



Catalog Announcements - 2015-2016

School of Architecture and Planning



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Officers of Instruction

Faculty

Randall Ott, M.Arch., AIA

Dean, Professor

Ann Cederna, M.Arch.,AIA	Professor
Luis Eduardo Boza, M.Arch.	Associate Professor
Barry D. Yatt, B.Arch., FAIA	Professor
Patricia Andrasik, M.Arch., AIA, IIDA, LEED AP	Assistant Professor
Hollee Becker, M.Arch.	Associate Dean for Student Affairs, Assistant Professor
Julio Bermudez, Ph.D.	Associate Professor
Hazel R. Edwards, Ph.D.,AICP	Director MCRP Program, Associate Professor
Lavinia Fici Pasquina, M.Arch., RA (Italy)	Associate Professor
Christopher P. Grech, B.Arch., RIBA	Director MSSD Program, Associate Professor
Vytenis Gureckas, M.S.B.D., RA	Associate Professor
Miriam Gusevich, M.Arch.	Associate Professor
G. Bradley Guy, B.Arch. MSAS	Assistant Professor
Stanley I. Hallet, M.Arch., FAIA	Professor
Charles Hostovsky, Ph.D.	Assistant Professor
Eric J. Jenkins, M.Arch., M.Des.S., AIA	Associate Professor
J. Ronald Kabriel, M.Arch.	Assistant Professor
Julius S. Levine, B.S.CE., M.C.P., FAICP	Professor
Judith Meany, Ph.D., FAICP	Associate Dean for Academic Affairs, Clinical Associate Professor
Adnan Morshed, Ph.D.	Associate Professor
Theodore Naos, M.Arch.	Professor Emeritus
Walter D. Ramberg, B.Arch., AIA	Professor Emeritus
John V. Yanik, M.Arch., AIA	Professor Emeritus

Associates of the Faculty

David Dewane, M.Arch.	Clinical Assistant Professor
Matthew L. Geiss, M.Arch	Lecturer
William A. Jelen, M.Arch., AIA	Project Manager; Solar Decathlon, Direct; CUAdc,
Mark McInturff, B.Arch., FAIA	Lecturer
Iris Miller, M.Arch., ASLA	Lecturer
Travis L. Price III, M.Arch., FAIA	Lecturer
David Shove-Brown, B.Arch., AIA	Director: Experiences in Architecture, Lecturer

Rafael Vargas, M.Arch.	Lecturer
Timothy Bertschinger	Lecturer
Ming Hu	Lecturer
Fernando Iribarren	Lecturer
William Bonstra	Lecturer
Jui-Chen (Roger) Chang	Lecturer
George Dove, M.Arch.	Lecturer
Karl DuPuy	Lecturer
Hussan Elkhraz, M.Arch.	Lecturer
Eric Liebmann	Lecturer
Paul Totten, P.E. (MD, VA), LEED AP	Lecturer

Mission

CUA's School of Architecture and Planning attracts students from throughout the United States and the world who are aware of the school's long history and educational renown. The professional architecture program at CUA was established in 1911, and after nine decades its reputation is expressed in a continuing legacy of design excellence—early Beaux Arts prizewinners to contemporary AIA award-winning faculty work and student projects.

In CUA's School of Architecture and Planning, students are exposed to the foundational and the conventional, as well as to the experimental and unorthodox. Diverse theoretical perspectives, paradigms, project types from varied architects landscape architects, urban designers and planners become key elements in our various teaching/learning activities. Our full-time faculty, along with a distinguished array of adjuncts and visiting lecturers and studio critics drawn from the profession, provide our students with an excellent, stimulating context within which they pursue their learning.

Goals

Historically, the profession of architecture has placed the highest priority on the artful creation of place, incorporating the great Roman architect/engineer Vitruvius' three principles of firmness, commodity and delight. Consequently, the architect must be well versed in the arts, technically skilled, and possess a deep understanding of the human condition. Thus, the school seeks to impart a proper sense of ethics and a spirit of service to the community. The emphasis on these qualities gives professional training its distinctive character at The Catholic University of America.

The School of Architecture and Planning is dedicated to the professional education of those who will design, build and conserve the built environment, principally as architects and planners. Utilizing Washington and other metropolitan areas as design laboratories, the graduate program provides an enriching educational climate in which students investigate the realms of design, theory and building in the context of the world in which we live. Students are exposed to a diversity of architectural experiences through a choice of graduate concentrations that include Cultural Studies/Sacred Space, Design Technologies, Digital Media, Real Estate Development, and Urban Design.

Central to the graduate program is the design studio, where students pursue their architectural inquiries individually or in teams. Design studios are directed by faculty members who have extensive experience in both practice and teaching. Visiting critics whose professional experience is relevant to the studio projects are brought into the school to provide richness and diversity to the students' design education. The studio experience culminates in a design thesis. Supporting the studio experience are advanced courses in architecture, planning and related fields. Lectures, seminars and exhibitions are devised to introduce the student to the multitude of considerations faced by the practicing architect to reveal differing philosophies and attitudes toward architectural design. As in the studios, lecturers are invited from among the many outstanding professionals practicing in the Washington area to provide informal talks on their current work, teach or add their particular insights to the core courses.

Degree Programs

The Professional Degree

CUA offers several options for earning the Master of Architecture professional degree. The two-year M.Arch. program is intended for students with a four-year undergraduate preprofessional degree in architecture. Select students graduating from CUA with a four-year Bachelor of Science in Architecture may be eligible for advanced standing, thereby reducing graduate study from four semesters to three semesters. The three-year M.Arch. program is intended for students who hold an undergraduate degree in a field other than architecture. These Master of Architecture degree programs are fully accredited by the National Architectural Accrediting Board.

The Post-Professional Degree Program

The Master of Architectural Studies is offered to applicants who already hold a professional degree in architecture and wish to pursue further investigations in design or design-related topics. Students are offered an intensive curriculum in one of five areas of concentration: Cultural Studies/Sacred Space, Design Technologies, Digital Media, Real Estate Development, and Urban Design. The program requires a minimum of one-and-a-half years of advanced study tailored to the needs and interests of the individual.

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 U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a 6-year, 3-year, or 2-year term of accreditation, depending on the extent of its conformance with established educational standards.

Master's degree programs may consist of a preprofessional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the preprofessional degree is not, by itself, recognized as an accredited degree.

Location

CUA's location in Washington, D.C., puts students in touch with unparalleled professional and cultural resources. Its spacious campus lies within a 10- minute drive of the U.S. Capitol and the National Mall. Numerous national and international experts live and work in the vibrant and diverse metropolitan area and contribute to the graduate program each academic year.

The specialized expertise of these associates of the faculty allow the school to offer an outstanding array of graduate coursework. The school has had relationships with numerous Washington, D.C., cultural and artistic institutions, including the National Building Museum, the Library of Congress and others. In addition, the school's location offers it unparalleled access to many national chapter headquarters of various design-oriented organizations, such as The American Institute of Architects, AIA, the Association of Collegiate Schools of Architecture, ACSA, the National Architectural Accrediting Board, NAAB and the American Institute of Architecture Students, AIAS. The school has also over the last several years maintained a relationship with various embassies in the region, sponsoring cooperative lecture and exhibit programs with the Finnish embassy, the Swiss embassy, the Austrian embassy and others.

Faculty and Resources

Many of our faculty members are recognized as leaders in the design and professional realms with world-famous guest critics and lecturers augmenting the full-time teaching staff. Student-to-professor ratios are kept small to ensure that students receive intensive one-on-one critiques and advising from studio critics and professors.

Our award-winning facilities are housed in the original CUA gymnasium and provide a classic example of adaptive re-use at its best. Designed by a faculty member, the architecture center was conceived as a small city with "streets" filled with students and their work, a "piazza" for special exhibits and a "town hall" for lectures and meetings. In addition, students' needs are served by our library CAD lab and output room, visual resource center and fabrication lab, which includes wood and metalworking shops, two CO2 laser cutter and engraving systems, a 3D printer and a three-axis CNC milling machine.

Through the Consortium of Universities of the Washington Metropolitan Area, students may

earn credits from among the several other institutions of higher learning in the community.

Concentrations

The School of Architecture and Planning currently offers five areas of concentration available to students for more focused specialization during their graduate education. These are Cultural Studies/Sacred Space, Design Technologies, Digital Media, Real Estate Development, and Urban Practice.

Cultural Studies/Sacred Space

The pursuit of cultural studies and the investigation and design of sacred space is intrinsic to CUA's mission. This concentration affords students an opportunity to explore cultural studies and the related issues of settlement, geography and landscape. The studios and related seminars explore a variety of historic case studies, theoretical positions and architectural strategies that have been or can be taken when architects are obliged to intervene in arenas of great cultural context and, in particular, in the re-articulation of sacred space.

The dilemma of relating the exigencies of our "time" to the traditional forms and rituals of the past are only further complicated by a situation where once identifiable cultural groups have now been thrown into disjunction, discontinuity and disarray. Thus, the often irreconcilable debate between "natural state" and chaos, between nostalgia for the past and the "crisis of modernity," between critical regionalism and international style, become but a few of the issues the concentration examines. (Director: Julio Bermudez, Ph.D., assistant professor; e-mail: bermudez@cua.edu).

Design Technologies

Simultaneously investigated at various scales ranging from global/local ecologies to building and product development processes, this concentration considers advanced and innovative design technologies as catalytic tools for design inspiration and investigation. The Design Technologies concentration continually examines the transformative opportunities of emerging technologies during all phases of design, from conception through construction and far past completion. Interdisciplinary in nature, the concentration engages itself in emerging and innovative fields of inquiry and research collaborating with the profession as well as pre-established organization within the university, such as CUA Design Collaborative, CUAAd, and the Design Lab. The Design Technologies concentration comprises four separate yet interrelated components of specialization: Advanced Material Research and Theory, Computational Design and Morphology, Digital Fabrication and Design/Build, and Sustainable and Environmental Technologies and Theory. (Director: Luis Eduardo Boza, associate professor; tel: 202-319-6861; e-mail: boza@cua.edu).

Digital Media

The profession of architecture is challenged by digital technologies in many ways. Some of these technologies expand the way we create, understand and modify space, as well as the way we experience it. The use of digital technologies ultimately influences the way architects approach design, practice and build. Three-dimensional modeling and visualization software offer alternatives to the development of form and the outcome of the designer's "vision." Animation, rendering and special effects editing tools also influence the way a design is communicated and perceived. (Director: Lavinia Fici Pasquina, associate professor; tel: 202-319-6719; e-mail: ficipasquina@cua.edu).

Real Estate Development (Evening program)

Modern architecture practice encompasses a wide array of architecture design challenges with a growing emphasis on privately financed residential and commercial real estate development projects. Real estate development in the 21st century includes a broad range of projects including urban mixed use, suburban new towns and adaptive reuse of historic structures, all requiring design expertise. Practicing architects can significantly enhance the quality of built environment, while at the same time taking advantage of potential business opportunities to share in these market-driven forces through an educational grounding in the fundamentals of real estate development. (Director: Judith Meany, Ph.D., FAICP, clinical associate professor; tel: 202-319-5642; e-mail: meany@cua.edu).

Urban Practice

Urban design is the keystone that links architecture and planning. The spatial concerns of the architect and the public policy issues of the planner are brought together by the urban designer to create an implementable vision for the city that moves beyond the individual building and the limits of policies focused primarily on public health, welfare and safety. The

Urban Design concentration emphasizes the relationship of an individual project to the public realm. This concentration expands a graduate's design options to include opportunities in both the private and public sectors, here and abroad. (Director: Eric Jenkins, M.Arch., M.Des.S., AIA, associate professor; tel: 202-319-4315; e-mail: jenkinse@cua.edu).

Foreign Studies

The School of Architecture and Planning offers a variety of foreign study options for graduate students. To complement our undergraduate semester-long programs in Rome and Barcelona, Paris serves as the venue for the graduate students, as well as selected fourth year undergraduate students. All graduate students may participate in the 18-credit program. Utilizing various modern and historical sites, students are introduced to the interconnectedness of the public and private realms with issues of urban density, security, convenience and amenity. CUA students and faculty collaborate with their counterparts from local universities, as well as world-renowned architects based in Paris. The studio is augmented by travel, seminars and lectures by local faculty.

Our longest running foreign program, the Patrick Cardinal O'Boyle Summer Foreign Studies Program, is an offering exclusively reserved for graduate students. The program focuses on studio work in Rome and other parts of Italy, with additional travel to two other venues in and around Europe. Travel itineraries change from year to year to enable diverse faculty to plan trips around their past and present contacts and experiences. These programs are GPA-based and participating students earn 15 credits toward the professional degree. A seat in the Cardinal O'Boyle program can also be secured in an intensive design competition in the fourth-year of the CUA B.S. in Architecture program.

Each year two graduate students are selected to spend the fall semester studying at the Fondazione Architetto Augusto Rancilio in Milan, Italy. The students are awarded scholarships by the foundation and pursue independent research on a theme established by FAAR and CUA. Themes may include architectural history and theory, design, urban studies or technology. Participating students earn 15 credits toward the professional degree.

In addition to these programs, CUA offers many other opportunities for domestic and foreign travel.

Special Programs

Summer Institute for Architecture

Each summer, the School of Architecture and Planning conducts the Summer Institute for Architecture, during which numerous courses at both the undergraduate and graduate levels are offered. Most of the design studios are offered, as are most of the required technology courses. In addition, the school offers numerous courses in history of architecture, graphics, furniture design, landscape architecture and other related areas. The faculty consists of selected members of the School of Architecture and Planning and invited faculty from other institutions.

A component of the Summer Institute is the Jerusalem Studio. This program is composed of upper-level undergraduate and graduate-level students who take part in an intensive travel program to the ancient city of Jerusalem. After their travel, these students return to the university to complete a project assignment based on their investigations.

The Summer Institute accepts students from other academic units at The Catholic University of America, and from other institutions. Interested students should contact the office of the School of Architecture and Planning for further information and applications.

Experiences in Architecture

Each summer the School of Architecture and Planning conducts two three-week sessions for high school or college students who are interested in investigating the field of architecture as a possible career. The students are introduced to all aspects of the study and practice of architecture, from design and history to office practice. The students live on campus and work in the design studios alongside architecture students attending the Summer Institute. Interested students should contact the office of the School of Architecture and Planning for further information and applications.

Admissions

Policies are subject to change. Please consult the School of Architecture and Planning Web site at <http://architecture.cua.edu> for current policies and requirements.

The following are required for admission into all graduate programs:

A minimum GPA of 2.8 (out of a possible 4.0) in undergraduate studies

A completed application

Statement of purpose

Certified transcripts

Three letters of recommendation

Official GRE scores (minimum: 1000)

A portfolio demonstrating design excellence over a broad range of architectural and technical challenges is required for all applications to the two-year M.Arch. program and the postprofessional Master of Science in Architectural Studies.

Students applying to the three-year M.Arch. program must have completed two prerequisites for acceptance: pre-calculus math and an introductory course in physics emphasizing mechanics.

The application deadline for all programs is January 15.

Degree Requirements

Policies are subject to change. Please consult the School of Architecture and Planning Web site at <http://architecture.cua.edu> for current policies and requirements.

A minimum grade point average of 3.0 in graduate studies is required for graduation in all degree programs.

Master of Architecture (Two-Year Program)

The Program

Students accepted into this program are admitted as Master of Architecture degree candidates, but must complete any undergraduate design studio and professional and technical courses in which their background is deficient, in addition to the graduate course requirements. The academic and work background of each student entering the program in this category is thoroughly reviewed. Based on this review, a degree program will be individually tailored to fit the needs of the student. Students entering the program with professional experience might be allowed to skip certain classes, but the credits must be fulfilled with a program elective or by way of transferring credit for previously taken equivalents. If transfer credit is not applicable then the credits will have to be replaced by taking other courses offered by the school.

Program of Studies	Semester Hours
Semester 1	
ARCH 601 Architectural Design Themed Studio I	6
ARCH— Required course associated with the themed studio	3
ARCH 661 Digital Construction Documents	3
Concentration Elective	3
Semester 2	
ARCH 577 Advanced Theory of Architecture or approved equivalent	3
ARCH 503 Comprehensive Building Design Studio	6
ARCH 518 Comprehensive Studio Supplement	3
ARCH Concentration Elective	3
Semester 3	
ARCH 603 Architectural Design Themed Studio II	6
ARCH—Required course associated with the themed studio	3
ARCH—Concentration Elective	3

ARCH 600 Thesis Research	3
Semester 4	
ARCH 609 Thesis	9
ARCH 717 Practice Management	4
Free Elective	3
Total Credits	61

Students awarded advanced standing must meet with the associate dean for graduate studies to develop their program of studies. Students with advanced standing must complete 46 semester credit hours in design, history/theory, technology, planning and professional practice.

Students must achieve at least a 3.0 cumulative grade point average in order to fulfill the requirements for the degree. Students may be allowed to repeat courses to improve their standing. In such cases, the highest grade earned in those courses will be considered in determining academic standing.

Since a C grade is passing but marginal at the graduate level, C grades are permitted in a maximum of one-third of the courses required for the degree. A grade of C in studio courses is not acceptable; students who earn C grades may repeat only one studio course.

Master of Architecture (Three-Year Program)

The Program

Students accepted to this program must complete the graduate course requirements plus those basic architecture courses in which their background is deficient. The academic and work background of each student entering the program in this category will be thoroughly reviewed. Based on this review, a degree program will be tailored to fit the needs of the student. In most cases, the student can expect to be enrolled in both graduate and the basic courses at the same time. The design studio and the mathematics/technical courses are the heart of the curriculum and rely heavily on an extended sequence of prerequisites. Students will be placed in each sequence according to their academic background and experience.

Students will be advanced according to their demonstrated abilities. Summer school may be utilized to facilitate the student's advancement. Admission to the 600 level design studios will be on the basis of portfolio review and approval. Students entering the program with professional experience might be allowed to skip certain classes, but the credits must be fulfilled with a program elective or by way of transferring credit for previously taken equivalents.

Program of Studies	Semester Hours
ARCH 504 Intro to Design and Graphics (Summer Course)	6
Semester 1	
ARCH 501 Studio I	6
ARCH 621 Structures I	3
ARCH 715 Pre-Design	4
ARCH 635 History of Architecture I	3
ARCH 543 Basic Reading in Arch Theory	3
Semester 2	
ARCH 502 Studio II	6
ARCH 622 Structures II	3
ARCH 716 Designing Construction	4
ARCH 758 Environmental Systems I	3

ARCH 636 History of Architecture II	3
ARCH 515 Introduction to Digital Media	3
Semester 3	
ARCH 601 Architectural Design Themed Studio I	6
ARCH-Required course associated with the themed studio	3
ARCH 721 Structures III	3
ARCH 735 History of Architecture III (Modern)	3
ARCH 757 Environmental Systems II	3
ARCH 661 Digital Construction Documents	3
Semester 4	
ARCH 503 Studio III: Comp. Bldg Studio	6
ARCH 518 Comprehensive Building Design Supplement	3
ARCH-Concentration Elective	3
ARCH 577 Advanced Theory of Architecture or approved equivalent	3
Semester 5	
ARCH 603 Architectural Design Themed Studio II	6
ARCH-Required course associated with the themed studio	3
ARCH-Concentration Elective	3
ARCH 600 Thesis Research	3
Semester 6	
ARCH 609 Thesis Design	9
ARCH 717 Professional Practice	4
Total Credits	111

Students must achieve at least a 3.0 cumulative grade point average in order to fulfill the requirements for the degree. Students may be allowed to repeat courses to improve their standing. In such cases, the highest grade earned in those courses will be considered in determining academic standing.

Since a C grade is passing but marginal at the graduate level, C grades are permitted in a maximum of one-third of the courses required for the degree. A grade of C in studio courses is not acceptable; students who earn C grades may repeat only one studio course.

Master of Architectural Studies (One-and-a-half-Year Program)

Admission

Acceptance is dependent on overall academic performance as an undergraduate and graduate student, the applicant's specific design interests, and the strengths and ability of the faculty to serve those interests. In the admission review process, special attention is given to the comprehensive design portfolio, statement of intent, professional experience, any related research and publications, and pertinent references. Persons interested in this program are encouraged to discuss their academic goals with the graduate program adviser in advance of making a formal application.

Various areas of concentration are available in this degree program (refer to section on concentrations above).

Program of Studies	Semester Hours
ARCH 701 Master of Architectural Studies Themed Studio I	6

ARCH 702 Master of Architectural Studies Themed Studio II	6
ARCH 791 Thesis Field Work and Research	3
ARCH 795 Independent Study/Internship	3
ARCH 799 Master of Architectural Studies Thesis	9
ARCH-History/Theory Elective	3
ARCH-Program Electives (two)	6
Total Credits	36

Master of City + Regional Planning (M.C.R.P.)

Two Year, Professional degree

CUArch's Master of City and Regional Planning (MCRP) links design with policy to assist planners in the stewardship of the built, natural, and cultural environments. Building on the university's strong tradition of architecture programs, the MCRP curriculum prepares students with the foundation to become generalist planners and steward planners according to the CUArch mission of "Building Stewardship." To address the growing need for planning and design interventions that include environmental impacts, students in the City and Regional Planning program will explore various methods of creating better environments through the use of sustainable design practices and planning principles.

Located in the culturally and architecturally diverse Washington, DC, students in this program have the added benefit of exploring a wide variety of planning issues, interventions, and solutions as addressed in practice. This perspective is further extended to the region to understand planning interventions in the context of urban, suburban, and exurban locations.

Students may enroll simultaneously in the school's accredited Master of Architecture (M.Arch.) program and the Master of City and Regional Planning. As part of the joint degree program, students are able to obtain the two degrees sooner at an accelerated rate. The MCRP/M.Arch joint degree program requires a total of 94 semester hours of graduate credit. Completion of both degrees separately would require a total of 109 hours.

MCRP CURRICULUM
JOINT DEGREE MCRP/MARCH
JOINT DEGREE ADVANCE STANDING

Master of Science in Sustainable Design (M.S.S.D.)

Two Year, Professional degree

The MSSD program consists of 30 credit hours of coursework. Students can enroll on a full-time or part-time basis. The majority of courses are held after 6:30PM to accommodate working professionals. There are no maximum or minimum time requirements to complete the program. A twelve credit hours certificate is also available.

Joint Degree

Students may enroll simultaneously in the school's accredited Master of Architecture (M.Arch.) program and the Master of Science in Sustainable Design. This joint degree program allows students to obtain the two degrees at an accelerated rate. The MSSD/M.Arch joint degree program requires a total of 79 semester hours of graduate credit, opposed to 91 hours to complete both degrees independently.

MSSC CURRICULUM
JOINT DEGREE MSSD/MARCH

Master of Science in Facilities Management (M.S.F.M.)

Facilities Management combines the subfields of asset management and property management, and is closely related to human resources management and information technology management. It is a fast-growing profession, launched in the 1980s in response to the growing need for sustainable, secure, technologically-sophisticated buildings and the growing appreciation of the need to consider facilities in a business' strategic planning.

Increasingly, facilities are expected to be responsive to the work- and life-styles of those who work, live, or play in them while being energy- and water-efficient, cost-effective, well maintained, adaptable, and safe in the face of security concerns and natural disasters. Courses offered in this program are designed to prepare facility managers to serve the needs of commercial and institutional facilities with particular emphasis on governmental and private cultural, educational, religious, and military facilities such as embassies, schools, churches, and bases. The FM program takes a creative, holistic and strategic approach to facilities management, while reinforcing the importance of ethics and stewardship. It is interdisciplinary in nature and strongly supported by CUA's Schools of Professional Studies, Business & Economics, Engineering, Law, and Arts & Sciences.

Located in the nation's capital, with a mass-transit station immediately adjacent to campus makes access easy for practicing and aspiring facility managers working with the State Department, the General Services Administration, the Smithsonian Institution, the Pentagon, and the many private institutional and commercial organizations with a strong presence in Washington, DC. CUA FM is currently coordinating with multiple agencies, organizations, and corporations to facilitate enrollment by their employees. Those who are interested in applying are encouraged to contact the FM program director to discuss opportunities.

MSFM CURRICULUM

Master of Architecture (M. Arch. 2 or 3) + Master of Science in Facilities Management

Though not currently available, the FM program is in the process of establishing joint degree programs to include:

MSFM/M.Arch: For those interested in developing competency in building design and management. The Master of Architecture degree is fully accredited by the National Architectural Accreditation Board.

MSFM/MSSD (Master of Science in Sustainable Design): For those interested in developing competency in the design and management of sustainable facilities.

MSFM/MCRP: Particularly suited for those interested in planning and managing large corporate, university, or manufacturing campuses or military bases. The Master of City and Regional Planning degree is pursuing initial accreditation by the Planning Accreditation Board.

When enacted, students in any of these program will be allowed to count some courses toward satisfaction of both degree programs, reducing the total number of credits needed to complete the two degrees. More information will be posted as it becomes available.

Bachelor of Arts in Politics or Sociology and the Master of City and Regional Planning

Students enrolled in the Bachelor of Arts or Sciences in Politics or Sociology in the School of Arts and Sciences have the ability to begin taking classes towards the professional Master of City and Regional Planning (M.C.R.P.) through the School of Architecture and Planning as early as the spring semester of their Junior year. This unique interdisciplinary program allows students to work directly with faculty across campus to enhance their academic experience. Students must separately apply to both programs.

Much of what City or Urban Planners confront involves political processes that shape the human, natural and built environments. For the undergraduate major in politics, this joint degree arrangement instills the knowledge and skills to help communities envision their futures and to engage elected and appointed officials in the planning process of creating livable communities. Besides the issues of democracy, leadership, and political will, planners use Comprehensive Plans, zoning ordinances, and environmental regulations that impact the quality of life of stakeholders (i.e., residents, merchants, etc.). Elected officials make decisions about our communities using the framework that is created by the U.S. Constitution and established laws that not only govern a jurisdiction but also inform land development activities (as through the first, fifth, tenth, and fourteenth Amendments). Hence, this joint degree program is a natural link to the planning field which seeks to identify policies to promote equity and equality as well as social and environmental justice. Graduates of the joint B.A. in Politics + M.C.R.P. might develop urban policies for public agencies at the local, state, and federal levels (e.g. U.S. Housing and Urban Development, Environmental Protection Agency, Department of Transportation) as well as for organizations such as the Brookings Institute, the Council of Governments, or the World Bank.

Planning is also closely connected with the sociology curriculum since City Planners work with communities to address challenges of growth and change. One of the primary responsibilities of an Urban Planner is to research and intimately know the local population and its needs in order to determine the potential impacts planning decisions have on the population. The socio-economic, cultural and ethnic diversity of a community and rate of change in a population are just a few of the social trends that Planners routinely examine. Graduates of this focus now plan for aging baby-boomers in terms of mobility and housing choices; or they make recommendations about how communities can become more livable and sustainable. Planners routinely engage the public in order to develop a vision for a community that meets their aspirations and addresses their concerns. Graduates of the joint B.A. in Sociology + M.C.R.P. have a variety of options for employment in public, private, and non-profit organizations.

The joint B.A. in politics or sociology + M.C.R.P. program allows students to obtain the two degrees sooner than they could acquire each independently. Students interested in pursuing the joint B.A.+M.C.R.P. program should consult the appropriate program of study for tracking through the programs.

Students must comply with all requirements of the undergraduate degree and major as well as the graduate degree. All requirements for final comprehensive exams and thesis in these programs must be satisfied. Students must also obtain approval for electives by the Undergraduate Associate Dean of the School of Arts and Sciences and the M.C.R.P. Program Director and/or the Associate Dean for Graduate Studies of the School of Architecture and Planning.

Admissions Criteria:

Undergraduate students must have a minimum grade point average of 3.3 to be considered for the joint B.A. + M.C.R.P. program. Students must apply for and be accepted into the M.C.R.P. program by the end of the fall semester of their junior year.

Contact planningdegree@cua.edu

Certificate of Real Estate Development

Professional Certificate Program

As the largest architecture program in the region, The Catholic University of America's School of Architecture and Planning is the leader in offering a fully accredited professional architecture degree program for nontraditional evening students. This program makes it possible for a full-time working student to complete or enhance his or her professional education in the D.C. metropolitan area. Our school's location, adjacent to a Metro stop and minutes from Union Station, allows easy access for students and also allows for the participation of a wide array of experienced, professionally oriented faculty.

Modern architecture practice encompasses a wide array of architecture design challenges with a growing emphasis on privately financed residential and commercial real estate development projects. Real estate development in the 21st century includes a broad range of projects including urban mixed use, suburban new towns and adaptive reuse of historic structures, all requiring significant design expertise. Practicing architects can significantly enhance the quality of the built environment, while at the same time taking advantage of potential business opportunities to share in these market driven forces through an educational grounding in the fundamentals of real estate development.

The concentration in real estate development is designed to provide graduate students with a program of study that integrates architectural design with business, law, construction management and urban planning practices, all of which form the basis of modern real estate development. Students follow a rigorous program of architecture studios melding design considerations with real estate issues. The concentration provides an overview of the development process with an emphasis on understanding urban planning regulations, financial feasibility analysis, site and market analysis, architectural contract law, construction management and project financing. The faculty includes visiting architects whose practices focus on real estate development clients.

Certificate of Sustainable Design

12 Credit Hour Professional Certificate Program

In addition to the full 30-credit hour degree program (Master of Science in Sustainable Design), the School of Architecture and Planning offers a 12-credit hour Certificate in Sustainable Design.

This program was developed to offer a wider range of programs for adult learning within the school and allows students to embark on a shorter program of study to suit their circumstances. The choice of core courses allows students to select a "technical" (Systems and Simulation I and II*) or a "non-technical" (Sustainable Design Strategies, Ethics and Stewardship) track. Relevant electives are also offered.

Students enrolled in the certificate program can transfer to the full program should they wish to do so.

*The Systems and Simulations courses have course prerequisites. Certificate in Sustainable Design 12-credit hour program

Any three of the following core courses:

- Sustainable Design Strategies (3 credits)
- Systems + Simulation I (3 credits)
- Systems + Simulation II (3 credits)
- Ethics and Stewardship (3 credits)
- Materials and Assemblies (3 credits)
- + One elective (3 credits)

Other Information

Student Government and Professional Organizations

A number of student organizations offer opportunities for students to participate in the governance of the school and act as liaisons to professional organizations. Students of the school elect representatives to the Student Council, who, in turn, represent the student body at faculty meetings and on the University Student Council.

The school also offers student membership in the American Institute of Architecture Students and the Construction Specification Institute. Both organizations sponsor important events such as the annual job fair and professional conferences.

Advising

Once admitted to the School of Architecture and Planning, each student is assigned an academic adviser. Normally, the students remain with their assigned adviser for the duration of their program if possible. Given sufficient reason, the student may be reassigned to another adviser at the discretion of the associate dean. All students are required to see their advisers at least once a semester for pre-registration for the next semester's classes. Students are responsible for knowing the requirements of their specific

programs and for keeping track of their progress in working toward their degrees. However, students may see their adviser at any time during the academic year regarding their academic program and status.

Courses Offered

A full listing of graduate courses offered by the School of Architecture and Planning is found below. Consult [Cardinal Station](#) for additional information about courses and to determine course offerings by semester.

Course Catalog for Architecture and Planning

ARPL

500	Introduction to Design and Graphics	An introduction to design fundamentals and the basics of architectural communication, including drawing and model-making. The course will include studio, readings and discussions, lectures and field trips.
501	Architectural Design I	Analysis of function, form development, site analysis, the integration of simple structural systems and passive energy design strategies into architectural design, and the design of small to moderate building projects.
502	Architectural Design II	This course continues to explore design issues raised in ARPL 501 while introducing more complex studies of program, structure, site and material with advanced concepts of form and meaning of the built environment. Studio work is augmented by discussion of theory and history of architecture.
503	Field Study	This sketching course, held at one of CUA's overseas venues, sends students on weekly site visits to various architectural and urban sites, dating from antiquity to the present day, in the area where they are studying. They also go on several multi-day field trips to other cities and regions. Through sketching, analytic diagramming, and the taking of other visual and written notes, students learn to observe, understand, and draw ideas from the built environment.
504	Spirit of Place	A design/building project where students collaborate to develop and construct a project in a remote and inspiring site based on the spirit of the site, the users, and a metaphorical design intention. Projects have included work in the Canadian wilderness, the Amazon, and the mountains of Southern California.
505	Spirit of the Place Build	
505A	Spirit of the Place Build	
505B	Spirit of Place Build	
506	Portfolio Design	An overview of the process and organization of an architectural portfolio. Students will review techniques in digital photography and the use of photo editing software. Skills in moving conventional and digital drawings into readable graphic elements within a design will be addressed. Discussions will address design intent and the communication of specific information dependent on a target audience. Students will be introduced to desktop publishing programs in order to construct and organize individual portfolios.
508	Drawing as Visualization	This course is three fold, free hand sketching, mechanical drawing and portfolio layout with emphasis on freehand sketching. Upper division undergraduate

students and graduate students.

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| 509 | Special Topics
in Design and
Graphics | |
| 511 | History of
Architecture I | This course explores the history of world architecture and city planning from its beginnings to the end of the Romanesque period (Carolingian). Examples will be discussed with respect to aesthetic principles, symbolism and cultural meaning, site and urban design, spatial sequence, detailing, and construction and systems technology, and in the context of their behavioral, cultural, political, religious, ecological, and economic environments. |
| 512 | History of
Architecture II | This course explores the history of world architecture from the early middle ages to the dawn of the modern era (mid-eighteenth century). Examples will be discussed with respect to aesthetic principles, symbolism and cultural meaning, site and urban design, spatial sequence, detailing, and construction and systems technology, and in the context of their behavioral, cultural, political, religious, ecological, and economic environments. |
| 513 | History Elective | The Undergraduate/Graduate Study Abroad Program is an intensive semester long program located in a variety of foreign cities. The History Course is comprised of weekly site visits to various architectural and urban sites in conjunction with lectures exploring the historically significant events affecting urban planning, architecture, landscape and design. In addition, the students travel to different locations for 3, 4-day field trips to experience the diversity of urban development. |
| 514 | Introduction to
Theory | This course surveys the body of theories that have shaped the discourse, production, practice, reception, and representation of architecture. It explores the historical, social, and cultural milieu of architecture and the ways that architectural theory simultaneously informs and is informed by other domains of cultural production such as art, science, technology, economics, sociology, philosophy, and politics. |
| 515 | Beauty and
Brains | The seminar helps architecture students understand how the environment is really perceived, to gain a vocabulary for that perception, and a new understanding of options for shaping a designed environment that supports human needs. The cognitive (perceiving, knowing, thinking) and affective (character and emotional) basis of aesthetics is explored through readings, projects, field trips, and individual and team presentations. |
| 516 | Oriental/Western
Landscape | Course examines aspects of historic and contemporary, public and private realm issues with focus on Oriental (India, Japan, China) and Western (France, Italy, England, Belgium, US) landscape in relation to architecture, urbanism, and culture/religion. Through a broad variety of techniques and applications, it weaves interrelated landscape and design aspects of sacred and profane, built and natural environments, stewardship and sustainability, renewable energy and green buildings, site engineering, topography, and storm water management. |
| 517 | The History of
DC Architecture | |
| 518 | Advanced | An advanced exposition of philosophical, |

	Architecture Theory	anthropological, social, cultural, and political theories that inform the production and reception of architecture
519	Special Topics in History/Theory	
521	Pre Design	The first task in designing a project is finding out what is meant by "the project". In this course, students learn to define project problems in terms of mission, value, cost, planning, urban design, ecology, program, code, and life-cycle. Further, they learn to develop and propose design guidelines related to each, and learn to communicate their findings and recommendations to project stakeholders.
523	Real Estate Development	This course explores the practice of land development and architecture in the contemporary world of commercial and residential real estate development; the role of the architect as part of the real estate development team, market analysis methods and techniques to evaluate project feasibility that determine the outcome of the go/no-go decision by developers on architectural projects. Students will meet with developers and architects in the Washington D.C. region who are on the cutting edge of real estate development.
524	Practice Law, Real Estate, and Planning	This course addresses key legal topics and issues in modern architectural practice and real estate development projects. The course is divided into two main areas: contract law and negotiation and real property law, including the legal requirements for project approval. Contract law includes contract fundamentals and negotiation, essential elements in the contractual relationship with clients such as real estate developers, risk management and dispute resolution behavior by architects and laws governing architect liability in real estate projects. Real property law covers ownership and private properties rights, subdivision, zoning and urban planning policies that regulate design, environmental responsibilities influencing urban and suburban design and legal responsibilities of architects in project design and approval.
525	Real Estate Finance	This course provides an in-depth understanding of the financial aspects of real estate development. Topics covered include revenue projections and financial analysis to determine profitability, the operation of capital markets and analysis for real estate equity investment.
526	Construction Management	This course provides an overview of issues and practices in the field of professional construction management. This course examines the process of product delivery in the building industry from pre-design concerns through completion from the perspectives of Owner, A/E and GC. Develops skills and techniques in the use of construction logic diagrams (CPM critical path method) to examine and track the allocation of human, financial and material resources in a construction process.
527	CUAdc Design Collaborative	The mission of CUAdc is to empower architectural students to pursue civic engagement by providing pro-bono design services to nonprofits and community groups in and around the District of Columbia that could not otherwise afford these services. By applying cutting edge design and fabrication capabilities, critical thinking skills, and research tools, CUAdc hopes to become both a mechanism to encourage student engagement and an agent of positive social change.

528	Design-Build Practicum	
529	Topics in Management and Research	
530	Lighting Analysis	<p>This course aims at providing the tools necessary to integrate lighting in the overall design of a building. Through an optimized use of natural and artificial lighting, a building's environmental impacts can be reduced significantly while improving energy efficiency, and the well-being and visual comfort of the occupants. This course will be taught in three modules: fundamentals, measurement, and systems integration, in a lecture / application hybrid format so students may benefit from experience while learning about lighting design strategies.</p>
531	Introduction to Sustainability	<p>This course examines the contemporary architectural endeavor as an ecologically sustainable activity, surveys vernacular and traditional passive technologies and examines current theoretical approaches to sustainability, all as a means to define possible templates for practice. Case studies of state-of-the-art technologies and buildings will be used by instructor and students.</p>
532	Environmental Design I	<p>This course explores the thermal and lighting issues in design. It explores passive and active (mechanical) responses to achieving thermal comfort goals as they relate to climatic and solar conditions. It also explores passive (daylighting) and active responses to achieving visual comfort goals related to environmental conditions and behavioral needs.</p>
534	Energy Conservation and Renewable Energy in Buildings	<p>This course explores building energy conservation and renewable energy sources beyond the introduction provided by Introduction to Sustainability.</p>
535	Building Performance Analytics	<p>As the field of sustainable design evolves, designers and owners concurrently are starting to measure sustainable benefits in terms of their impact on human health, environment, and cost implications. This indicates that the performance of a building is becoming a requirement for assessing sustainable building design and in evaluating post-design to document the effect of sustainability measures. For the past decade, a broader and more comprehensive perspective of influences has been emerging in our approach to building design and evaluation. New more aggressive building standards such as those already implemented in San Francisco, New York City and Washington DC are already acting as drivers to predict energy use. Evolving codes and third-party green certification requires architectural analysis to address questions about sustainability within a timeframe fast enough to provide meaningful feedback to the design team from the beginning of the integrated design process, and to the owner through facility performance evaluation after occupancy. Building Information Modeling (BIM) and sustainability are symbiotic components of this sustainability evaluation. Together they propel our design and construction process from performance modeling, through energy evaluation, into the building's life-cycle and O&M tracking when a building is already occupied. This class will learn how to use BIM analytical software through building performance modeling, evaluate its role in pre</p>

and post design processes of systematically evaluating the performance and/or effectiveness of the building, then diagnose actual environments. The completion of this course will offer a formal Building Performance Analysis Certificate from Autodesk.

- 536 Material Matters This course explores emergent materials. Students research a number of new and innovative materials in an attempt to develop new architectural implementations by recognizing that any given material can be pushed beyond its current limitations by understanding its properties and the process through which it is produced.
- 537 Sustainable Design Strategies & Synergies Students will acquire the basic understanding of primary topics of sustainable strategies in building design, realize their inherent synergies, and assess their impact on building performance through diagrams and third party assessment. The objective of this course is aimed to educate students in critical requirements, resources, technologies, calculations and processes of identifying specific green strategies to implement within a building design. Students will gain a fundamental comprehension of such strategies, technologies, professional reference standards, and study the structure and concepts of categories found in various building assessments ζ including LEED rating systems ζ in order to assess the cumulative synergies that result from a successful and logical integration of these strategies. This course has been accepted by the United States Green Building Council (USGBC) as an official prerequisite for the Green Associate Examination administered by the Green Building Certification Institute (GBCI), increasing professional credentials in sustainable design practices of the architectural profession.
- 538 LEED Lab: Sustainable Campus Building Assessment LEED Lab is an interdisciplinary laboratory for students to experiment with various quantifiable synergies, policy revisions, and system tracking, meeting the demands of performance-driven sustainable facilities through actual third party LEED Certification. The course implements the LEED Existing Buildings Operations and Maintenance (EB:O+M) rating system to existing CUA campus buildings seeking LEED certification for the first time and existing LEED Certified buildings seeking recertification. The goals of this course will be mutually beneficial for students and the campus. First, the class creates a platform for direct student collaboration with the U.S. Green Building Council (USGBC), Green Building Certification Institute (GBCI), CUA Green Club, USGBC Students, and many departments and schools within the university. Next, experience gained from this course qualifies as a prerequisite for the LEED Accredited Professional (LEED AP) examination, meeting market demands for young professionals. Lastly, it enables the first LEED EB:O+M Certification of a campus facility solely by students and pioneers existing facility certification on the entire CUA campus.
- 539 Topics in Construction and Environment
- 541 Structures I This course provides an introduction to structural design, exploring force (including lateral loading), statics, equilibrium, and load tracing. It introduces structural analysis of beams, trusses, and cable structures. Students experiment on structural systems including those that are form-active, vector-active, bulk-active, and surface-active.

542	Structures II	This course continues exploring structural mechanics from Structures I and adds strength of materials, focusing on mechanical properties of structural materials, thermal effects on structures, strength, and deformation of structural components. The course introduces concepts of stress, strain, deflection, bending, and buckling of linear structural components. Additional topics include shear and bending diagrams, deflection in beams, mechanical properties of structural sections, and analysis and design of beams, and columns.
549	Topics in Structures	
551	Digital Tools I	This course will provide an introduction to basic 3d modeling, rendering and fabrication of architectural projects using a variety of digital design tools. Coursework will be focus on applications that will expand a student's capacity to design, represent and explore their architectural, tectonic and spatial ideas. Emphasis will be on various 3D modeling techniques used to create and manipulate architectural space and its components as well as to produce models for various digital fabrication techniques. This class is designed for students with beginner-to-intermediate computer skills.
553	Parametric Modeling and Digital Fabrication	This course explores the history, theory, and practice of digital design and fabrication through Computer Aided Design (CAD), Computer Aided Manufacturing (CAM), and Computer Numeric Controlled (CNC) fabrication. Architectural practice is undergoing a radical transformation in response to developments in these fields. CAD/CAM is quickly evolving as new digital tools open vast new aesthetic territories. The ¿digital native¿ designer who controls these design and fabrication tools has an unprecedented opportunity to work at the cutting edge of design and/or construction.
554	Basic Digital Visualization	This course will provide an introduction to the digital medium in architecture and its different tools. The focus of this course will be in the tools that will expand the student capabilities to explore their sense of architectural design. Students are able to explore the medium for future studio classes, presentations and portfolios. There will be an emphasis on 3D modeling to introduce the 3d space and understand its potential. Digital architecture is aimed at students with beginner-to-intermediate computer skills.
555	The Parametric Model	This course will introduce students to the theory and techniques of parametric design using McNeel's Grasshopper plug-in for Rhinoceros, various ancillary Grasshopper plug-ins, the Arduino in/out and Autodesk's Revit Architecture.
556	Interactive Design and Presentation	In addition to learning how to put together complex 2D graphic compositions, students will be able to present their projects/portfolios from a CD or the Web by using images as well as videos and audio. The course will introduce the basics of composition, portfolio and interface design, and will encourage students to explore the variety of presentation options using the digital interactive medium.
557	The Digital Designed Object	This course explores the use of computer applications in the design of smaller-scale objects, exhibits and interiors, with an emphasis on materiality, function, structure and presentation. Students will explore

specific aspects of an assigned object or interior space such as materials usage, assembly, production & marketing, and presentation. They will propose new design ideas and reinterpret the studied object or space in more current language using exclusively digital media. Students' study and production of realistic renderings and sophisticated graphic presentations will be a major part of each project.

- 558 Animations in Architecture and Design This course will be based on computer program that will explore and analyze and further the study of digital architectural design through 3Dmensional animations(s). The course will explore structure assembly animation, enveloping/ enclosing spaces with skin animation as well as the experiencing the spaces with the sun light cycle.
- 559 Topics in Digital Tools
- 559A EDTM Module I This course is based on the communication, analysis and composition of digital architectural designs through 3D renderings and animations. Though this course, students will explore a variety of animation techniques such as: camera motion settings, structure assembly animation, enveloping/enclosing spaces with skin animation as well as experiencing spaces with the sun light cycle in motion. Students will create several 3D models of the assigned design project and produce an animated presentation of their proposals.
- 559B EDTM Module II This course gives students hands-on experience in creating materials and textures for architectural 3D environments and compositions, as well as a solid training on how to apply those materials to Architectural scenes and objects. Students will focus on creating textures from basic images, using photo manipulation techniques as well as Photoshop procedural texturing methods and then applying such materials using proper UV setup. Students will learn how to work with material parameters and how to use shaders such as Specular, Glossiness, Bumps, Self-illuminated, Opacity and more. Individual and team oriented projects will be applied.
- 559C EDTM Module III The module explores the proliferation of interactive architecture and the possibility of interconnecting people and objects. The goal of this workshop is to understand the key concepts of interactivity and their relation to design and architecture. Interactivity requires more than developing interactive phones, games, reading devices that confine their interactivity to surfaces of screens. Interactivity requires an understanding of the complex physical interactions facilitated by embedded computation and physical kinetic counterparts and the application of such knowledge to design and production.
- 559D EDTM Module IV This course will focus on the creation of an architectural project and explore it into Real-time engines. Students will compose/design modular architectural small parts of a single class project and assemble them as a group, creating a kind of kit of parts of a whole, which will be assembled, tested and experienced though a Real-time engine. Students will also learn how to create different versions of their architectural spaces by modifying their texturing and modular components. The final architectural set will be composed of multiple pieces and propose a wide variety of architectural spaces to be experienced at the viewers' speed, time and direction.
- 559E Introduction to Digital

	Fabrication Tools	
559F	Basic Parametric Design	
559G	Advanced Digital Visualization and Animation	
559H	The Digital Designed Object	
559I	Digital Landscapes, Vegetation, Natural Forces	
559J	Arch in Digital Photography	
559K	Design Process:From Past to Present	
559L	Architecture & Visual Communication	
559M	Interior Architecture in Augmented and Virtual Reality	
571	The Facilities Management Context	Provides an overview of facilities management and its challenges, the history of the profession, professional associations, and career opportunities. Prerequisite: None.
583	History of American City Planning	The City Beautiful movement; new towns, introduction of zoning; planning after World War II to the present. Specific city plans, such as L'Enfant's Washington, will be studied.
584	Integrated Coastal Management	This course will explore planning principles and practices to address coastal growth and development using Integrated Coastal Management (ICM). Thematic modules illustrating different aspects of ICM will be explored through crosscutting domains of ecosystem services, resource use and governance. Through an examination of the coastal ecosystems services, students will examine the social, economic and governance frameworks that have been used to manage coastal resources. Policies and tools used to address growth management will form the basis for understanding the evolution of principles for coastal sustainability. The course will place emphasis on the application of best practices that promotes healthy coastal ecosystems.
586A	Environmental Impact Assessment	The course will provide a critical analysis of Environmental Impact Assessment (EIA) and Environmental Assessment (EA), as well as critical planning tools developed in the U.S.A. in 1969 to address ¿sustainable development¿. EIA is a multi-disciplinary predictive science designed to identify and interpret the significance of effects on the environment caused by infrastructure facilities (i.e., power plants, landfills, highways, pipelines, transit, etc.). EA is a ¿rational-comprehensive¿ planning process that uses the tools of EIA as a means of selecting alternative

facilities, plans, or programs that minimize effects on the bio-geo-physical and socio-economic environment. Students will become familiar with EIA history and theory from the 1960s to the present. Since U.S. Environmental Planners are engaged around the world, we will examine EIA regulations at various levels of government, including the 1969 U.S. National Environmental Policy Act (NEPA), state EIA regulations, municipal Comprehensive Plan EIA policies, Canada/Europe and regulations in the developing world. Students will learn about impact assessment techniques (e.g. impact matrices, overlay mapping using GIS). Because public controversy and the "not-in-my-backyard" (NIMBY) syndrome is pervasive in EIA projects, the course will review public engagement and conflict resolution methods and students will go on field trips to public meetings for local EIAs. High profile controversial case studies will be reviewed including the Keystone XL pipeline. The course will examine whether EIA as presently practiced is consistent with Christian/Catholic ecological stewardship paradigms (i.e. Earthkeeping), including environmental and social equity.

- 586B Healthy Cities, Livable Places The course will examine the effect of social and physical environments on the health of the greater community. From a historical perspective, students will trace the early responses to public health challenges in the late 1800s up to today's programs and policies that address livability outcomes. Students will explore contemporary trends connecting health indicators with the physical design and planning of our cities. The course will also investigate selected cities in developed countries (i.e. Canada, USA, Australia, and many European nations) that launched the first Healthy Cities program beginning in 1986. Students will evaluate programs and rating systems at a global scale as may be advanced by The World Health Organization, the Centers for Disease Control and Prevention and other organizations. The course will also address social, spatial, and environmental justice barriers to achieving optimum levels of quality of life. The Washington, D.C. Metropolitan Region will be the laboratory to explore disparities in achieving healthy places and livable cities including food systems, mobility, environmental quality, and overall resources. Students will also investigate the role that faith-based institutions have in creating, maintaining, and fostering healthy places.
- 586C Intro to GIS
- 586D Politics and the City
- 586E Plan Making
- 586F Sustainable Infrastructure This course will help students develop a holistic understanding of the "sustainable city" in terms of environmental quality, social equity, quality of life and Christian/Catholic ecological stewardship paradigms (i.e. Earthkeeping). We will critically evaluate the concept of the "green city" and whether these claims are based on empirical evidence (e.g. Ecological/Carbon Footprint Analysis); or whether these claims are "greenwashing". The emphasis of the instruction will be on the planning of "hard" infrastructure essential to a sustainable city, including potable water, wastewater (sewage) treatment, solid waste disposal/the 3Rs (reduction/reuse/recycling-composting), greenways/green roofs (natural habitat conservation) and transportation systems (roads, transit, biking and

waking). We will examine the unsustainable environmental problems associated with our current rampant natural resource and energy use, and the environmental problems associated with solid (garbage), liquid (sewage, effluents) and gaseous (emissions) wastes emanating from U.S. cities. The course will compare and contrast sustainable alternatives that emphasize conservation to the business-as-usual engineering/technology-based solutions prevalent in North American cities. We will also contrast American sustainability planning to the vastly different priorities in the developing world, especially the lack of basic infrastructure in mega-city shantytowns, where over a billion people on our planet live in filth and squalor due to a lack of access to safe drinking water and sanitary living conditions, mandating a Catholic response to this crisis.

- 586G Urban Morphology
- 586H City-Region Lab
- 586J Bike & Pedestrian Master Planning
- 589 Topics in Planning
- 590 Foreign Studies Language The Undergraduate Study Abroad Program is an intensive semester long program located alternatively in Rome or Barcelona. Students are required to take their second semester of the pertinent foreign language, while in Rome or Barcelona, to improve on their conversation, reading and writing skills.
- 594 Independent Studies This course is a self-directed study of a specific issue to be determined by the student with the guidance of a faculty member. Students are required to submit an Independent Study Form (available in the Architecture office) which must include proposed theme of research, projects, products, scope of investigation and schedule. A student must receive permission to enter into an Independent Study from the faculty who will help guide the research. Please contact your advisor or a faculty member regarding Independent Study proposals before registering.
- 594A Independent Study
- 599 Special Topics in Architecture
- 601 Concentration Studio I These courses explore advanced ideas in design as related to any of the several graduate concentrations operating within our program. These concentrations ask students to go beyond Each concentration studio focuses on the design of a project related to that concentration, with the three studies within a given concentration varying by theme rather than by educational level. For more specific information, see the supplemental course description for a particular concentration.
- 601A Concentration Studio Abroad Trip
- 602 Architectural Explore the conceptual and technical aspects of

	Design III: Comprehensive Building Studio	architectural form and its assembly. Students will examine building systems, lighting and mechanical, materials, as well as methods and details of assembly.
603	Concentration Studio II	These courses explore advanced ideas in design as related to any of the several graduate concentrations operating within our program. These concentrations ask students to go beyond each concentration studio focuses on the design of a project related to that concentration, with the three studies within a given concentration varying by theme rather than by educational level.
603A	Concentration Studio Abroad Trip	
605	Furniture Design: Form and Concept	Although the course title indicates the design and production of furniture, this is not the main objective. Students will explore materials, structure, mechanics, integration of scale and form, and strength of concept. Lectures will introduce ideas, objectives, and precedents. The lectures will parallel studio and model shop work, and include technical and theoretical topics. Projects include small-scale models to finished full-scale pieces.
606	Advanced Rendering Techniques	Builds on the basic drawing skills learned previously: tones, textures, perspective, shades and shadows, and color. Students learn to develop perspectives from photographs, and from coloring of photographically enlarged drawings. Techniques of rendering in transparent and opaque watercolor, markers, colored pencils, and ink.
611	History of Architecture III	This course traces the recent history of architecture and urbanism from the dawn of industrialism and the rise of cities (mid-eighteenth century) to the present. Examples will be discussed with respect to aesthetic principles, symbolism and cultural meaning, site and urban design, and construction technology, and in the context of their behavioral, cultural, political, religious, ecological, and economic environments. Students are encouraged to understand the importance of precedents, to consider a diversity of viewpoints, and to evaluate buildings through critical inquiry.
613	History and Theory of Urban Form	This course explores the design of the public realm, spatial strategies for the design of the public corridors and outdoor rooms of the city. Students gain an understanding of urban morphology, building typology, building vocabulary, and sustainable design principles, methods and techniques.
614	Public Realm of Private Buildings	This course focuses on the integration of the public realm, consisting of corridors (streets) and outdoor rooms (squares and plazas), with the world of private building with its own internal issues. The seminar will emphasize analysis, research and the exploration of alternatives.
615	Applied Urban Design Theory	An exploration of the application and implementation of urban design principles in a democratic, free-market society. Emphasizes the effects of government policy and regulation on the development of American urbanism, especially zoning and its impact on the implementation of effective urban design strategies.
616	Sacred Space Design in the Abrahamic Traditions	A survey of the history and evolution of sacred space and the interaction and influence of liturgy on the design of sacred space.

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| 617 | Theory of Sacred Space and Cultural Studies | This class investigates specific theoretical, historical, social, and/or philosophical issues unfolding at the intersection between contemporary architecture, culture and spirituality. The class unfolds like a seminar in which students go through a series of selected readings, discussions, case studies, field trips, presentations and/or practices with the purpose of building a reflective position in SSCS. Lectures and reviews (by guests and the instructor) establish the intellectual, methodological, and dialectic framework for the class operation. While the course often works in conjunction with the SSCS graduate studio, its pedagogy, scheduling, and design are independent so that students not enrolled in the studio may fully benefit from this offering. |
| 618 | Foundations of Sacred Space/Cultural Studies | This course surveys essential ideas, methods, and paradigms behind the spiritual and cultural roots of place-making. The purpose is to introduce students to systematic ways to question, research, reason, and respond to our fundamental need to establish a meaningful connection to others, nature, cosmos, and the divine. What constitutes sacred space and how does dwelling intersect it? Are commonalities possible in a multicultural world? How do faith, rationality and service meet and inform one another in and through architecture? Are there age-proven approaches to such challenges? The class examines these and other SSCS questions with architectural design and scholarship in mind. |
| 621 | Digital Construction Docs | Architects and engineers document their designs so that everyone involved can come to agreement on what is to be built before construction starts. The traditional blueprints and specifications that served this purpose for decades have evolved into digital Building Information Models (BIMs). In this course, students will learn to plan, produce, and manage BIMs, and produce one of limited scope. Students will be expected to start the course already able to create 3D models using BIM-compatible software (Rhino, Revit, or other if approved by teacher). |
| 623 | Affordable Housing | This class is designed to give the student an introduction to the major types of affordable housing being provided with funding or incentives by government agencies, and private initiatives. We will discuss the various types of populations and their housing needs including the homeless, working poor, seniors and the workforce or moderate income housing and the types of housing being provided for these groups. This class will give the student an introduction to Federal programs, including Section 8 Public Housing, HOPE VI, and rental housing using the Federal Low Income Tax Credit program. We will also cover the tools used by local and state governments such as Inclusionary Zoning, trust funds, public/private partnerships on publicly owned land, and down payment assistance. Other major trends that will be covered include gentrification, workforce housing and the foreclosure problem. We will use the Washington region as a case study, and focus on neighborhoods such as Columbia Heights and Silver Spring. The classes will include presentations by local practitioners and developers. |
| 624 | Mixed Use Development | A key innovative development over several decades has been a change from projects consisting of a single dedicated use to those blending together several functions. This class focuses on understanding the import and reasons for that shift in conjunction with: |

their principal characteristics, pertinent factors influencing their design, synergism between and among the major elements, planning, architectural, economic, social, environmental, transportation, and security outcomes, market and feasibility issues, and prototypical examples in the United States and abroad.

- 625 Leadership Real Estate Development & Architecture The course explores leadership management in the architectural and real estate development professions. In particular, the course focuses on emerging concepts of design and the built environment with characteristics and expectations of leadership. The course introduces the many ideas and approaches that can define leadership in the architectural and real estate development field. The class provides a platform for considering how thesis projects position students as future leaders in architecture and development, and integrates reading assignments, discussions and guest speaker lectures with the students' own thesis research and design while remaining relevant to the topics of leadership, architecture and development.
- 626 Real Estate Investment
- 631 The Aesthetics of Green This course examines the implications of designing green building: does going green change the face of design or only its content? In a series of illuminating and challenging presentations discussions and assignments the instructor will encourage students to explore the theses that beauty is inherent to sustainability; that how things look is as important as how they are made; that form and image can enhance conservation, comfort and community at every scale of design from products to building cities; that aesthetic attraction isn't just a superficial concern, it is an environmental imperative.
- 632 Comprehensive Building Supplement This course will investigate the mechanism of perception and how the brain processes visual information. Using a cognitive approach the reasons some buildings work and others don't will be examined. The relationship between experience and abstraction will also be investigated. The goal of this study of perception is to make the student of architecture a better designer.
- 633 Construction I: Assemblies and Detailing This course explores the basic options in architectural construction and detailing from the perspective of a designer, including assembly options. It reviews the practical and professional considerations inherent in making decisions about building systems, with an emphasis on the desired performance characteristics of each system and its potential for effective integration throughout the design and construction process. It also introduces, at a very basic level, the concepts and techniques of technical documentation including construction drawing.
- 634 Construction II: Materials and Methods This course exposes students to the exploration of materials and their functional implications. Information presented in this course will explore the considerations inherent in making decisions about material selection, with particular emphasis on the desired performance characteristics as well as the capacity of the material to produce or amplify the experiential. The course is offered as the second part of the introduction to construction concepts, technical information and strategies, material and systems resources and professional-level understanding of the most important

aspects of the making of contemporary buildings. While the scope of the course is broad, it is not, and could never be, a comprehensive treatment of all issues regarding material selection and specifications. However, the course will offer numerous strategies by which the young architectural professional may continue to augment the material presented here during further graduate studies and professional experience.

- 636 Design Process and Methods
- 648 Advanced Architectural Analysis In this seminar and workshop students engage with advanced analytic and synthetic concepts, methods and tools to understand and translate the designed environment. Media will include but will not be limited to digital modeling and animation, collage, painting, charcoal and color pencil. The overall intentions of this course is to expand the means and methods of analytical and synthetic thinking, develop a discourse on critical observation and produce advanced and varied analytical studies of the designed environment. Topics to be discussed will include the architect as bricoleur and the role of bricolage in terms of collage, Baudelaire's concept of the flâneur and the city, Vidler's concept of the uncanny, mapping, Walter Benjamin's dialectics of seeing and Heidegger's concepts of dwelling, place & environment.
- 651 Advanced Parametric Design (BIM) This class will focus on the advanced concepts and mechanisms for creating performance-based parametric systems. The objective of this class is to provide students with advanced conceptual and technical frameworks through which to better understand the relevant application of Parametric Design to the various design problems they will encounter in professional practice. In a hands-on learning environment, you will learn techniques for using Parametric Design, Data-Based Simulation, and Component Detailing for Digital Fabrication. Through guided exercises, group discussions, and one-on-one prototyping sessions, students will design and construct a series of component assembly variations driven by a parametric model.
- 653 Digital Lighting in Architecture
- 655 Advanced Digital Design and Fabrication This advanced workshop will focus on the use of CAD/CAM (Computer Aided Design / Computer Aided Manufacturing) and CNC (Computer Numerically Controlled) technologies in the design and fabrication of architectural spaces and constructs. Students enrolled in the course will focus on the design and development of full scale prototypes using digital techniques for analysis and fabrication focusing on the transition between computer modeling and its materialization. Students will be expected to utilize various software applications necessary to generate three dimensional models and CNC machine instructions as well as confront the physical properties of materials and details. Lectures will be accompanied by software tutorials, machine demos, and lab sessions that engage both the digital / virtual and physical / analog realms of design. Students are expected to complete a full scale design-to fabrication project during the course of the semester. This course will make use of the CNC fabrication laboratory at the School of Architecture, as well as an off-site fabrication facility.
- 656 Advanced Digital This course explores computer programs that aid in the

	Visualization	analysis and study of architectural design and in presentation. Students learn to model functions, spaces, and spatial relations in residential design, and to design facades.
659	Digital Imaging & Editing in Architecture	This course supplements design studio work in the digital media graduate concentration. Students will learn to deepen and refine their studio projects' graphics, focusing on film as a means of presenting their design work. The course has two components, one that introduces the idea of storyboarding and related software, and one that addresses the digital assembling and editing of a basic movie. Students will collect and edit media data in several formats including stills, video, animations, and audio, as they compose a movie linked to their studio proposals.
671	Creative Problem Solving	Explores the design process as a creative, focused, strategic, and holistic way to respond to challenges. Students learn to break out of conventional thinking while working within constraints. The course makes heavy use of right- and left-brain exercises and graphic forms of communication. Prerequisite: None.
672	Occupancy Management	A survey of the issues that underlie the management of activities and events that take place in facilities. The course explores the evolving nature of the workplace and management of the security, emergency, and disaster preparedness issues that affect facilities. Students consider facilities that serve a diverse range of needs including commercial, residential, industrial, and institutional. Prerequisite: None.
673	Project & Practice Management for FM	Explores approaches to managing time, people, and resources to accomplish strategic and tactical projects, with a focus on leadership skills and communication, upward with those in the "C Suite", downward with employees, and horizontally with different sectors within an organization. The course also looks at the skills needed to effectively manage an FM practice and to coordinate with the larger organizations they serve. Prerequisite: None.
674	Facility Performance Assessment & Management	Looks at approaches to and techniques for verifying that facilities are functioning per their design intent and to minimize their impact on the environment and efficient use of energy, water, and other resources over the life of the facility. Students will learn the basics and value of assessment tools such as commissioning, occupant satisfaction surveys, and performance management approaches such as Balanced Scorecards (BSC), and will learn the basics of monitoring, analyzing, benchmarking, and adjusting facilities and their physical components to work optimally, follow traditional building certification program concepts (such as management of energy, water, materials, environmental quality and building sites), and to respond to the evolving programmatic and contextual needs of the facility.
675	Asset Management & Strategic Planning	Explores the financial side of facilities management, including the basics of real estate investment, development, and disposition. Students will learn to consider Lifecycle Cost Assessment (LCA), use different financial metrics to evaluate the Total cost of Ownership (TCO), estimate the market value of a facility and develop multiple investment holding scenarios for maximizing the return, financial and otherwise, from the owner's perspective. Students will also learn how to compute and rank-order the benefit-cost analysis of investment portfolios that include multiple types of real estate properties, both in the

short-term and long term. Prerequisite: None.

676	FM Technology	Students learn multiple approaches to FM automation, including software used for financial calculations (spreadsheets, etc.), project management (PM), Geographic Information Systems (GIS), Building Information Modeling (BIM), Maintenance Management Systems (MMS), and Building Automation Systems (BAS). Prerequisite: None.
677	Construction Design and Implementation	Reviews the physical aspects of facilities. Students learn the basics of technical design and detailing, of documentation (drawings and specifications), and of construction management and administration. It reviews architectural and structural assemblies and materials; mechanical, electrical, plumbing, and fire protection systems; and landscape elements and materials. Prerequisite: None.
678	Building Operations and Maintenance	Reviews the operation and maintenance of each of the constructed elements, systems, and equipment explored in ARPL 676, Construction Design and Implementation, including the idea of budgeting for operation and reserve funds.
681	Innovations in Planning & Design	
690	Architectural Studies Abroad GFS	
694	Independent Studies	This course is a self-directed study of a specific issue to be determined by the student with the guidance of a faculty member. Students are required to submit an Independent Study Form (available in the Architecture office) which must include proposed theme of research, projects, products, scope of investigation and schedule. A student must receive permission to enter into an Independent Study from the faculty who will help guide the research. Please contact your advisor or a faculty member regarding Independent Study proposals before registering. This course may not substitute for a design studio.
696	Thesis Continuation	Thesis Guidance is offered to students who were unable to complete their thesis within the prescribed semester and have received an "Incomplete" grade. This course allows thesis students to continue to meet with their faculty advocate, use studio space and work towards the completion of their thesis. The student has up to five consecutive semesters to complete their Thesis, but must register in Thesis Guidance each semester until finished.
696A	Thesis Studio I	
696B	Thesis Studio 2	
696C	Independent Thesis I	
696D	Independent Thesis II	
701	Concentration Studio III	These courses explore advanced ideas in design as related to any of the several graduate concentrations operating within our program. These concentrations ask students to go beyond. Each concentration studio focuses on the design of a project related to that concentration, with the three studies within a given

concentration varying by theme rather than by educational level. For more specific information, see the supplemental course description for a particular concentration.

701A	Concentration Studio Abroad Trip	
702	Thesis Design	In this course, students undertake and complete the topic and scope of work that they proposed and explored during thesis preparation, and that was approved by the thesis faculty. Along the way to doing that, they receive input from a team of thesis instructors and from consultants in such areas as site planning/landscape; structures, materials, and building assembly; and environmental systems and sustainability.
704	Thesis Written	Development in written form of a significant design topic related to the advancement of the profession and allied disciplines, including prototypical designs. Approval of faculty required for enrollment in this course.
721	Thesis Preparation	Selection of significant hypothesis involving challenging design issues, subject to faculty approval, followed by extensive research, site selection, and programming for a major architectural, conservation or urban design project. Completion of this course is prerequisite to enrollment in all Thesis Design and Written Thesis courses.
722	Practice Management	The course explores business management for architects. Where other courses focus on the services that architects provide to their clients (such as design), this one focuses on what architects need to know to remain in business while providing those services. It addresses effective management of architectural projects, practices and careers in terms of marketing, finance and accounting, staffing, law, organizational structure, professional development, risk management, and negotiation. In addition, it reviews the history and current state of the profession and the procedures mandated by the standard industry contracts used by owners, design professionals, and contractors in the design and construction of buildings.
731	Environmental Design II	This course explores both passive (natural) and active (mechanical) approaches to managing lighting; power; communications; domestic water supply and waste, storm water; fire detection, suppression; and annunciation; acoustics; and conveyances.
733	Sustainable Design Strategies	This course examines the predicament of contemporary architectural endeavor as an ecologically sustainable activity; a survey of vernacular passive technologies; and an examination of current theoretical approaches to sustainability will define possible templates for practice. Case studies of state-of-the-art technologies and buildings will be used by instructor and students as teaching/learning vehicles.
734	Systems and Simulation I	This course is intended to give students both a fundamental base and practical knowledge of the passive and active environmental control systems/strategies for sustainable buildings. The students will obtain sufficient background to make technological decisions to design sustainable residential and commercial buildings in terms of energy efficiency by understanding the major contributors to building energy use and loads calculations, including climates,

thermal characteristics of building envelopes and fenestration, internal sources, as well as heating, ventilating and air conditioning (HVAC) systems.

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| 735 | Materials and Assemblies | This course will examine the principal criteria that determine the nature of building materials and the degree to which they can be considered `sustainable¿. The criteria considered will be: carbon dioxide emissions; primary energy consumption; global warming potential; weighted resource use; air and water pollution indices; life cycle analysis. It will also examine the assembly of building components using low impact materials and technologies. |
| 736 | Systems and Simulation II | This course introduces students to building energy modeling and energy optimization techniques using the EnergyPlus whole-building energy simulation program. This course is intended to build on the knowledge and skills gained in Systems and Simulation I. Students will practice whole-building energy simulation, including the hourly simulation of dynamic thermal envelope loads and system simulations; and explore various energy efficiency measures to optimize the envelope and system performance of their projects. |
| 737 | Building Performance Verification | This course introduces students to all aspects of building performance, including energy use, water use, and indoor environmental quality (IEQ) based on the ASHRAE/CIBSE/USGBC Performance Measurement Protocols for Commercial Buildings (PMP). Students will learn fundamental concepts of how to measure and benchmark a building¿s on-site performance by applying the PMP case study to real buildings (e.g., CUA campus buildings) using various measurement instruments and techniques. The hands-on lessons gained from this results-oriented approach will expand students¿ understanding of post-construction impacts of design projects on building operation and built environment, which are expected to improve their future designs. The case-study applications will build upon the existing curriculum resources such as Vital Signs Project at University of California, Berkeley and the Agents of Change Project at University of Oregon. |
| 742 | Advanced Structures | This course explores the applications of concepts from Structures I and II in the design of structural elements in steel and reinforced concrete in accordance with code provisions. |
| 761 | MCRP/MSSD Thesis Preparation | This course prepares students for thesis work which is required for graduation. A thesis is an original piece of research, grounded in knowledge of the theories and previous studies in the field, and presented in a manner consistent with research reporting in that field. It embodies a substantial amount of research on primary sources, or on scholarly and critical studies of such sources, or on both. In this context research can be defined as directly creating new knowledge, or locating and critically evaluating existing primary and secondary textual materials, or engaging in any other appropriate scholarly project, provided that the student's original contribution can be clearly identified. Students in this course will undertake the first part of a thesis that will be finished in a subsequent semester and by the end of their studies. |
| 771 | Facilities Management Capstone | In FM capstone, students propose, research, and develop a response to a facilities management question or challenge under the mentoring of a faculty critic. It can be practice-based, involving development of a facilities master plan or similar document for a real or |

hypothetical case facility. It can also be research-based, involving development or critique of best practices, analysis of trends in the FM profession or facilities industry, or other approved topics. In all cases, students address strategic issues, conduct research and analysis, and generate strategic recommendations and conclusions.

- 780 Planning Studio This course is a comprehensive studio geared toward planning practice. Students will learn by doing, applying the knowledge gained about planning from courses previously taken to a hypothetical (or perhaps real) planning project. A set of studio problems will be assigned to acquaint the student with the techniques and processes of the professional planner. Traditional and contemporary graphic techniques, both manual and computer-aided, will be employed in the course.
- 781 Planning Origins and Traditions This course examines the history of city and regional planning in the United States through the contributions of specific individuals and events that helped shape the profession. It explores the major principles, events, outcomes, and design elements, among others, of development periods in planning history as well as the roles played by the planner, the elements of the planning process, and the political and cultural context of public planning activity. The rational action model is used as a point of departure but course content ranges widely to cover many points of interest. The course addresses the historical context for each period as well as significant outcomes and applications, and examines certain spatial, cultural, and political factors, issues, and conditions associated with the history of the city and regional planning profession in the United States, as well as principles of sustainability.
- 782 Planning Principles The course is designed to introduce students to the broad and interdisciplinary field of city and regional planning. It covers a wide variety of topics including a brief history of planning in the United States, selected planning theories, various planning tools, political and social issue of planning, and urban governance. In addition, students will be introduced to various sub-fields of planning which include housing, urban renewal, transportation planning, environmental planning, growth management, and economic development.
- 783 Ethics and Stewardship This course examines the close relationship between urban growth and environmental degradation and how the incorporation of ethics and stewardship in the fields of architecture and urban planning address the issues associated with urban life. In addition, the course will investigate how several sustainable principles guide current thinking related to the various scales of urban development.
- 784 Planning Techniques I
- 787 Planning Techniques This course will further the student's understanding of the various analytical tools of the planning profession. Topics will include urban economics, transportation principles and analysis; local and global factors; integrated practice; principles of responsive development; and LEED Neighborhood Development criteria.
- 788 Urban Economics The purpose of this course is to have the student understand the concepts underlying the economic growth of towns, cities, counties, and regions. The student will become familiar with the urban economy, its

structure and functions, and its role within the region. The student will develop the basic skills and knowledge necessary to understand, diagnose, evaluate, and recommend solutions to potential problems in the urban economy that can affect the success or failure of comprehensive land-use planning and policies.

789 Transportation and Land Use Planning

Transportation systems and land use planning are intricately tied to each other in a symbiotic relationship. Notwithstanding, transportation systems cause loss of habitat/biodiversity and is one of the major contributors to atmospheric degradation, including global warming and photochemical smog. Urban sprawl, auto-dependant suburban design, lifestyles dependant upon personally owned vehicles (POVs) and traffic congestion also negatively affects our economy and is a major contributor to the obesity public health-care crisis. This course will examine these issues as they relate to transportation and land use within the context of sustainability. Business-as-usual auto-centric planning will be compared with sustainable transportation planning, including multi-modal systems, land use planning based on transit-oriented development (TOD), and transportation demand management (TDM). This relationship will be re-examined in the light of "smart growth" land use planning. A global perspective will also be employed in this course; contrasting transportation and planning in the USA, other western countries and developing nations.

Footnotes

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