally emerged at crossovers between infrastructures. Biweekly storyboard projects interpret architecture and the city in terms of interaction design. A final project invites a situational design proposition. Emphasis is on how computing now pervades the physical world—however—and not on dematerialization. This course attempts to take apart popular misconceptions of cyberspace, and to reassert the value of embodied architecture in a digital economy.

Arch 533 Nineteenth Century Architecture

Prerequisite: Arch 323 or permission of instructor

Fall (3 credit hours)

The course offers a critical examination of the transformations in architectural theory and practice from the mid-eighteenth through the nineteenth century, with emphasis on elucidating the leading struggles for definition, meaning, and form in the architecture of this period. Also considered is the link between theory and practice; the relationship between conceptual and aesthetic as well as technical factors; and the cultural, economic, social, and political context out of which they evolved.

Arch 534 Reinforced Concrete Structures

Prerequisite: Arch 324

Fall (3 credit hours)

This course covers reinforced concrete in architectural structures including its properties in the design, manufacture, and erection of typical elements including prestressing design. Typical forms of construction are studied, including cast in place and precast concrete, foundations, and retaining walls. The use of the material is explored through case studies including the fabrication of model structures that are tested in the laboratory.

Arch 535 Case Studies in Environmental Technology

Prerequisite: Arch 425

Fall and Winter (3 credit hours)

In this course several buildings are studied with regard to the influence of environmental control systems and building services on their design. The course participants develop the building envelope, environmental control systems, and building services for a given project. Basic calculations for sizing the systems and services are performed.

Arch 537 (UP 537) Housing Systems

Prerequisite: None

Winter (3 credit hours)

The course will consider the design and development of new housing, the conservation and rehabilitation of existing housing, user needs, and the ways in which housing is related to and dependent on a larger community social, economic, and land use context. The primary objective of the course is to familiarize students with basic aspects of the housing system to enable them to function as effective future members of interdisciplinary teams doing housing planning and design.

Arch 541 2D CAD Programming

Prerequisite: Arch 431 or equivalent

Winter (3 credit hours)

This course introduces the student to the hardware, software, data structures, mathematics, and algorithms underlying computer graphics, computer modeling, and computer-aided design. Topics include: data structures for two-dimensional geometrics, transformations, interactive sketching of lines, operations, and measurements on lines and polygons. Course material is presented in weekly lectures, programming assignments, and exams.

Arch 543 Twentieth Century Architecture

Prerequisite: Arch 323 or permission of instructor

Winter (3 credit hours)

The course offers a critical examination of the transformations in architectural theory and practice from the late nineteenth through the twentieth century, with emphasis on elucidating the leading struggles for definition, meaning, and form in the architecture of this period. Also considered is the link between theory and practice; the relationship between conceptual and aesthetic as well as technical factors; and the cultural, economic, social, and political context out of which they evolved.

Arch 544 Wood Structures

Prerequisite: Arch 324

Winter (3 credit hours)

This course covers wood framing in architectural structures including its properties in the design, manufacture, and erection of typical elements including laminated timber. Typical forms of construction are studied, including methods of connection using nailing, bolting, and connectors. The use of the material is explored through case studies including the fabrication of model structures that are tested in the laboratory.

Arch 545 Advanced Lighting Design

Prerequisite: Year 5 standing or permission of instructor

Fall (3 credit hours)

Development of selected advanced, comprehensive lighting design techniques are offered in this course. The student is involved in a case study of lighting design with emphasis on the spatial aspects of the luminous environment and on individual research in an advanced area of study. An extensive bibliography of research reports is made available to students (model studies, graphic techniques, computer programs, daylighting methods, energy optimization, lighting of specific building types, and other topics). Presentations by various professional experts are included. End-of-term class sessions are devoted to student presentations.

Arch 551 Advanced Architectural Graphics

Prerequisite: Arch 411 (521 recommended) and Year 5 standing, or permission of instructor

Winter (3 credit hours)

This is a course in information design, with an emphasis on visual explanations of three-dimensional form. It is intended to follow courses in architectural representation and computer-aided design. In the first half of the semester, weekly exercises focus on fundamentals of graphic design, data reporting, and interactivity. The second half provides an opportunity to develop a navigable online document on a chosen architectural topic. As information designers, students learn to increase narrative structure and decrease visual noise in digital productions.

Arch 552, Arch 562, Arch 592 Architectural Design V, VI

Prerequisite: Year 5 standing

Arch 552—Fall; Arch 562—Winter; Arch 592—Spring (6 credit hours each)

These graduate-level studio design courses, characterized by architectural problems of increasing scale and complexity, usually one semester in length, require solutions that are thorough in their conception, development, and execution. Approximately twelve studio sections are offered in each regular term, each with a unique focus, but all dedicated to comprehensive architectural design. Examples include: aesthetic and symbolic issues, comprehensive building design, facilities planning, housing, community design, urban design, historic preservation and conservation, the architect as developer, structure, energy systems and conservation, professional practice and management, computer applications to design, and honors studio. Detailed course descriptions for each section are posted during registration. Many sections require that specific 500/600-level architecture lecture/seminar courses be taken prior to or concurrent with the design studio. Most sections are open to both Year 5 and Year 6 students.

Arch 553 American Architecture

Prerequisite: Arch 323 or permission of instructor

Alternate Fall Terms (3 credit hours)

The course explores the transformations in American architectural theory and practice from the early nineteenth century to the present, with emphasis on elucidating the leading struggles for definition, meaning, and form in the architecture of this period. Also considered is the link between theory and practice; the relationship between conceptual and aesthetic as well as technical factors; and the cultural, economic, social, and political context out of which they evolved.

Arch 554 Steel Structures

Prerequisite: Arch 324

Winter (3 credit hours)

This course covers constructional steel in architectural structures including its properties in the design, manufacture, and erection of typical elements including composite design. Typical forms of construction are studied, including methods of connection using bolting and welding. The use of the material is explored through case studies including the fabrication of model structures that are tested in the laboratory.

Arch 555 Building Systems and Energy Conservation

Prerequisite: Year 5 standing or permission of instructor

Fall (3 credit hours)

This course evaluates all building systems and services with regard to their influence on design. Of particular interest are: response to climatic factors and internal functions, integration of building fabric and environmental controls, choice of materials and construction processes, systems operation and energy consumption, energy conservation and management, and first costs versus life-cycle costs. Case studies of various building types and systems analyses are presented.

Arch 561 Building Programming

Prerequisite: Year 4 standing

Winter (3 credit hours)

This course offers a creative approach to the initial stages of building design in which facility requirements are established to achieve high levels of human, technical, economic, and symbolic performance. The course provides an ideological and methodological framework applicable to any type of problem and describes ways of conducting user group/architect communication using a variety of techniques for problem definition, information gathering, goal setting, demand analysis, environmental analysis, and evaluation.

Arch 562 Architectural Design VI

Prerequisite: Year 5 standing

Winter (6 credit hours)

See Arch 552.

Arch 563 Colonial/Post-Colonial Architecture and Urbanism

Prerequisite: Arch 323 or permission of instructor

Fall (3 credit hours)

The course examines a range of intellectual and material practices that have shaped the production of architecture and urban discourse in colonial and post-colonial settings. Topics include the production, circulation and reshaping of colonial knowledge(s); the import and export of architectural

ideas and styles between colonies and metropoles; material and cultural hybridity in colonial and post-colonial cities; and recent initiatives in theorizing subalternity, post-structuralism, and post-colonial discourse. The course is thematic and comparative and will draw on both "classic" theoretical formulations and analyses more firmly grounded in specific historical, social, and cultural contexts.

Arch 564 Advanced Materials Structures

Prerequisite: Arch 324

Fall (3 credit hours)

This course introduces the application and design of alternative materials such as glass, fabrics, aluminum, metal alloys, fiber composites, and laminates that are used structurally in architectural construction. Comparisons are made by studying their application through transfer technology in the automotive, aerospace, biomechanical, and other related industries. Their properties and structural behavior are explored qualitatively through digital design and material stress analysis and applications are studied through prototyping and laboratory testing.

Arch 565 Research in Environmental Technology

Prerequisite: Year 5 standing or permission of instructor

Fall (3 credit hours)

The focus of this course is the introduction to research methods in environmental technology. Qualitative and quantitative research results are studied with regard to their impact on architectural design. Each course participant undertakes an investigation in a selected area of environmental technology. The experimental approach may use physical modeling, computer simulation, or other appropriate methods.

Arch 567 (UP 567) Program/Built Environment Evaluation

Prerequisite: Year 5 standing or permission of instructor

Winter (3 credit hours)

This course is designed to give planners, architects, landscape architects, and interior designers an understanding of the value, methods, and objectives of systematically evaluating built environments. The course is organized in three parts:

1. The rationale for evaluation and the points of view from which evaluations can be made.
2. An introduction to methods of evaluation ranging from "quick and dirty" to highly systematic and an examination of the advantages and disadvantages of various techniques for understanding users of environments.
3. A review and critical appraisal of past evaluations of programs, buildings, neighborhoods, parks, and environmentally-related programs.

Arch 568 Russian Architecture

Prerequisite: Arch 323 or permission of instructor
Alternate Winter Terms (3 credit hours)
This course examines the leading tendencies in Russian architecture and allied art from the late 10th century through the Soviet period. Attention will be given to the influences of culture and ideology on the design process and on the transformation of native impulses and foreign influences in shaping the aims and styles of Russian architecture through the ages.

Arch 571 Digital Fabrication

Fall and Winter (3 credit hours)
Digital technology is transforming not only the way we conceive of and design buildings but through manufacturing advances in aerospace, automotive, and shipbuilding, it is transforming the way we manufacture and construct buildings. This course explores the crossover between computer-aided design and advanced fabrication techniques. Through a series of hands-on labs and small design projects students learn various software applications and computer-driven hardware tools as a means of introducing basic concepts of manufacturing and construction.

Arch 572 Architectural Theory and Criticism

Prerequisites: Year 5 standing or permission of instructor
Fall (3 credit hours)
This course examines contemporary architectural theory and criticism through the presentation and study of significant texts and buildings of the present and recent past. The goal of the course is to introduce and investigate the formal, technological, social, political, and economic debates at issue within the discipline. Students learn to evaluate and articulate the interactions between theory and practice, thereby enabling them to formulate and assess strategies for the making of architecture.

Arch 573 History of the Architect

Prerequisite: Arch 323 or permission of instructor
Alternate Winter Terms (3 credit hours)
The course investigates the history of the architect and the architectural profession in Western society from classical times to the present, emphasizing the role of the architect in relationship to the social, artistic, intellectual, and political attitudes of the time. Also considered is the architect's part in the development of ideas on planning, aesthetics, technology, and urban design.

Arch 575 Building Ecology

Prerequisite: Year 5 standing or permission of instructor
Fall (3 credit hours)
The objective of this course is to provide students with an understanding of ecological principles in architecture. Principles of life-cycle design, economy of resources and humanistic design are introduced and ecological factors associated with each of these principles are examined. Design strategies to increase environmental sustainability in buildings are investigated. An emphasis is given to how environmental factors (heat, light, and sound) influence thermal, visual, and acoustic qualities in built-in environments. Field trips to visit selected buildings to analyze their ecological characteristics comprise an important part of the course.

Arch 577 Design Development of Building Enclosure Systems

Prerequisite: Year 5 standing or permission of instructor
Winter (3 credit hours)
This course analyzes the design and construction of building enclosure systems from both an aesthetic and technical viewpoint. The objective is for the student to develop an in-depth understanding of design synthesis involved in the creative detailing of exterior walls, including the relationship of the enclosure system to the structural system. The student will select a significant building for analysis of the aesthetic and technical relationships between structure and building skin. An extensive photographic and graphic presentation is required.

Arch 581 Computer Visualization

Prerequisite: Arch 521 or permission of instructor
Winter (3 credit hours)
This course provides an investigation of computer-aided visualization techniques through the use of commercially available software for photo-realistic rendering, lighting simulation, animation, scanning, raster graphics, and virtual reality. The course also presents the mathematics, data structures, and algorithms of hidden surface removal, scan line and ray-tracing, and radiosity. The course does not cover topics in 3D computer modeling.

Arch 583 Professional Practice

Prerequisite: Year 5 standing
Fall and Winter (3 credit hours)
This course is intended to provide an opportunity to explore the essential elements of professional practice and related professions. It will equip the student with the fundamental knowledge and skills requisite to an understanding of, and participation in, the conduct of practice in the design profession. Salient areas of administration and management, including organization of the architectural office,

professional services of the architect, fee structures and fee management, contracts, and resource management/monitoring/marketing/project delivery are explored in lectures and through case problems.

Arch 585 Advanced Building Technology

Prerequisite: Year 5 standing or permission of instructor
Winter (3 credit hours)
The objective of this course is to explore state-of-the-art building and environmental technologies. Recent advancements in building technology promoting intelligence and automation are reviewed and explorations of a new generation of buildings and building technologies are pursued. The main topics of the course are:

1. Direction of technological advancements.
2. Building automation and intelligent building technologies.
3. Advanced lighting, daylighting, heating, ventilating, and air-conditioning systems.
4. Prototype buildings of the future.

Arch 588 History of Building Technology

Prerequisite: Arch 323 or permission of instructor
Alternate Winter Terms (3 credit hours)
The course investigates the history of building technology, primarily in the Western world, from ancient times to the present. Building technology is considered in terms of how it develops in relationship to society, science, and technology in general and in terms of how it serves, but also influences, the creation of architectural form.

Arch 589 Site Planning

Prerequisite: Year 5 standing
Fall and Winter (3–4 credit hours)
The primary goal of this course is to introduce the student of architecture to landscape architecture, site engineering, and design. The course is divided into two seven-week segments. The site engineering segment introduces and develops an understanding of site grading skills, the reasons for grading, the effect of grades on water drainage, and the use of storm drainage systems. The site planning segment introduces and develops an understanding of design synthesis by focusing on the constraints and opportunities provided by the landscape, as related to the shaping of architecture. Lectures and studio assignments emphasize the relationship between landscape architecture and architecture for the positive development of site and structure.

Arch 592 Architectural Design

Prerequisite: Year 5 standing
Spring (6 credit hours)
See Arch 552.

Arch 593 Tutorial Studies in Architectural History

Prerequisite: Year 5 standing, permission of instructor and approval of the program chair

Fall and Winter (1–3 credit hours)

This course provides an opportunity for a student to undertake individual, in-depth study of an architectural history topic under the direction of a member of the history faculty. The student shall determine a topic and program of study in consultation with and with the approval of the faculty member. No more than three credit hours of Arch 593 may apply towards the M.Arch., M.Sc., or Ph.D. degree.

Arch 597 Architectural Detailing

Prerequisites: Year 5 standing

Fall (3 credit hours)

The objective of this course is to explore the relationship between the ideas behind a project and the process of giving those ideas substance in architectural terms. The seminar explores "design" as a process which extends through to the completion of a building, where "detailing" is an integral part of the design process and in which the nature and assembly of the parts can be informed by or can inform the larger design issues of the building as a whole. The course does not attempt to develop a catalog of typical detail solutions to be applied, but rather stresses a way of observing, thinking about the issues presented in the seminar and exploring them in each student's individual projects.

Arch 600 Tutorial Studies in Architecture

Prerequisite: Year 5 standing, permission of instructor and approval of the program chair

Fall and Winter (1–3 credit hours)

This course provides an opportunity for a student to undertake individual, in-depth study under the direction of a member of the faculty. Areas of study may include extension and enhancement of material offered in regular graduate-level architecture courses or exploration in an area of professional interest not covered by existing electives. Course completion requirements may include special readings, research, conferences, papers, and documentation suitable to the selected area of study. The student shall identify the area of study and submit an Arch 600 Approval Form. The instructor shall establish requirements regarding the method and extent of documentation and the program chair shall critically review the proposal, all prior to registration. No more than six credit hours of Arch 600 may apply toward the M.Arch. degree.

Arch 603 Seminar in Architectural History

Prerequisite: 500 level architectural history course or permission of instructor

Fall and Winter (1–3 credit hours)

This seminar in architectural history provides a vehicle for either:

1. A topic being explored by a member of the architectural history faculty, with the possibility of subsequent conversion into a regular seminar offering.
2. A seminar capitalizing on the particular interests and abilities of a visiting faculty member in architectural history.

Arch 605 Environmental Design Simulation

Prerequisite: Year 5 standing or permission of instructor

Fall (3 credit hours)

The focus of this course is the application of simulation techniques in design. The course uses computers and thermal, lighting, daylighting, and acoustic facilities for physical modeling in the building technology laboratory as design tools. The use of these design tools will help in the understanding of fundamental principles involved in assessing the environment and creating new applications for simulation techniques.

Arch 611 3D CAD Programming

Prerequisite: Arch 541 or equivalent

Fall (3 credit hours)

This course is an extension of Arch 541. Topics covered include the generation of 3D wire-frame geometries, the generation of planar polyhedral solid models (through simple extrusion, complex extrusion, solid-of-revolution, and parametric primitive creation), perspective and parallel projections operations, and operations and measurements on 3D geometries. The student will write five or six assigned programs relating to the topics covered in lecture. Unlike 541, the data structures and algorithms will not be included in the problem statements.

Arch 613 New Roots for Environmental Design and Planning

Prerequisite: Graduate standing

Winter (3 credit hours)

An exploration of new foundations for the practice and teaching of architecture. Specifically, the course seeks to develop a broad, social-ethical-ecological framework for designing; a framework rooted in more holistic ways of thinking and one intended to extend our visions beyond the polemics of architectural “style.”

Arch 623 Seminar in Thresholds of Architectural Theory

Prerequisite: 500 level architectural history course or permission of instructor

Fall (3 credit hours)

The seminar examines selected writings by some of the seminal theoreticians of architecture—from Vitruvius to Robert Venturi—whose work proved instrumental in shaping the character of architectural thought and production both in their own time and in subsequent periods. In focusing upon the nature and role of ideas in the shaping of architecture, the course is concerned with comparing and contrasting the range of theoretical intentions that have been advanced over time and with examining the variety of ways in which those intentions have informed building design.

Arch 633 Seminar in Renaissance and Baroque Architecture

Prerequisite: Arch 518 or Arch 528 or permission of instructor

Winter (3 credit hours)

The seminar examines a particular topic in Renaissance and/or Baroque architecture. While the topic will determine the particular emphasis, the seminar will consider the relationships existing between architectural form and theoretical ideas, social, political, religious, and philosophical currents, as well as other issues specific to these historical periods.

Arch 643 Seminar in Modern Architecture

Prerequisite: Arch 543 or permission of instructor

Alternate Fall Terms (3 credit hours)

The seminar examines a particular topic in Modern architecture. While the topic will determine the particular emphasis, the seminar will consider an aspect of Modern architecture in relationship to social, political, and cultural currents, developments in theory, innovations in painting, sculpture, and technology, as well as other issues specific to this historical period.

Arch 653 Seminar in American Architecture

Prerequisite: Arch 553 or permission of instructor

Alternate Fall Terms (3 credit hours)

The seminar examines a particular topic in American architecture. While the topic will determine the particular emphasis, the seminar will consider an aspect of American architecture in relationship to developments abroad, social, political and cultural realities and aspirations, philosophical and theoretical concepts, as well as other issues specific to this geographic area.

Arch 660 Thesis Development Seminar

Prerequisite: Year 6 standing and permission of Thesis Committee
Fall (3 credit hours)
The thesis option is comprised of two components: a three-credit-hour seminar in the fall term and a six-credit-hour thesis studio in the winter term. The thesis option is an independent study opportunity for those students who are sufficiently mature and self-motivated to benefit from self-directed creative work. Arch 660 takes the form of a seminar plus individual tutorials. Each thesis student selects a faculty thesis advisor to work with throughout the year, as well as an outside consultant—a specialist with knowledge of the particular subject matter of the thesis. The prospective thesis student must present a statement of intent along with portfolio examples to a thesis committee for review and acceptance into the thesis option.

Arch 662 Thesis Studio

Prerequisite: Arch 660 and permission of Thesis Committee
Winter (6 credit hours)
This studio course constitutes the realization of the research and exploration initiated in Arch 660. The faculty thesis advisor selected in the fall term supervises the work. Faculty thesis advisors and the thesis coordinator provide tutorial assistance, critiques, and advice. The product of the thesis studio is a series of presentations and documentation of the thesis at the end of the winter term.

Arch 663 Seminar in Russian Avant-Garde Architecture

Prerequisite: Arch 543 or Arch 568 or permission of instructor
Alternate Winter Terms (3 credit hours)
The seminar examines avant-garde tendencies in Soviet architecture and art in the 1920s, including the Rationalist and Constructivist tendencies, with an inquiry into their roles in shaping the character of modern Soviet architectural theory and practice in the given period. At the same time, it is concerned with the larger historical, cultural, and artistic settings out of which these tendencies evolved, as well as with the analogous tendencies in Western art and architecture.

Arch 672, Arch 682, Arch 692 Architectural Design VII, VIII

Prerequisite: Year 6 standing
Arch 672—Fall; Arch 682—Winter; Arch 692—Spring (6 credit hours each)
These graduate-level studio design courses are characterized by architectural problems of increasing scale and complexity, usually one semester in length and require solutions that are thorough in their conception, development, and execution. Approximately twelve studio sections are offered in each regular term—each with a unique focus—but all dedicated to comprehensive architectural design. Examples include:

aesthetic and symbolic issues, comprehensive building design, facilities planning, housing, community design, urban design, historic preservation and conservation, the architect as developer, structure, energy systems and conservation, professional practice and management, computer applications to design, and honors studio. Detailed course descriptions for each section are posted during registration. Many sections require that specific 500/600 level architecture lecture/seminar courses be taken prior to or concurrent with the design studio. Most sections are open to both Year 5 and Year 6 students.

Arch 673 (UP 673) Historic Preservation and Urban Conservation

Prerequisite: Year 5 standing

Fall (3 credit hours)

This lecture/discussion course provides a comprehensive introduction to the problems and methods of historic preservation in urban, suburban, and rural environments. A conceptual framework is advanced for comprehending and managing the full gamut of problems and techniques encompassing the field of historic preservation today. Topics include the development of historic preservation in America, together with its European parallels and antecedents; the problems of urban, suburban, and rural preservation; techniques for developing, conducting, and evaluating comprehensive surveys of preservation resources; national, state, and local governmental preservation programs; legal and economic aspects of preservation; historic district zoning; and neighborhood preservation. Includes presentations by prominent individuals in government and preservation practice.

Arch 682 Architectural Design VIII

Prerequisite: Year 6 standing

Winter (6 credit hours)

See Arch 672.

Arch 683 Techniques of Historic Preservation and Restoration

Prerequisite: Year 5 standing

Winter (3 credit hours)

This course offers an introduction to the techniques used in conserving existing building resources through the preservation, restoration, and rehabilitation of significant and/or useful building fabric. The course focuses on the examination of buildings as systems, documenting and analyzing the components in terms of their historical evolution, architectural significance, and potential for continued use in restored or rehabilitated structures. Attention is paid to the examination of historic building methods and materials and the consideration of suitable approaches to the problems of working with these in contemporary preservation practice.

Arch 690 Architectural Curricular Practical Training

Prerequisite: International graduate student in good academic standing who has been enrolled on a full-time basis for at least two consecutive terms
Fall, Winter, Spring, Summer (1 credit hour)
The course is designed to allow the student to explore the practical and professional aspects of an architectural office. An Architecture Program faculty member must supervise this practical experience. The student does not have to be registered for the term of the employment. The course is to be elected as Pass/Fail.

Arch 692 Architectural Design

Prerequisite: Year 6 standing
Spring (6 credit hours)
See Arch 672.

Arch 693 Seminar in Colonial Architecture/Urbanism

Prerequisites: Arch 563 or permission of instructor
Winter (3 credit hours)
The course examines a particular topic in colonial urbanism and/or colonial architectural discourse. While the topic will determine the particular emphasis, the seminar will examine writings from diverse geographic and disciplinary bases, drawing on works in history, feminist theory, literary criticism, geography, cultural studies, anthropology, and architectural and urban history, among others. The seminar will explore how competing understandings of colonialism and its associated material culture(s) have helped chart new territory in social theory and architectural discourse.

Arch 710 Tutorial Studies

Prerequisites: M.S. student standing and permission of faculty advisor
Fall and Winter (1–3 credit hours)
This course is for students who are doing a series of directed readings under the supervision of a member of the Doctoral Program faculty.

Arch 712 Advanced Topics in Architectural Research

Prerequisites: M.S. or Ph.D. student standing or permission of instructor
Fall and Winter (3 credit hours)
This course provides advanced instruction in particular topic areas of architectural research. The course explores emerging areas of architectural research and/or techniques and methodologies that have impact on architectural research.

Arch 719 Supervised Research

Prerequisites: M.S. student standing and permission of faculty advisor
Fall and Winter (1–3 credit hours)
This course is for students who are conducting research under the direction of a member of the Doctoral Program faculty.

Arch 739 Independent Research

Prerequisite: M.S. student standing and permission of faculty advisor
Fall, Winter, Spring (1–6 credit hours)
This is an independent research project that is undertaken under the direction of the student's faculty advisor.

Arch 810 Tutorial Studies

Prerequisite: Ph.D. student standing and permission of faculty advisor
Fall and Winter (1–6 credit hours)
This course is for students who are doing a series of directed readings under the supervision of a member of the Doctoral Program faculty.

Arch 811 Orientation Seminar

Prerequisite: M.S. or Ph.D. student standing
Fall (1 credit hour)
This seminar provides a forum for the entire Doctoral Program, both students and faculty, for discussing the activities, ideas, and approaches of important researchers and scholars in the field of architecture.
It revolves around a series of presentations by invited speakers as well as their published work.

Arch 812 Theory in Architectural Research

Prerequisite: Ph.D. student standing or permission of instructor
Fall (3 credit hours)
This course provides a foundation for architectural research and scholarship by introducing students to the philosophy of knowledge with an emphasis on architecture and by presenting a critical review and evaluation of a broad range of theoretical and methodological perspectives within the field of architecture. It introduces the various approaches to the generation and acquisition of knowledge commonly used in the specialization areas in the Doctoral Program but at the same time explores perspectives that unify these areas into an integrated discipline.

Arch 813 Research Design and Methods in Architecture

Prerequisite: M.S. or Ph.D. student standing or permission of instructor
Fall and Winter (3 credit hours)
This course provides a foundation for architectural research and scholarship by introducing students to the methods and techniques used to investigate architecture and by presenting a critical review and evaluation

of these methods. Each section offered provides a specific focus relevant to one or more of the specialization areas within the Doctoral Program.

Arch 819 Supervised Research

Prerequisite: Ph.D. student standing and permission of faculty advisor
Fall and Winter (1–6 credit hours)
This course is for students who are conducting research under the direction of a member of the Doctoral Program faculty.

Arch 821 Orientation Seminar II

Prerequisite: Ph.D. student standing
Winter (1 credit hour)
This seminar provides a forum for the entire Doctoral Program, both students and faculty, for discussing the activities, ideas, and approaches of important researchers and scholars in the field of architecture. It revolves around a series of presentations by invited speakers as well as their published work.

Arch 823 Area Seminar: Architectural History and Theory
Arch 824 Area Seminar: Design Studies
Arch 825 Area Seminar: Building and Environmental Technology

Prerequisite: Arch 812 or permission of instructor
Winter (3 credit hours)
These three seminars each provide a forum for the advancement of knowledge and the discussion of issues of architectural research and scholarship relating specifically to one of the areas of the Doctoral Program, or, when sections are offered, to a sub-area. A seminar can include:

1. Readings and discussions of philosophies and research methods as well as critical review of research literature pertinent to a specialization area.
2. Discussion of research proposal preparation.
3. Presentation and discussion of student research.

Arch 839 Research Practicum

Prerequisite: Ph.D. student standing and permission of instructor
All terms (1–4 credit hours)
This is a research project that is accomplished in one of two ways: 1) in the context of a 4 credit hour independent study undertaken and completed under the supervision of the student's major advisor; 2) in the context of a 1 credit hour independent study, supervised by the student's major advisor and taken in conjunction with a 600- or higher level course of at least 3 credit hours. The student designs, undertakes, and completes a research project and produces a document of publishable quality within his/her specialization.

Arch 990 Dissertation/Precandidate

Prerequisite: Precandidate status
All terms (I-8 credit hours)
Dissertation research and structuring of dissertation topic.

Arch 993 (UP 993) Teaching Methods for GSIs

Prerequisite: Architecture GSI
Fall and Winter (I credit hour)
Methods and techniques of teaching are demonstrated to Graduate Student Instructors (GSIs) through seminars, workshops, and personal instruction by senior faculty. GSIs are taught the various modes of teaching used in the College and the types of instructional techniques they are expected to perform. Since most of the courses in the College are unique, senior faculty who use GSIs will independently instruct them on the special needs and methods used in their courses. Orientation seminars will also cover topics of ethics, deportment, College Rules, and other general areas of instruction that can affect GSI performance. No more than one credit hour of Arch 993 may apply toward the M.Arch. degree.

Arch 995 Dissertation/Candidate

Prerequisite: Candidate status
All terms (8 credit hours)
Preparation of doctoral dissertation and oral defense of thesis.

Urban Planning Undergraduate Courses

UP 263/RC 263 Energy & Environment

Prerequisite: None

Winter (4 credit hours)

This course introduces the concepts of energy and the environment, which then serve as a basis for discussion of pollution, scarcity of resources, technological impacts, and the future of humankind. Topics include a survey of non-renewable and renewable resources and current energy use patterns, nuclear power issues, and the prospectus for—and problems with—alternative energy scenarios.

UP 402 Undergraduate Experimental Course

Prerequisite: None

Fall and Winter (1–4 credit hours)

The topics for this course vary each semester. This course is intended to provide undergraduates with an introduction to urban studies and urban and regional planning through special topics.

UP 423 (Arch 423, Environ 370/NRE 370) Introduction to Urban and Environmental Planning

Prerequisite: None

Fall and Winter (3 credit hours)

This overview course explores urban and environmental planning issues and problems, and reviews the ways planners grapple with them. Speakers from within and outside of the University describe the content of the issues and state-of-the-art intervention programs and techniques. Topics covered include the origins and history of urban planning, the legal aspects of planning, planning for sustainable development, metropolitan growth and urban sprawl, urban design, housing and real estate development, transportation planning, environmental planning, planning for open space and historic preservation, brownfield redevelopment, waste management, and third world development.

UP 424 (UC 424) Cities and International Development

Prerequisite: None

Fall (3 credit hours)

A comparative study of the spatial, social, and conceptual evolution of cities around the world, and the implications of this for world development. These cities have important parallels as well as differences in their historical evolution and in their present and emerging impact on human, physical, social, and economic systems. The course will examine the differing historical role of cities in their regions cross-culturally and cross-nationally, with a view to assessing the implications of these for

world development. It will address the demographic, technological, and ideological changes that have resulted in unprecedented city growth during the last five "development decades." It will review attempts in industrialized and industrializing countries to shape the physical, human, and social dimensions of city systems and the speculations on—and utopian visions of—the emerging role of cities in the future.

UP 426 (CAAS 426) Urban Redevelopment and Social Justice: Can We Have Both? A Seminar For Future Professionals

Prerequisite: None

Fall (3 credit hours)

Taught from the perspective of a registered architect, this course is organized around topical issues of design, professionalism, and equity in urban resources development. Intended primarily for students with non-architectural backgrounds, the course seeks to provide a spirited exploration of the explicit (and subtle) connections between people, land, and power in our cities and the specific effects of these linkages upon contemporary urban rebuilding. In the main, our explorations are aimed at providing a broadened philosophical understanding of the "Who?" and "Why?" of contemporary urban redevelopment policies—particularly as such policies impact on the emerging "central city."

Urban Planning Graduate Courses

UP 406 (Geog 406) Introduction to Geographic Information Systems

Prerequisite: None

Fall (3 credit hours)

This course provides an introduction to Geographic Information Systems (GIS) technology and how it may be applied to solve urban planning problems. Emphasis is on basic principles and concepts of GIS, theory and tools of spatial analysis, and broad exposure to GIS applications such as land use, infrastructure, and environmental planning. Topics include the history of GIS, hardware and software requirements, spatial data types, data formats and sources, spatial analysis techniques, making maps and reports, and fundamentals of database design.

UP 443 (Arch 443) History of Urban Form

Prerequisite: None

Fall (3 credit hours)

This course offers a study of the historical development of the physical form of western cities from ancient times to the present. The course will deal primarily with European and North American cities under the following headings: Ancient and Classic, Medieval, Renaissance and Baroque, and Modern (nineteenth and twentieth centuries). Cities of Asia, Africa, and Latin America will be included where possible and applicable.

UP 492 (Environ 492/NRE 492) Environmental Justice: Domestic & International

Prerequisite: None

Fall (3 credit hours)

May not be repeated for credit.

This is primarily a lecture course. Information in the course includes:

1. the definition of environmental racism, environmental equity, environmental justice, and environmental advocacy,
2. key research issues in the field of environmental justice which include race vs. income, intent vs. non intent, pollution prevention vs. pollution control, cause and effect vs. association;
3. understanding energy and its relation with environmental justice,
4. the social structure of accumulation vs. the social structure of sustainability,
5. comparing issues of environmental justice within the U.S. and within developing countries; and
6. comparing the Basel Treaty and the Organization of African Unity's ban on the transport of toxic waste internationally.

UP 500 Professional Practice/Planning Research

Prerequisite: None

Fall (I credit hour)

This course is intended for first-year urban planning students and those in other professional schools. It is designed to introduce students to various aspects of planning practice, policy, and research as reflected in the work of professional planners and members of the urban and regional planning faculty.

UP 502 Environmental Planning: Issues and Concepts

Prerequisite: None

Fall (3 credit hours)

This is an introductory graduate-level course on the issues and concepts underlying environmental policy-making and planning, with a focus on the United States. Rather than concentrating on one particular type of planning method (e.g., cost-benefit analysis, impact assessment, site design), the principal goal of the course is to address value-based and analytical conflicts that are common to environmental policy-making and planning processes employed in the U.S. and abroad. The course is designed to: provide students the ability to recognize and tease apart the competing values and analytical assumptions made by various stake-holders in environmental policy-making and planning debates; consider how those debates are shaped by and play themselves out within the political, legal, and administrative processes that characterize environmental policy-making and planning in the U.S.; and familiarize students with the various forms of contemporary environmental policy-making and planning practice that they will likely encounter in their professional work.

UP 503 Introduction to Statistics

Prerequisite: None

Fall (2 credit hours, first half of semester)

This course is intended primarily for students who have no background in statistics and should be taken before UP 504. It introduces statistical concepts such as probability, descriptive statistics, tests of differences in populations, correlation, and linear regression. The course will familiarize students with computerized spreadsheets and statistical packages. The course meets for eight weeks.

UP 504 Quantitative Planning Methods

Prerequisite: UP 503, Statistics Course, or permission of instructor

Winter (3 credit hours)

This course introduces students to some of the quantitative methods and techniques used in planning practice and urban research. We will cover computer applications for data analysis, including some computer lab time

scheduled periodically through the semester. Analytic approaches include research design, multivariate regression, population forecasting, survey research, case study research, evaluation, and graphic data presentation. The emphasis is on methods in the context of planning and urban policy research, and matching the method to the problem.

UP 505 Fundamentals of Planning Practice

Prerequisite: None
Winter (3 credit hours)
Students are introduced to planning practice by generating a complete master plan during the course of the semester. The class teaches techniques associated with problem identification, assessment of issues, and formulation and articulation of final recommendations. There is an emphasis on strong written, graphic, and oral communication skills as a basis for critiquing class performance.

UP 507 Geographic Information Systems

Prerequisite: UP 406, a comparable introductory GIS course, or permission of instructor
Winter (3 credit hours)
This course enables students who have taken the introductory course (UP 406) to advance their skills in the use of Geographic Information Systems. Several advanced GIS techniques are presented to help students deepen their analytical capabilities using spatial data. Topics to be covered include network analysis (e.g., pipeline flows, waterways, travel routing, and costs, facility service areas, and traffic flow); spatial data analysis (e.g., raster modeling, interpolating point data, density analysis, and neighborhood statistics); and an introduction to visualizing spatial data through 3D modeling. The course also introduces students to several statistical and computational approaches to quantifying spatial patterns and identifying clusters and outliers in spatial data. The course also further deepens skills in applying GIS as a tool for studying urban problems. Students work on case study projects drawn from local communities.

UP 510 Public Economics for Urban Planning

Prerequisite: None
Fall (3 credit hours)
This is a course in the application of microeconomic modes of reasoning to problems that planners address. The course begins with an overview of the economist's analysis of the relationship between markets and efficiency, including concepts of supply and demand, elasticity, marginalism, opportunity costs, consumer surplus, market competition, and equilibrium. The course then delineates efficiency- and equity-based rationales for planning, and explores how economic modes of thinking can aid in the

design of planning interventions to alter market outcomes. This section of the course also considers strengths and weaknesses of both planning and market solutions in various contexts. Finally, the course applies economic modes of thinking to specific planning problems, developing tools of benefit-cost, cost-effectiveness and fiscal impact analysis, together with an exploration into the economics of transportation, pollution, and land use regulation.

UP 513 Legal Aspects of the Planning Process

Prerequisite: None

Fall (2–3 credit hours)

This course provides a survey of the legal context in which the planning process takes place. In a two-credit module required of students for the master's of urban planning degree, the constitutional and statutory sources, and limits of government power at the federal, state, and local levels are examined. Attention is given both to the traditional legal tools that planners have utilized, such as eminent domain, zoning, and subdivision controls, and to newer legal techniques, such as timed development and transfer of development rights. A one-credit module examines intergovernmental and regulatory issues that planners often confront. Examples are drawn from land use, environmental planning, and other areas. The course can be taken as a whole for 3 credits or students may enroll for the 2 credit hour required module. The student has an opportunity to become familiar with legal materials and with judicial and administrative procedures. A student who has taken the 2 credit hour module or its equivalent may register for the I credit hour module alone.

UP 517 (BA 517) Real Estate Essentials

Prerequisite: None

Fall (3 credit hours)

This survey course seeks to put architectural, urban planning, business, law, and public policy students together to understand how residential, office, retail, and research/industrial space gets built and why. Key topics include law, appraisal, finance, brokerage, property management, asset management, and development. The course will teach everyone how to analyze every type of real estate, from your own home purchase to a healthy or not-so-healthy downtown to an investment opportunity. You will learn how to recognize a good deal from a bad deal; how to rent, buy, or build your own commercial space; and how the key members of a development team depend upon one another for any type of real estate construction.

UP 518 Physical Planning Workshop

Prerequisite: None

Winter (4, 6 credit hours)

This course provides an overview of basic theory, principles, and skills involved in planning for the physical environment. The course is taught primarily in a studio format in which the students learn by undertaking real or applied problems. The objective of the course is to provide students with a basic understanding of physical and land use planning, and to provide them with the rudimentary skills—including graphic communication skills—necessary for producing a physical plan.

UP 519 (Arch 519) Principles and Practice of Urban Design

Prerequisite: Graduate standing or permission of instructor

Fall (3 credit hours)

The seminar is designed as a critical and collective inquiry into theories of urban design in order to develop an in-depth, interdisciplinary approach toward a more meaningful urban design for the future. Through a series of readings, discussions, case studies, presentations, and research work, students focus on deficiencies and opportunities in current urban design approaches, and formulate their own perspectives and strategies of urban form intervention, based on a critical understanding of the fundamental nature of cities versus the nature of thinking in the field of urban design.

UP 523 Regional Planning

Prerequisite: None

Fall (3 credit hours)

This course will provide an introduction to the history, tools, and future of regional planning. We explore the disparities between regional idealism and the actual practice of regional planning and management. We examine the lack of regional planning in the United States both as an example of American exceptionalism and as a myth. Emphasis will be on advantages and obstacles to regional planning for environmental protection, economic development, social justice, and land regulation

UP 526 (Arch 526) Sociocultural Issues in Planning and Architecture

Prerequisites: None

Fall (3 credit hours)

The central premise of this class is that urban design, the practice of shaping the built environment, is a socially and culturally engaged process. In light of this, social and cultural issues are as significant to planning and design processes as are issues of aesthetics, order, and form. This course focuses on the sociocultural effects and implications of urban planning and architectural design, at both the theoretical and site-specific levels.

UP 527 Infrastructure Planning in the US & Developing Countries

Prerequisite: Graduate standing

Winter (3 credit hours)

The course will take a comparative perspective in addressing infrastructure delivery issues in the U.S. and developing countries: What are the current theoretical perspectives on the cause of inadequate infrastructure, and on potential solutions to this problem? What are the potential roles of the state, private sector, and organizations of civil society in infrastructure delivery? What approaches are being attempted currently, and how successful have they been? Emphasis will be on water, sanitation, sewerage, and power. The course will draw heavily on case studies from Asia, Latin America, Africa, and the U.S. Class will be conducted in a seminar format, and students will also engage in in-class debates on controversial issues, including potential role of decentralization, privatization, and community-based approaches to infrastructure delivery. Students will also be required to write a term paper on a topic of their choosing.

UP 532 Sustainable Development: Resolving Economic and Environmental Conflicts

Prerequisite: No formal prerequisites, though some prior coursework in economic development and/or environmental planning/policy would be useful.

Winter (3 credit hours)

A growing body of evidence suggests that human populations world-wide are not living on the earth in ways that can be sustained indefinitely given current patterns of natural resource consumption, population growth, land development, and institutional arrangements. In response to this predicament, the concept of "sustainable development" has become prominent in popular and academic policy-making and planning debates over the past decade. Does the notion of sustainable development itself offer any useful guidance for making public policy and planning decisions, or is it merely an attractive oxymoron that different interests can agree on only at an abstract level? The goal of this class is to explore this question in depth. The course begins by considering the variety of ways in which our current lifestyles, locally and globally, are not sustainable, and then works through the concept of sustainable development from different vantage points: in terms of fundamental principles, scale (from global to local), and institutions, policies, and laws. Finally, the course addresses a variety of policy-making and planning prescriptions that have been offered and assesses whether and how those various prescriptions will likely work in practice. Working in groups, students test these theories of sustainability by applying them to selected client communities in Michigan.

UP 536 Physical Aspects of Housing: Ends and Means

Prerequisite: Graduate standing, or permission of instructor

Fall (3 credit hours)

The seminar is geared toward urban planning, public policy, architecture, urban design and business students who are interested in understanding the physical form of housing, its determinants, and its impacts. Topics include a range of elements that help determine the physical form of housing, including social, economic, political, and cultural factors. We will examine the nature of the designs and forms through various case studies of housing projects. Finally, students will study the current and potential impact of such housing projects on surrounding neighborhoods and urban areas. The seminar is structured around a series of lectures, readings, case studies, and discussions.

UP 537 (Arch 537) Housing Systems

Prerequisite: None

Winter (3 credit hours)

This class provides students with an understanding of how housing is developed and delivered, and the roles of policy and planning in housing. Specifically, it will address the following questions: How does housing relate to the larger community context? What economic, political, legal, and social forces shape the housing stock? What existing federal government, local government, and community-based initiatives exist to ensure an adequate housing stock? The focus will be on issues of housing affordability, and measures to ensure access to housing to disadvantaged groups such as the elderly, the disabled, and the homeless.

UP 538 Economic Development Planning

Prerequisite: None

Fall (3 credit hours)

This course offers an introduction to ways of thinking about the functioning of regional, urban, and local economies and the implications for planning economic development. The course examines regional and metropolitan industrial locations, processes of development and growth, international and inter-regional trade, labor markets, and migration. Close attention is given to how planning intervention can influence the location, speed, and character of growth.

UP 539 Methods for Economic Development Planning

Prerequisite: None

Winter (3 credit hours)

This course provides students with background in some of the methods used by economic development planners to understand a local economy and to identify directions for planning action. Students learn to use the methods, understand and critique reports that use the methods, and

assess the problems of a local economy. Methods include location quotients, shift-share analysis, input-output, retail trade area analysis, industry sector analysis, and others.

UP 540 Planning Theory

Prerequisite: None

Fall (3 credit hours)

This is a course in the theoretical foundations of planning. This course will stress basic tools that will help you to invent new solutions to new problems in the real world. We will use case studies of urban regions across the US for class discussion to both bring theory to life and allow us to test established planning theory against real urban problems. We will cover the historical foundations of planning, the classical theoretical paradigms of planning, an examination of the major roles played by practicing planners, and finally the application of those theories and roles to the case study and to larger problems of environmental limits, economic globalization, and increasing social disparity.

UP 560 (NRE 560) Behavior and Environment: The Psychology of Human-Environment Interaction

Fall (3 credit hours)

This course deals with two central themes. First, environmental problems are people problems, requiring an understanding of how people think, what they care about, and the conditions under which they behave most reasonably. Second, human behavior makes the most sense when studied in the context of the environment, both present and evolutionary. The course builds a model of human nature based upon research in the field of environmental psychology. The course will explore such topics as environmental perception and knowledge, preferred environments and coping with the failure of preference, quality of life, and mental attention fatigue and restoration. It then applies this model to such issues as common property resource management and the psychology of sustainability. The course is cross-disciplinary both in emphasis and student population with the disciplines of natural resource policy, planning and management, environmental education, conservation behavior, psychology, nursing, landscape architecture, and urban planning typically represented.

UP 565 (FIN 565) Real Estate Development

Prerequisite: FIN 318 or UP 517

Fall and Winter (3 credit hours)

This course provides a practical, realistic exposure to public or private development while understanding how marketing, design, financing, and environmental issues interrelate. This course is a complement to UP 613 (Architect/Planner as Developer) and to UP 517 (Real Estate Essentials).

In this course, students work as a team typically composed of MBA-Marketing-Oriented, MBA-Finance-Oriented, Architecture or Urban Planner and a third-year law student to research and develop a feasible plan for a relevant immediate development opportunity. Working on a local site using this project as a resource for other Arch/UP courses is encouraged.

UP 567 (Arch 567) Program/Built Environment Evaluation

Prerequisite: Graduate student standing or permission of instructor
Fall (3 credit hours)

This course is designed to give planners, architects, landscape architects, and interior designers an understanding of the value, methods, and objectives of systematically evaluating built environments. The course is organized in three parts:

1. The rationale for evaluation and the points of view from which evaluations can be made.
2. An introduction to methods of evaluation ranging from "quick and dirty" to highly systematic, and an examination of the advantages and disadvantages of various techniques for understanding users of environments.
3. A review and critical appraisal of past evaluations of programs, buildings, neighborhoods, parks, and environmentally-related programs.

UP 568 Real Estate and Urban Development

Prerequisite: None
Fall (3 credit hours)

This course examines the role of real estate in the formation of cities and regions drawing on research and concepts from urban and regional planning, political science, economics, geography, business, history, and other pertinent fields. The course looks at issues such as the historical emergence of real estate development, real estate growth "machines" and "regimes," real estate rent-seeking in the succession of land use, political economy theories of real estate abandonment and gentrification, the role of real estate in racial segregation, and the impact of globalization on real estate.

UP 572 (Geog 472) Transportation and Land Use Planning

Prerequisite: Permission of instructor
Winter (3 credit hours)

This course explores the interrelated systems of urban transportation and urban land use to discover principles and ideas that can be useful in developing plans that affect the two. The course covers four broad areas:

1. Transportation Planning History: What assumptions and approaches have guided domestic transportation planning?; How do transportation planning's roots and traditions affect current practice?; In what ways did transportation planning and technologies interact to produce evolving city forms?

2. Transportation and Land Use Theory: What frameworks have been developed to understand the interrelationships between transportation and land use, and how might these affect how we view potential transportation planning alternatives?
3. Transportation Planning Technique: Formal approaches to modeling domestic land use and transportation systems in the past few decades. We will explore these approaches as well as their limitations.
4. Urban Transportation Policy: Alternative definitions of "the transportation problem" can lead to different directions for policy. We will explore various contemporary transportation planning concerns and approaches to dealing with them.

UP 573 (NRE 573) Urban and Regional Theory

Prerequisite: None

Winter (3 credit hours)

This course surveys theories on the existence, size, location, and functioning of cities and their metropolitan areas in rich and poor regions of the world. It examines the development of urban form from the earliest settlements to the contemporary city, and it considers the political, economic, social, and cultural reasons for the formation and change of urban society. This seminar is intended to provide participants with an introduction to key principles and concepts of theories used by social scientists to explain urban growth and change in the broad field of urban theory, and to help students to recognize the distinctions between theories and understand their strengths and weaknesses when drawing upon them in planning practice. The course focuses on the relationship between political and economic processes and their joint influence on urban spatial form. It considers conventional treatments by planners, geographers, economists, and sociologists as well as the perspective of political economy. These theories are indispensable for understanding the origins of cities, the persistence of urban and regional spatial patterns, and the distinctive nature of urban problems.

UP 579 (NRE 579) Land Use Planning and Design

Prerequisite: None

Fall (3 credit hours)

Introduces problems, issues, and opportunities in land use planning, development and management. Covers basis of land use planning, determinants of land use allocation, visual resource management processes, and problem solving approaches. Develops skills in land use problem identification and analysis, graphic evaluation, and planning and design techniques.

UP 580 Learning by Comparison: First World/Third World Cities

Prerequisite: Graduate standing or permission of instructor
Winter (3 credit hours)
This interdisciplinary graduate seminar for master and doctoral students examines the purposes, methodologies, and benefits of comparing "first world" cities to "third world" cities and vice-versa, from the perspective of both scholars and practitioners. Readings, lectures, discussions, and case studies explore the potentials and pitfalls of international comparative analyses at the urban scale. Students learn to conduct such analyses in a relevant and rigorous manner by undertaking their own analyses structured around similar issues faced by different cities, including metropolitan governance, urban planning, social services and infrastructure, housing, finance and design, poverty alleviation, community development, and cross-cultural learning in an era of economic globalization.

UP 589 (PUBPOL 689) Equality in Public Policy

Prerequisite: None
Fall (3 credit hours)
Most of us expect the benefits and the burdens of public policies to be shared equitably. This course examines what that principle should mean, drawing on ideas from philosophy, law, and policy analysis. Topics will likely include racial profiling, affirmative action, environmental justice, transit equity, the CRA, and insurance discrimination.

UP 590 Expanded Horizons

Prerequisite: Graduate standing
Fall (I credit hour)
In this course, a city or urban region is selected for an intensive on-site field study. Meetings with various city and regional planning and planning-related professionals are held. In addition, tours of major urban development sites and programs are conducted. The trip is held early in the fall term. Students are expected to prepare a short paper reflecting on their experience upon their return. The trip is usually conducted over a three-day period at the end of the week.

UP 594 Major Concepts in American Planning 1900-2000

Prerequisite: None
Fall and Winter (3 credit hours)
This course examines the development of American city planning in the twentieth century including consideration of pre-1900 and non-U.S. influences. We will emphasize the physical design of cities over time, the role of policy, and ideas about urbanization. The course will include visual case studies of US cities to illustrate the patterns of urban planning. We will examine the impact of events, issues, strategies, and planning practice

throughout the century. The class is intended for planning students and architects; it is also open to students in non-planning fields such as natural resources, engineering, and the social sciences.

UP 598 (PUBPOL 692) Thinking About Crime

Prerequisite: Permission of instructor
Fall (3 credit hours)
As Chief of the New York City Police Department, William Bratton was fond of saying that the crime rate has the same meaning for a police department as profits have for a business—that the crime rate is the "bottom line" of policing. In this course we will question this common view of what goals should govern society's response to crime, exploring how concern with crime itself should and does compete with other aims like due process, retribution, and equity. It is this range of goals, not the single goal of crime reduction that both justifies public efforts to control crime and motivates important policy actors. These goals offer a framework for assessing crime control strategies, and we will develop it fully by reviewing classic and contemporary readings in philosophy and criminal justice. We will then use this framework to analyze current proposals for crime control in a variety of institutional settings, from the traditional criminal justice system (including sentencing policy, policing, corrections, and gun control) to increasingly important areas outside of it (including private-sector responses to crime, such as private security and gated communities; and social welfare responses, such as youth development).

UP 610 Fiscal Planning and Management

Prerequisite: Graduate standing and an economics course
Winter (2–3 credit hours)
Fiscal Planning and Management is designed to provide urban planners and related professionals with the methods of public financial management and analysis used in urban planning and public policy contexts. The course includes topics such as fiscal planning and management systems, budgeting, revenues, intergovernmental relations, debt financing, fiscal analysis, public investment analysis, and fiscal impact analysis. The course requires lecture and seminar sessions, independent reading, a short paper, and problem sets. The focus is on the practical and professional rather than the theoretical aspects of fiscal planning. The first part of the course is a two-credit module required of students for the master's of urban planning degree. The last part of the course continues with quantitative applications of the principles learned in the first part of the course. Students may enroll either for the 2-credit-hour portion or for the entire 3-credit-hour course. Students are assumed to have a basic understanding of microeconomics.

UP 613 (Arch 517) Architect/Planner as Developer

Prerequisite: Graduate standing

Winter (3 credit hours)

This lecture/seminar course focuses on the knowledge and skills associated with the planner/architect working as, or with, a real estate developer in the U.S. The emphasis is on the integration of planning, marketing, site analysis, development regulation, and financial analysis with site design. While the project involves a medium density residential development, methods applicable to office projects are covered as well. Previous computer or design experience is not required.

UP 614 Negotiation and Dispute Resolution

Prerequisite: None

Fall (1.5 credit hours, second half of semester)

This course is a seminar providing students the opportunity to become familiar with a variety of dispute resolution techniques, including negotiation, mediation, fact finding, arbitration, and litigation, and to participate in negotiation exercises related specifically to planning issues. These issues may range from one-to-one negotiation concerning such matters as establishing the sales price for a property to complex multi-party negotiations concerning the environmental and economic impacts of large-scale developments.

UP 631 (NRE 631) Land Use and Physical Planning Studio

Prerequisite: UP 518 and 519 or permission of instructor

Fall and Winter (6 credit hours)

This is a professional practice course emphasizing an interdisciplinary approach to the preservation, conservation, and design of urban areas. The course is designed to fulfill the requirements established by the Urban Design concentration guidelines as well as to act as one of the key studio courses for students pursuing the combined degree programs leading to dual master's degrees in architecture and urban planning and in urban planning and landscape architecture. Students from architecture, landscape architecture, and urban planning work individually and collaboratively on design problems, such as urban infill housing, urban space, and the design and preservation/conservation of urban areas.

UP 634 Integrative Field Experience

Prerequisite: UP 505 and permission of instructor

Fall and Winter (6 credit hours)

A one- or two-term capstone experience involving second-year students working directly with community-based organizations in urban neighborhoods and planning districts in Detroit. Following general introduction and orientation to the study area and issues, students form small groups to work intensively on projects in collaboration with neighborhood leaders

and residents in improving their situation. Presentations will be made at community meetings in early December and late April.

UP 650 Advanced Urban Theory

Prerequisite: UP 540 or permission of instructor

Fall (3 credit hours)

This is an intensive reading seminar on contemporary conceptual challenges in planning and urban development, with an emphasis on urban intellectual history and critical social theory. It is intended for both doctoral students and master's students interested in deepening their understanding of ideas in planning, urban theory, and urban history. Themes may include: the rise of twentieth century planning thought in its broader social context; urban political economy; modernism and the failure of social engineering; postmodernism and the privatization of public space; suburbanization, regionalism, and new urbanism; the impact of technological innovation on cities; networks and the information city; globalization and the persistence of the local culture; utopianism; and competing visions of the market and the state.

UP 651 (SW 651) Planning for Organizational and Community Change

Prerequisite: None

Fall (3 credit hours)

This course examines social planning at the community level. Social planning is a process to develop plans, policies, and programs related to human services. The course analyzes historical trends and changing contexts, major models and practitioner roles, alternative strategies and methods, and ethical dimensions of practice. It recognizes sociopolitical change and develops skills in several stages of planning. It emphasizes issues of the poor, minorities, and women.

UP 652 (PUBPOL 652) Housing and Community Development: Concepts and History

Prerequisite: None

Winter (3 credit hours)

This seminar develops a framework for crafting sensible housing and community development strategies. Several key goals of the field will be investigated including affordability, quality of life, community, and empowerment. Important eras in housing and community development history will be reviewed in order to understand how the field's goals have evolved over time. Studies will focus on the organizational, political, and economic challenges that face housing and community development and investigation of practical strategies for coping with them. Ideas developed during the seminar will be applied to several current debates about the nation's housing and community development agenda.

UP 654 (SW 654) Concepts and Techniques of Community Participation

Prerequisite: None

Winter (3 credit hours)

This course examines concepts and techniques of citizen participation in public policy, planning, and administration. It analyzes the political economy of participation; selected strategies and skills; and new and emergent techniques to involve people in decisions from neighborhood to nation. Emphasis is placed on promoting participation of economically disadvantaged people, African-Americans, women, and other groups in multicultural communities. Course responsibilities include critical analysis of recent research and practice, experiential exercises, and in-depth student-selected study of participation in an actual organization or community in the field.

UP 655 (SW655) Neighborhood Planning

Prerequisite: None

Fall (3 credit hours)

The course focuses on concepts and issues that characterize community planning for neighborhoods and explores interdisciplinary approaches to neighborhood analysis and intervention. The initiatives of community development corporations, city agencies, and the federal government are examined through lectures, readings, and guest speakers. The central questions the course examines are: Why do neighborhoods experience prosperity or decline? Which approaches (e.g., economic development, urban design, social service delivery, housing rehabilitation, community organizing, and empowerment) are likely to be most effective in revitalizing neighborhoods? How do we assess existing approaches to neighborhood revitalization? Emphasis is placed on discovering appropriate information sources, learning to ask relevant planning questions and formulating program alternatives and recommendations.

UP 658 Urban and Regional Planning in Developing Countries

Prerequisite: None

Fall (3 credit hours)

This course is designed to emphasize the theories that underlie planning interventions in countries that are newly industrialized or industrializing. Countries such as India, Jamaica, Malaysia, Guatemala, China, Thailand, Tanzania, Hong Kong, Venezuela, and Egypt, varying in size and historical antecedent, will be used for drawing illustrative case studies. The demographic, technological, and ideological changes that have resulted in unprecedented population growth and migration during the development decades will be reviewed. Responses to migration, housing scarcity, need for physical and social infrastructure, for jobs, and amenities will be studied.

UP 659 Gender and Development

Prerequisite: UP 658 or permission of instructor

Fall (3 credit hours)

This is a research seminar that engages students in inquiry of issues related to Third World women's development. A cross-cultural, interdisciplinary, comparative discussion is envisioned which addresses economic and social processes that perpetuate gender inequalities. A major objective of the seminar is to encourage participants to make connections between theory and case evidence; to become conversant with recent literature in the field of development and in related disciplines; and to promote gender research that produces real-world solutions grounded in theory. Issues to be addressed include gender and housing, technology, employment, micro-enterprise, and access to resources and power. Students are encouraged to provide feedback on their research interests.

UP 671 Public Policy and Transportation

Prerequisite: Graduate standing

Winter (3 credit hours)

This course examines surface transportation from a broad public policy perspective, providing an overview of transportation policy and planning. The federal government's role in transportation has changed significantly in the past decade, placing new mandates on the transportation planning profession that include enhanced attention to air quality and other non-mobility concerns such as promoting broader public participation, preserving the environment, and ensuring social equity. The course investigates this changing landscape for transportation planning and its implications for the relationships between federal, state, regional, and local authorities, mostly in the U.S. context but with some applications to developing countries. By introducing the principal laws and regulations that govern transportation planning decisions and by analyzing the most critical issues facing planners today, the course aims to help students develop creative and informed approaches to the techniques of transportation planning and the implementation of policies and regulations that serve broader values and goals. It encourages critical thinking about transportation decisions—the politics behind them, their ethical implications, and their effectiveness at achieving their planning objectives. Other objectives are to become familiar with data sources and methods with an appreciation for the strengths and weaknesses of common analytical techniques; to gain skills in reading transportation plans and policy documents; and to improve skills in writing and speaking about transportation issues.

UP 673 (Arch 673) Historic Preservation and Urban Conservation

Prerequisite: Graduate standing or permission of instructor
Fall (3 credit hours)
This lecture/discussion course provides a comprehensive introduction to the problems and methods of historic preservation in urban, suburban, and rural environments. A conceptual framework is advanced for comprehending and managing the full gamut of problems and technical aspects encompassing the field of historic preservation today. Topics include the development of historic preservation in America, together with its European parallels and antecedents; the problems of urban, suburban, and rural preservation; techniques for developing, conducting, and evaluating comprehensive surveys of preservation resources; national, state, and local governmental preservation programs; legal and economic aspects of preservation; historic district zoning and neighborhood preservation. Includes presentations by prominent individuals in government and preservation practice.

UP 680, UP 681, UP 682, UP 683 Directed Study

Prerequisite: Permission of instructor
UP 680—Fall; UP 681—Winter; UP 682-Spring; UP 683—Summer
(1–4 credit hours each)
A directed study is an original investigation into a planning problem. The subject for investigation will be selected by the student contingent on faculty advisor approval. NOTE: No more than 8 credit hours are counted toward the degree. Ph.D. pre-candidates may also take UP 680/681 (1–4 credit hours) as independent/directed study with a supervising URP faculty member in order to get in-depth background in subjects not covered in classes—usually as they prepare for exams.

UP 690, UP 692, UP 694 Community Development Fieldwork

Prerequisite: Permission of instructor
UP 690—Fall; UP 692—Winter; UP 694—Spring/Summer
(1–4 credit hours each)
Community Development Fieldwork is work experience in planning situations. Under faculty supervision, students—individually and in teams—work for or give assistance to government agencies, commissions, and citizen groups. Sample projects include preparation of graphics for public hearings, data gathering for special reports (traffic impacts, potential markets for commercial development, etc.), survey research on specific issues, and advocating citizen interests. NOTE: No more than 8 credit hours are counted toward the degree.

UP 696, UP 697 Special Focus Workshop

Prerequisite: Permission of instructor

UP 696—Fall, Spring/Summer; UP 697—Winter (3 credit hours)

This workshop may be an intensive examination of a particular problem or topical area or the development of skills in using particular planning techniques. The course can be designed to accommodate unusual formats for time and location and to capitalize on available time of outside guest experts. The choice of subject varies from semester to semester and from year to year.

UP 733, UP 734 Planning Thesis/Professional Project

Prerequisite: Permission of instructor

UP 733—Fall; UP 734—Winter (6 credit hours total)

The thesis or professional project is limited to students pursuing a master's degree who are in their final year of study. It may be taken in lieu of UP 634. It offers students an opportunity to engage in an in-depth theoretical or empirical study, or a professional activity. Students normally work under the direction and guidance of a single faculty member and must submit—and secure approval of—a written proposal that describes in detail the proposed thesis and a timetable for completion.

UP 747 Technology and Planning

Prerequisite: None

Fall (3 credit hours)

This seminar will focus on modern technologies (e.g., energy, communications, transportation, computers), their potential future innovations, and policy-related impacts on the urban environment. Another goal for this course is to assist doctoral students in defining a technology-based dissertation in planning, education, public policy, or other policy-related program. Another goal would be to expose students of technology to the potential planning implications technology may have on human settlements.

UP 830 U.T.E.P. Core Seminar

Prerequisite: Doctoral student (or permission of instructor)

Fall (3 credit hours)

The seminar explores issues of planning theory and ethics through the perspectives of Urban + Regional Planning and affiliated faculty.

The seminar serves as an introduction to urban and regional planning academia for first year doctoral students.

UP 835 U.T.E.P. Research Seminar

Prerequisite: Permission of instructor
Fall and Winter (1–4 credit hours; for a total of 4 credits)
This year-long seminar has three objectives. First, it exposes students to various approaches to research related to planning. Second, it enables students to formulate and test out researchable topics among faculty and student peers. Finally, it gives students experience in developing an appropriate research design, in executing the research, and in formally presenting it to an audience of faculty and students at U.T.E.P.'s April symposium.

UP 990 U.T.E.P. Dissertation—Pre-candidate

Prerequisite: Election for dissertation work by doctoral student not yet admitted as a Candidate
Fall, Winter, Spring/Summer (1–8 credit hours each);
Spring, Summer (1–4 credit hours each)

UP 993 (Arch 993) Teaching Methods for GSIs

Prerequisite: Architecture or Urban Planning GSI
Fall and Winter (1 credit hour)
Methods and techniques of teaching are demonstrated to Graduate Student Instructors (GSIs) through seminars, workshops, and personal instruction by senior faculty. GSIs are taught the various modes of teaching used in the College and the types of instructional techniques they are expected to perform. Since most of the courses in the College are unique, senior faculty who use GSIs will independently instruct them on the special needs and methods used in their courses. Orientation seminars will also cover topics of ethics, deportment, College Rules, and other general areas of instruction that can affect GSI performance.

UP 995 U.T.E.P. Dissertation—Candidate

Prerequisite: Graduate School authorization for admission as a doctoral Candidate Fall, Winter, Spring/Summer (8 credit hours each); Spring, Summer (4 credit hours each)
NOTE: The defense of the dissertation (the final oral examinations) must be held under a full-term Candidacy enrollment period (8 credit hours).

NOTE: In addition to courses listed above, several courses are usually offered during the spring half-term, depending upon funding availability. For further information on these offerings, consult departmental announcements and current time schedules during March of each year.

Urban Design Courses

UD 712 Urban Design Studio I

Fall Term (6 credit hours)

The first studio applies selected issues, ideas, and theories to the design and development of a new community—typically on a greenfield site in metropolitan Detroit. Compact, mixed-use, mixed-income, walkable, and transit-oriented development will be emphasized within a socio-cultural, economic, and environmental context.

UD 713 (Arch 443, UP 443) History of Urban Form

Prerequisite: Graduate standing

Fall (3 credit hours)

The course offers a study of the historical development of the physical form of western cities from ancient times to the present. The course will deal primarily with European and North American cities under the following headings: Ancient and Classic, Medieval, Renaissance and Baroque, and Modern (nineteenth and twentieth centuries). Cities of Asia, Africa, and Latin America will be included where possible and applicable.

UD 719 Theories of Urban Design

Prerequisite: Graduate standing

Fall (3 credit hours)

The seminar is designed as a critical and collective inquiry into theories of urban design in order to develop an in-depth, interdisciplinary approach toward a more meaningful urban design for the future. Through a series of readings, discussions, case studies, presentations, and research work, students focus on deficiencies and opportunities in current urban design approaches, and formulate their own perspectives and strategies of urban form intervention, based on a critical understanding of the fundamental nature of cities versus the nature of thinking in the field of urban design.

UD 722 Urban Design Studio II

Winter Term (6 credit hours)

The second studio examines selected aspects of urban design and development—typically on an infill or brownfield site in Detroit. These aspects might include urban typology and morphology and urban design methodologies that utilize computer simulation techniques, community participation, research in environment and behavior or environmental sustainability, or real estate development practices. The annual Detroit urban design charrette provides a point of departure for the studio. The four- or five-day intensive workshop involves working on teams with distinguished guest design professionals as well as local practitioners and community representatives.

UD 723 Methodologies of Urban Design

(3 credit hours)

A review of urban design values, methods, and movements from the nineteenth century through the present. These include building covenants and codes, zoning (and incentive zoning), urban design guidelines, the City Beautiful, the Garden City, Modernism, garden suburb, urban renewal, historic preservation, and environmentalism. Seminar discussions and readings focus on New York City and its metropolitan area—among the world's great laboratories of urban design—and the international influences on their form and design. Seminar research papers and accompanying presentations analyze the visible and invisible forces behind, and influences upon contemporary examples of urban design drawn from around the world.

UD 729 Practices of Urban Design

(3 credit hours)

Urban design is practiced in many different ways. Utilizing case studies and invited practitioners, this course exposes students to selected design and development processes, such as issues of real estate practice and law, issues of professional accountability and values, public policy, economic feasibility, influences of political and financial institutions, zoning and covenants, infrastructure, traffic engineering, phasing of development, environmental impact analysis, and the regulatory system.

UD 732 Urban Design Studio III

Spring Term (6 credit hours)

The third studio is conducted either abroad—in order to expose students to urban design in international contexts, practices, and challenges—or in Michigan—in order to expose students to issues of retrofitting suburban, town or urban areas.

UD 739 Seminar

(3 credit hours)

Seminar integrated with UD 732 Urban Design Studio III exploring themes in urban design methodologies, practice, and history, with bearing on the studio project.