

ARCHITECTURE

<http://www.arc.miami.edu>

Introduction

The School of Architecture at the University of Miami offers:

- Master of Architecture I (3-year track)
- Master of Architecture I AP (Advanced Placement, 2-year track)
- Master of Science in Architecture (Digital Fabrication & Technology, Hospitality Design, Healthcare Design, Classical & Traditional Design, Historic Preservation and Contemporary Theory and the Built Environment)
- Master of Construction Management
- Executive Master of Construction Management
- Master of Real Estate Development + Urbanism
- Master of Urban Design
- Master of Professional Science in Urban Sustainability and Resilience with a track in Resilience (interdisciplinary program offered in collaboration with the College of Arts & Sciences, www.urb.miami.edu (<https://urb.miami.edu>))
- Master of Data Science with a track in Smart Cities (interdisciplinary program offered in collaboration with the College of Arts & Sciences, www.msdatasciences.miami.edu) (<https://www.msdatascience.miami.edu>)
- Dual Master Degrees
- Certificates

The School of Architecture's location in Coral Gables within the Miami metropolitan area provides an outstanding laboratory for research and advanced study; the challenges of conservation and development are intense in one of the nation's fastest growing urban areas. These challenges result in an increasing demand for skilled professionals.

Students have the opportunity to work with the faculty in the exploration of theoretical issues as well as in the resolution of practical problems. The School of Architecture values and sustains a creative, open and supportive environment, emphasizing personalized instruction in small classes and studio courses.

Accreditation

In the United States, most 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 professional degree programs in architecture offered by institutions with U.S. regional accreditation, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture. A program may be granted an eight-year, three-year, or two-year term of accreditation, depending on the extent of its conformance with established educational standards.

Master of Architecture degree programs may require a pre-professional undergraduate degree in architecture for admission. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

The University of Miami School of Architecture offers the following NAAB-accredited degree programs:

Bachelor of Architecture (171 undergraduate credits)

Master of Architecture I (102 graduate credits)

Master of Architecture I AP (60 graduate credits)

Admission Requirements

Applications are generally considered for entrance in the Fall semester only. Courses in all Master program's are sequenced to deliver a cohesive educational experience and students are expected to follow the established course sequences for their program. Students entering the program in Spring or Summer are not eligible to enter the course sequence at that time, but may take electives or other required courses. This will necessarily extend the duration of the program.

Applications start on November 1 until June 1 for entry in Fall and start on October 1 until December 1 for entry in Spring. Admission to the Graduate Program is subject to the rules, regulations and procedures of the Graduate School as stipulated in the University Graduate Bulletin. It is the responsibility of each student to understand these requirements and to ensure that they are met.

Please refer to our latest admission and portfolio requirements [here](https://www.arc.miami.edu/admissions/admissions-and-portfolio-requirements/grad-requirements/) (<https://www.arc.miami.edu/admissions/admissions-and-portfolio-requirements/grad-requirements/>) and see additional information for international students. (<https://www.arc.miami.edu/admissions/admissions-and-portfolio-requirements/grad-requirements/international-admissions/>)

Resources

- Jorge M. Perez Architecture Building (<https://www.arc.miami.edu/resources/facilities/perez-architecture-center/>)
- The Marion Manley Historic Buildings (<https://www.arc.miami.edu/resources/facilities/marion-manley-buildings/>)
- Thomas B. Murphy Design Studio (<https://www.arc.miami.edu/resources/facilities/thomas-p-murphy-design-studio-building/>)
- B.E. & W.R. Miller Build Lab (<https://www.arc.miami.edu/resources/facilities/b-e-w-r-build-lab/>)
- Paul Buisson Library (<https://www.arc.miami.edu/resources/libraries/architecture-research-center/>)
- CUCD (<https://cucd.arc.miami.edu/>)
- Fabrication Lab (<https://www.arc.miami.edu/resources/labs-and-centers/fabrication-lab/>)
- LU_Lab (<https://www.arc.miami.edu/resources/labs-and-centers/lu-lab/>)
- RAD Lab (<https://www.arc.miami.edu/resources/labs-and-centers/rad-lab/>)
- Computer Lab (<https://www.arc.miami.edu/resources/labs-and-centers/computer-lab/>)
- Model Shop (<https://www.arc.miami.edu/resources/labs-and-centers/model-shop/>)
- Photo Lab (<https://www.arc.miami.edu/resources/labs-and-centers/photo-lab/>)

Dual Degrees

- Bachelor of Science in Architectural Engineering (B.S.A.E)/Master of Architecture I (M.ARCH)
- Master of Architecture (M.ARCH I and I AP) and Master of Real Estate Development + Urbanism (MRED+U): 102 credits + 21 credits
- Master of Architecture (M.ARCH I and I AP) and Master of Urban Design (M.U.D): 60 credits + 21 credits
- Master of Urban Design (M.U.D)/Master of Real Estate Development + Urbanism (MRED+U): 30 cr + 30 cr (min. 60 credits)

Certificates

Graduate students increasingly look to areas of concentration that can provide skill and knowledge bases for professional applications. Historic Preservation, Design for Health and Wellbeing, Sustainable and Resilient Design, Design for Health and Well-Being, Construction Management, Urban Design, and Real Estate Development prove to be rapidly growing areas of professional specialization as they engage critical areas of investigation in contemporary architecture. The graduate certificate programs address both the intellectual and academic needs of the School of Architecture, and the desire of the School to use its current curriculum as a platform to engage these specialized areas further.

Master of Architecture

The Master of Architecture is an accredited professional degree program that prepares graduates to live and thrive in the world of architecture. The program promotes a creative, open and supportive environment emphasizing advanced and personalized instruction through small class and studio courses. It investigates the world of architecture in its manifold forms, and immerses students in contemporary challenges to address a variety of social, cultural, technological, and programmatic contexts.

The Master of Architecture (M.ARCH) program consists of the following two tracks:

Master of Architecture I - 3 year

A 3-year program for students with non-architecture degrees (completion of 102 credits is required).

Master of Architecture I AP - 2-year advanced placement

A 2-year program for students with non-professional degrees in architecture or closely related field (completion of 60 credits is required).

Master of Construction Management/Executive Master of Construction Management

Gain the technical knowledge and managerial skills you need to set yourself apart in the construction industry. The Master of Construction Management (M.C.M.) is an one year (three semesters), 36 credit program. It is designed to broaden your educational and career options to solve challenges in the industry and become future leaders of design and construction related organizations worldwide. The Executive Master of Construction Management (E.M.C.M.) is a 30 credit program designed for accomplished professionals in the design and construction industry who are ready to take their career to the next level.

Master of Science in Architecture

The Master of Science in Architecture is a three- or four-semester program that allows enrollment in six different tracks (with a minimum curricular requirement of 30-36 credits). On the background of interdisciplinarity the students of the six tracks will oscillate between joint courses for all MSA students, track-specific courses and courses that are shared with students from other programs and departments. Each track will be led by a recognized leader in the field, supported by the joint resources of the MSA umbrella. The program acts as an accelerator and cross-pollinator, in which the confrontation with contemporary problems and themes takes priority over disciplinary silos. In offering an open academic environment to investigate design strategies in relation to the most pressing issues of the 21st century, the MSA program provides a contemporary skills and

knowledge base for professional application, as much as future advanced doctoral study. The degree is STEM-designated which allows international students to apply for OPT for up to 36 months after graduation.

Master of Urban Design

The Master in Urban Design, is a three (optional four) semester, STEM designated program that provides students with a vital design experience investigating the guiding principles for building regions, cities and communities. Reflecting the imperatives of sustainability and resilience, the program conceptualizes cities as an extension of the ecological transect across the natural to human habitat, providing students with a range of experiences from rural to urban. Studios and seminars engage the pressing contemporary challenges of housing, infrastructure, climate change, and health and wellness.

Master in Real Estate Development and Urbanism

The University of Miami's (UM) Master of Real Estate Development + Urbanism (MRED+U) program is an immersive one-year graduate program that combines coursework in real estate development, finance, market analysis, construction, architecture, urban design, law and entrepreneurship. The knowledge and skill required to acquire, program, design, construct, reposition and manage real estate is complex. The MRED+U program prepares students for exciting and meaningful careers that embrace this complexity through the most interdisciplinary curriculum of its kind. —one that blends the fundamentals of real estate development with livable community design. Students are immersed in one of the world's most dynamic real estate markets through a rigorous curriculum enriched by a wide range of experiences that extend beyond the classroom including study tours, major industry conferences, speaker series, the annual Real Estate Impact Conference, research initiatives and networking events. The prestigious MRED+U Advisory Board connects students with over 60 industry leaders who are directly engaged in the program as lecturers, mentors and advisors, providing case studies, internship and employment opportunities and access to dozens of cutting-edge projects from every real estate sector.

Awards and Tuition Waivers

All students admitted full time may be eligible for partial tuition based waiver support. The School of Architecture provides merit-based tuition waivers to graduate students. Applicants to the Graduate Programs will be considered each semester for a limited number of merit-based tuition waivers within the School. Assistantships are an honors award available to a limited number of students.

American Institute of Architects Henry Adams Medal is awarded by the American Institute of Architects to the highest ranking graduating student for scholarship and excellence in architecture.

Other honors, distinctions, and awards are presented annually for excellent student performance.

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- Master of Science in Architecture (<https://grad.arc.miami.edu/>)(Digital Fabrication & Technology, Hospitality Design, Healthcare Design, Classical & Traditional Design, Historic Preservation and Contemporary Theory and the Built Environment)
- Master of Construction Management (M.C.M.) (<https://mcm.arc.miami.edu/>)
- Executive Master of Construction Management (E.M.C.M.) (<https://mcm.arc.miami.edu/>)
- Master of Real Estate Development + Urbanism (M.R.E.D.+U) (<https://mredu.arc.miami.edu/>)
- Master of Urban Design (M.U.D.) (<https://www.arc.miami.edu/academics/graduate/master-of-urban-design/>)
- Master of Professional Science in Urban Sustainability and Resilience (<https://urb.miami.edu>) with a track in Resilience (interdisciplinary program offered in collaboration with the College of Arts & Sciences, www.urb.miami.edu (<https://urb.miami.edu/>))
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- Historic Preservation Certificate (<http://bulletin.miami.edu/graduate-academic-programs/architecture/historic-preservation-certificate/>)
- Classical Architecture Certificate (<http://bulletin.miami.edu/graduate-academic-programs/architecture/classical-architecture-certificate/>)
- Sustainable and Resilient Design Certificate (<http://bulletin.miami.edu/graduate-academic-programs/architecture/sustainable-resilient-design-certificate/>)
- Construction Management Certificate (<http://bulletin.miami.edu/graduate-academic-programs/architecture/construction-management-certificate/>)
- Urban Design Certificate (<http://bulletin.miami.edu/graduate-academic-programs/architecture/urban-design-certificate/>)

- Real Estate Development and Urbanism Certificate (<http://bulletin.miami.edu/graduate-academic-programs/architecture/redu-certificate/>)
- Hospitality Design Certificate (<http://bulletin.miami.edu/graduate-academic-programs/architecture/hospitality-design-certificate/>)
- Design for Health and Well-Being Certificate (<http://bulletin.miami.edu/graduate-academic-programs/architecture/health-design-certificate/>)

Certificates require 15 credits of one certificate related studio (6 cr) and related architecture electives (9 cr).

ARC 601. Urban Design Studio I. 6 Credit Hours.

Introduction to urban design principles and techniques, in the master planning of a new community. Emphasis on the sustainability of human settlements within the context of degradation of natural systems and resource depletion; regional environmental and infrastructure systems; transportation and traffic; transit-oriented development; land use, building, and thoroughfare types.

Components: STU.

Grading: GRD.

Typically Offered: Fall.

ARC 602. Urban Design Studio II. 6 Credit Hours.

Design projects focusing on contemporary challenges and goals for existing settlements, including urban and suburban disinvestment and deterioration, urban redevelopment, social equity, resilience and adaptation to climate change, design for healthy communities and active living, and urban agriculture.

Components: STU.

Grading: GRD.

Typically Offered: Spring.

ARC 603. Urban Design Studio III. 6 Credit Hours.

Urban design projects that deploy full range of techniques for regional control of urban growth. Application of advanced technologies, including smart cities, innovations in transportation and traffic engineering, energy generation and conservation, and emissions reduction.

Components: LEC.

Grading: GRD.

Typically Offered: Summer.

ARC 604. Immersive Architectural Design Studio I. 6 Credit Hours.

Environments of Exchange. As the first of 5 core studios in the MArch I program, ARC 604 aims to build a strong understanding of architectural fundamentals. Through a series of exercises of increasing complexity, the course presents architecture as a process-based endeavor, and foregrounds the important tools of the architect's craft. Topics include conceptual diagrams, precedent analysis, architectural form and figure, dimensions and space, site, and architecture's agency in facilitating interactions through programming and circulation.

Components: STU.

Grading: GRD.

Typically Offered: Fall.

ARC 605. Immersive Architectural Design Studio II. 6 Credit Hours.

Material Form + Structured Space. This core design studio builds on the processes and skills introduced in ARC604, while shifting focus to the material realities of architecture. Exercises will emphasize the relationship between architectural form and physical materials, and explore how methods of construction inform the design of assemblies. Physical models that convey ideas, test structural behaviors, and validate imagery are shown to be a fundamental part of the design process. The studio also explores the promise and limits of new technologies, including computational design processes and digital fabrication, in the production of architecture.

Components: STU.

Grading: GRD.

Typically Offered: Spring.

ARC 606. Great Cities Design Studio. 6 Credit Hours.

The Great Cities Design Studio operates as a form of design-based critical inquiry into issues of urban design and resilience, and the use / reuse and transformation of buildings and spaces. This studio is conducted on-site in Rome, which serves as the subject of extensive student analysis and observation. Students will discover the layers of Rome, combining archaeology with architecture and urban history. Coursework emphasizes a critical reassessment of the historic urban site relative to questions of program, infrastructure, and cultural changes.

Components: STU.

Grading: GRD.

Typically Offered: Summer.

ARC 607. Advanced Architectural Design Studio. 6 Credit Hours.

Habitation + Housing. This advanced design studio addresses the complex interrelationships of a building, its context, and the defined program of housing. Through precedent research, key readings, typological studies and urban analysis, students will engage a critical discourse on the history and potential futures of architecture for domestic habitation. Exercises will focus on the application of material languages and material assemblies into the construction of buildings, as well as the interaction of buildings with people, climate resources and culture.

Components: STU.

Grading: GRD.

Typically Offered: Fall.

ARC 608. Integrated Architecture Design Studio. 3-6 Credit Hours.

Advanced Design Studio focusing on skills associated with making integrated architectural design decisions across multiple systems. Design decisions within a complex architectural project will focus on the consideration and broad integration of environmental stewardship, technical documentation, accessibility, site conditions, life safety, environmental systems, structural systems, and building envelope systems and assemblies.

Components: STU.

Grading: GRD.

Typically Offered: Spring.

ARC 609. Architecture Design. 3-6 Credit Hours.

Vertical Studio: student and faculty select areas of in-depth study in housing, resiliency, healthcare, urban design, housing and hospitality, historic preservation etc.

Components: STU.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

ARC 610. Architecture Design Degree Project. 6 Credit Hours.

The Architecture Design Degree Project takes one of three forms: 1) an individual design thesis on a topic selected and developed by the student through rigorous research, or 2) a directed design research group or 3), or a Vertical Studio. Individual thesis is an opportunity for each student, working with a faculty advisor, to define an individual position with regard to the discipline of Architecture. In contrast, design research groups are led by faculty, and address relevant architectural questions through the lens of the faculty's areas of expertise. All graduating students will be required to present their Degree Project, comprising research, analysis and creative work, through a juried review and as a book.

Components: THI.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

ARC 611. Spatial Representation + Architectural Media 1. 3 Credit Hours.

As the first in a two-module sequence, this course introduces fundamental concepts, methods, and techniques in architectural representation. Exercises are designed to teach students geometric principles, projective systems and associated drawing types, spatial representation, and proficiency in the many tools and media essential to architectural design.

Components: STU.

Grading: GRD.

Typically Offered: Fall.

ARC 612. Advanced Visual Analysis. 3 Credit Hours.

Drawing as a means of analyzing and recording visual experience. Composition, form, light, color and drawing as a primary device in the mental registration of visual experience.

Components: STU.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

ARC 613. Spatial Representation + Architectural Media 2. 3 Credit Hours.

As the second in a two-module sequence, this advanced course builds on the methods of spatial representation explored in the prior course. Exercises will focus on advanced geometric modeling, and examine the reciprocity between digital spaces and material realities, through literacy in computational design processes and digital fabrication.

Components: STU.

Grading: GRD.

Typically Offered: Spring.

ARC 614. Michelangelo. 3 Credit Hours.

Drawing as a form of research across mediums to understand historical research and interpretation of Michelangelo's work.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 615. Advanced Architectural Media. 3 Credit Hours.

This advanced course in digital media will build upon fundamentals of architectural representation and expand to notions of computation, data processing, and mapping. Simultaneously, students will gain fluency through experimental means of representation and digital fabrication techniques within a design workflow.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 616. Architectural Watercolor Renderings. 3 Credit Hours.

This course will use freehand drawing and watercolor painting as a vehicle to study and record the urban and architectural conditions of Coral Gables and other South Florida sites. Particular emphasis will be placed on the analytical potential of sketches (recording space, light, surfaces and color).

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 617. Construction Documents. 3 Credit Hours.

Working drawings and specifications. Form, content and role of constituent parts of working drawings and specifications by using case studies.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 618. Documentation of Historic Architecture. 3 Credit Hours.

Principles of preservation and restoration, research methods, measured drawings, surveying methods, and case studies.

Components: LEC.

Grading: GRD.

Typically Offered: Summer.

ARC 619. Architecture and Color. 3 Credit Hours.

This course focuses on the theory and practice of color and its application to architectural design. Topics include color history from Newton through Albrecht, the relationship between color practice in science versus art, and the discipline of color in architecture from the Neoclassical movement through the Modern Movement.

Components: LEC.

Grading: GRD.

Typically Offered: Summer.

ARC 620. Responsible Architecture. 3 Credit Hours.

A responsible architecture is one that takes into consideration - and at times challenges - the history, context (urban or otherwise), ecology, sustainability, social equity, and aesthetics of the built environment, as well as the health, joy, and well-being of the people who inhabit it. This course will address architecture from a distinctly human perspective, keeping in mind how we are all inextricably linked to the world around us, both natural and architectural. Moreover, it asks students to examine their architectural thinking and practice in relation to society and to reflect on their experiences as individuals and members of dynamic communities. To focus on sustainability, typology, urbanism, or aesthetics alone would be to negate architecture's rich interconnectedness. The embrace of the arc of responsibility requires this multi-layered responsive approach to achieve a truly inspiring architecture.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 621. Housing, Infrastructure and Transportation. 3 Credit Hours.

Case studies in sustainable urban design, with a special focus on housing and affordability questions. Survey and assessment of innovations in community design and building. Examples from the late nineteenth century to contemporary practice illuminate environmental, social, and economic goals and impacts in urban design. Emphasis on methodology through the realization of an individual or group research project over the length of the semester.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 622. Urban Design Theory and History of the Modern City. 3 Credit Hours.

Building and Imag(in)ing the metropolis. Survey of urban theories and projects with emphasis on morphological context, typology and composition (1850-2000). Methods of urban analysis and presentation. Discussion of critical texts about formal and informal urban design.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

ARC 623. Urban Design Competition. 1-3 Credit Hours.

Intensive, collaborative urban design project, combining master planning and real estate development expertise, to be submitted to international peer reviewed competition. Project teams are comprised of students from several different degree programs, such as architecture, urban design, real estate development, business, and law.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

ARC 624. Select Topics in Interior Architecture Design. 3 Credit Hours.

Principles and technical components of interior design. Topics include interior volumetrics, finishes, furnishings and lighting.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 625. Landscape Arch Design I. 3 Credit Hours.

Analysis and design of landscape spaces. Studies in historical precedent, gardens, parks, plazas, squares, and response to urban and architectural context.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 626. Landscape Arch Design II. 3 Credit Hours.

Analysis and design of landscape spaces. Topics include ecological principles, landforms and plant materials.

Components: LEC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

ARC 627. Architecture Photography. 3 Credit Hours.

Photography with emphasis on architectural subjects. Introduction to visual principles, photographic equipment, materials, and techniques.

Components: LEC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

ARC 628. Historic Preservation. 3 Credit Hours.

Basic design principles for the rehabilitation of historic buildings and districts. Evaluating character-defining details; significance analysis; context of setting issues within historic districts; applying the Secretary of the Interior's Standards for rehabilitation.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

ARC 629. Research in Design-Methods and Procedures. 3 Credit Hours.

Application of research methods and procedures to design issues. Historical, descriptive, analytic, experimental research methods; tools for data manipulation and communication.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 630. Building Technology I: Materials and Methods. 3 Credit Hours.

Material characteristics of enclosure and structural systems, case studies in traditional and modern building construction; Topics include properties of building materials: wood, masonry concrete, steel and glass construction techniques; on-site and off-site processes; exterior finishes, assemblies, detailing and basic building code concepts.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 631. Building Technology II: The Form of Forces. 3 Credit Hours.

The geometries and forces of funicular structures, axially loaded members and surfaces. In a project-based curriculum. The dualisms of funicular geometries and force polygons are explored through graphic statics as tools for design and techniques of analysis. Topics include: Free-body, Form-finding, Equilibrium, Force polygon, Developable and Non-developable Surfaces.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

ARC 632. Structure Pt. I - The Form of Forces in Elements. 3 Credit Hours.

Introducing the tectonics and statical behavior of the principal elements of building structure the course addresses the fundamentals of loads, materials & the analysis of building elements which resist load through form and vectored force. The objective is to develop a basis for deciphering the flow of forces in structural elements. Topics include equilibrium, loads, codes, material behavior & form-finding.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

ARC 633. Structure Pt. II - From Elements to Assemblies. 3 Credit Hours.

The elements of structure are combined to create assemblies both simple and complex through the analysis of building elements which resist load through section, the principles of sizing and connection. The objective is to develop a basis for composing structural systems. The composition, construction and behavior of frames and assemblies is investigated. Topics include techniques for system layout, preliminary dimensioning & computational design.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 634. The Palazzo in Italian Architecture. 3 Credit Hours.

Study of the development of the Renaissance and Baroque palazzo in Rome and other important centers of art and culture. Emphasis on the socio-political context.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 635. Historic Italian Urbanism. 3 Credit Hours.

Study of Italian cities and towns from medieval to contemporary times, including a comparative analysis of history and form.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 636. Italian Gardens. 3 Credit Hours.

Study of Italian garden design during the Renaissance, Baroque and Mannerist periods. Emphasis on historical and political context.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 637. Research in Rome. 3 Credit Hours.

An exploration of Roman history, architecture and urban form through lectures, on site study and drawing assignments. Emphasis on chronological and spatial sequence of development.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 638. Interior Architecture Design. 3 Credit Hours.

Principles and technical components of interior design. Topics include activity, analysis, finishes, furniture, fixture, lighting, and acoustics.

Components: LEC.

Grading: GRD.

ARC 639. Adaptation to Climate Change. 3 Credit Hours.

Introduction to the phenomena and related discussion on the topic of climate change. Review of current scientific evidence, tactics for mitigation of emissions and other causal actions, followed by study of the adaptation required by changing conditions. Class assignments include creative proposals for adaptation action.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 640. Tropical Architecture. 3 Credit Hours.

A discussion of tropical architecture and the theme of tropicalism. Research, analysis and documentation in drawing of selected case studies

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

ARC 641. Seminar on Town Design. 3 Credit Hours.

Introduction to the lexicon of urbanism; analytical presentations of the concepts of: region, town, neighborhood, corridor, district, and building type; inter disciplinary presentations, review, and criticism of current town and urban design projects.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 642. Seminar on Housing. 3 Credit Hours.

Introduction to domestic building typology; exploration of the concepts of low, medium, and high density housing with attention to social, environmental, and economic issues; presentations of current case studies.

Components: LEC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

ARC 643. Seminar on Retrofit of Suburbia. 3 Credit Hours.

Introduction to the critical reconstitution of the city; theory and history of the concepts of revitalization and redevelopment; presentations, review, and criticism of current case studies.

Components: LEC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

ARC 644. The Architecture of Palladio. 3 Credit Hours.

On site study of the architecture and urbanism of Andrea Palladio. Emphasis on the artistic precedents of the Veneto Region.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 645. Urban Composition. 3 Credit Hours.

Survey and analytical review of urban rooms as the vessel of human activity in urban culture. Study of proportional and compositional aspects of urban rooms together with economic, social, and cultural factors. Readings and discussion format.

Components: LEC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

ARC 646. Studies of Havana. 3 Credit Hours.

Analysis of the physical structure of a major city and its environments including an exploration of its history and iconographic themes, mapping and building studies.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

ARC 647. Architecture and Urban Identity. 3 Credit Hours.

Study of the relationship between architecture and urbanism focusing on the ways by which architecture provides urban identity and image of place.

Case studies relating monuments, fabric and urban plans to their culture, time and place. Lecture and seminar format.

Components: LEC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

ARC 648. Seminar in Community Development. 3 Credit Hours.

Study of the contemporary context for the development of the physical environment. Examination of public, private and third sector implementation of building and community design. Format: guest speakers, readings, discussions, and seminar.

Components: LEC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

ARC 649. Construction and Project Management. 3 Credit Hours.

Management of construction projects including legal considerations and techniques of management science applied to construction. Includes engineering methods of cost and time estimating, and exercises in applications of engineering economics, flow charts, tracking progress, construction contracts, indemnity agreements, and network planning techniques including CPM and PERT.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 650. Professional Lecture Series. 3 Credit Hours.

Real estate transactions and deal structuring from the development perspective. Using the case study method, the course explores the key components and the disciplines needed for successful real estate transactions and projects.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 651. Contemporary Theories of Architecture. 3 Credit Hours.

Theoretical basis of modern architecture and different present currents and movements. Agrarianism, technism, orthodoxy, brutalism, scientism, revivalism, consumerism, rationalism, classicism.

Components: LEC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

ARC 652. Management of Professional Practice. 3 Credit Hours.

Overview of the practice and the profession, legal and ethical concerns, business types and management practices, traditional and non-traditional practices and services, contracts and contractual relationships, disputes and risk management.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 653. Urban Representation + Sketching. 1 Credit Hour.

Using the city as a real-world testing ground, this course introduces students to problems of spatial representation at scales beyond the architectural object. Techniques including hand-sketching, situationist experience mapping, and photographic collage, are taught through a series of weekly in-class exercises held at different sites throughout the city. These exercises advance a student skillset to enable effective analysis and assessment of urban conditions.

Components: LEC.

Grading: GRD.

Typically Offered: Summer.

ARC 654. Architecture of South Florida. 3 Credit Hours.

History of architecture and human settlements. Studies of significant architectural landmarks and urban design of the South Florida Region, chronological growth of Miami, Miami Beach, Coral Gables, Key West and Palm Beach.

Components: LEC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

ARC 655. 18th and 19th Century American Architecture and Architects. 3 Credit Hours.

The course concentrates on the development of early American architecture, Architects and Urbanism primarily but not exclusively to 17th, 18th and 19th centuries with particular emphasis on theoretical, technological and cultural developments in America.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 656. Parametric Tectonics. 3 Credit Hours.

From simulating the nuances of physics to visualizing precise climate data, computational tools are enabling the architect to do more and to think differently. This introductory course to computational design will expose students to a parametric-based approach to architectural making. The course will involve the use of visual scripting tools (Grasshopper for Rhino3D) for iterative design explorations and building performance analysis to both generate and evaluate design outcomes.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 657. Design and Fabrication Techniques. 3-6 Credit Hours.

Design, construction and detailing of wood and other materials as applied to furnishings and interiors. Workshop includes research, exercises, documentation and a final project.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 658. Theories of Landscape Architecture. 3 Credit Hours.

Leading theories of landscape architecture which have influenced current considerations of nature, landscape and design, including concerns such as urban heat island effect, climate change resilience, and health impacts of landscape.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 659. Sustainability and LEED Exam Prep. 1-3 Credit Hours.

Study of U.S. Green Building Council standards for environmental efficacy in building and neighborhood design. Emphasis on fundamental knowledge of green building concepts, including transportation, energy, water and air quality. Includes preparation for LEED Accreditation Exam and registration for exam that provides the credential signifying expertise in green building and a LEED rating.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 660. Contemporary Latin American Architecture. 3 Credit Hours.

An examination of Contemporary Latin American Architecture and Urbanism from the turn of the 20th Century to the present day. The work of some of the great figures on Latin American Modernism such as Niemeyer and Barragan, to contemporary figures such as Paulo Mendes da Rocha and Isay Weinfeld will be discussed. The influence of the Modern Movement in Europe and Le Corbusier will be reviewed. Large scale City Plans such as Lucio Costa's Plan for Brasilia and Roberto Burle-Marx's designs for Flamengo Park and Copacabana in Rio de Janeiro will be analyzed.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

ARC 661. Building Technology I: Materials and Methods.. 3 Credit Hours.

Material characteristics of enclosure and structural systems, case studies in traditional and modern building construction. Topics include properties of building materials: wood, masonry concrete, steel and glass construction techniques; on-site and off-site processes; exterior finishes; assemblies, detailing and basic building code concepts.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 662. Environmental Building Systems I. 3 Credit Hours.

Course content aims to broaden enrolled student's understanding of energy, specifically the agency of energy to act as a design directive for architectural form making, spatial configuration, material selection and the surrounding environmental contexts— natural and constructed. The course will address fundamental design principles associated with site orientation, psychometrics, passive design, active systems, and building envelope and assemblies.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 663. Environmental Building Systems II. 3 Credit Hours.

Directly building on Environmental Building Systems I, the course sets an agenda for the future architectural profession to formulate a more substantial and meaningful role for energy, both consumption and embodiment in the design of our constructed environment. Course content will address fundamental principles associated with natural and constructed lighting systems, passive, and active thermal systems, power generation and distribution, water management, and acoustics in architecture.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

ARC 664. Introduction to Hotel Design and Development. 1-3 Credit Hours.

This course will provide an introduction to hotel design and development in a seminar format that brings a variety expertise from guest speakers involved in the design, development, market and operational aspects of hotel and resort development.

Components: SEM.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 665. Parametric Design + Computation. 3 Credit Hours.

An introduction to the possibilities afforded by advanced computational tools for architectural design, coupled with a rigorous exploration of their limits. The course consists of weekly and bi-weekly exercises, designed to introduce key concepts and skills through calibrated design problems. Major topics include parametric modeling and its associated epistemology, the contrasting logics of solver-based and genetic algorithms, and the emergence of simulative environments.

Components: STU.

Grading: GRD.

Typically Offered: Fall.

ARC 666. Architecture Portfolio. 3 Credit Hours.

The course focuses on the development and production of an architecture portfolio with emphasis on fundamental techniques in layout, image composition, and other graphical representation skills. Through a series of assignments, students learn to evaluate color, depth, hierarchy, and scale within a layout. While focus is centered on creating a design portfolio, the topic of online presentation, individual brand, and job interviews are addressed.

Components: LEC.

Grading: GRD.

Typically Offered: Summer.

ARC 667. History of Architecture. 3 Credit Hours.

Studies in the history of architecture and urban design. Focus on religious, civic and domestic buildings and their settings, and regional constructional and compositional traditions in the Middle East and the West from prehistory to the 17th century.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

ARC 668. Diverse Histories of Architecture 20C. + Beyond. 3 Credit Hours.

This course is an introduction to non-Western and non-Eurocentric built environments, both historical and contemporary. It unpacks how the discipline of architecture is conditioned by larger societal forces including questions of race, gender, politics, economy and identity, through non-linear survey and case studies that reference both current and historical architectural discourse. Interdisciplinary lenses including political theory, sociology, and black studies, among others, prompt critical reflection on a range of topics such as urban renewal and gentrification, racism, migration, and colonialism. Through analyses of the ethnographic and vernacular roots of architectural form, the course offers a vastly expanded architectural canon, including works originating in non-Judeo-Christian, West African, Islamic, and Meso-American civilizations.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

ARC 669. Directed Readings. 3 Credit Hours.

A structured program of readings and essays organized by the student and his/her graduate supervisor constituting a preparation for graduate research in the student's chosen area of interest.

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

ARC 670. Modern Architecture. 3 Credit Hours.

History of architecture, landscape, and city design in the modern era.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

ARC 671. Ancient Architecture. 3 Credit Hours.

History of architecture and human settlements. Western European prehistory, Egypt, Mesopotamia, Persia, Aegean and Mediterranean, Greece, Rome.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 672. Selected Topics in World Architecture. 3 Credit Hours.

History of architecture and human settlements. Islamic Near East, North Africa, Hindu and Buddhist India, Nepal, S. E. Asia, China, Japan, Pre-Columbian America.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 673. Early Christian, Byzantine, and Medieval Architecture. 3 Credit Hours.

History of architecture and human settlements. Early Christian and Byzantine architecture in Italy, the Near East, Greece, North Africa, Eastern Europe, Medieval architecture in Western Europe.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 674. Renaissance Architecture. 3 Credit Hours.

History of architecture and human settlements. Renaissance and Baroque architecture in Italy, France, Spain and Portugal, Great Britain, Austria, Germany, and neighboring countries.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 675. Colonial Architecture. 3 Credit Hours.

History of architecture and human settlements. Iberian and British Colonies from the 16th through the 19th centuries: North and South America, Caribbean, India and Africa.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 676. 19th and 20th Century Architecture. 3 Credit Hours.

History of architecture and human settlements. America and Europe during the 19th and 20th centuries; cultural, technological and theoretical development.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 677. The Architecture of Alvar Aalto. 3 Credit Hours.

An examination of the architecture of Alvar Aalto through the analysis of selected buildings.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 678. Italian Rationalist Architecture. 3 Credit Hours.

History of Italian architecture and urban design between 1914 and 1950: cultural, technological, and theoretical developments; relationship between architecture, politics and propaganda; related survey of the period in other countries (France, German, Soviet Union).

Components: LEC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

ARC 679. An Introduction to Resilient Building and Community Design. 3 Credit Hours.

This course introduces students to the relationships between climate, resiliency, architecture and urbanism; building awareness of the growing challenges and opportunities ahead, and the intersections between these disciplines. What does resilience mean in this broader context, and how should escalating stressors and shocks be addressed? Students learn about climate sciences, then research, document, and analyze evolving resilient design strategies, at the scale of buildings, neighborhoods and cities, in the end, applying those lessons to a given case study site; developing a holistic set of resilient design recommendations. During the course, students interact with specialists in the fields of architecture and urban design, as well as related fields, such as engineering, social, marine and environmental sciences, and/or policymakers, to better comprehend first-hand the interwoven scientific, social, environmental, and governmental ramifications to resilient design. Lastly, students learn the mechanics of participatory design methods employed to engage communities in related efforts.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 680. Professional Advancement, Internship + Research (PAIR). 3 Credit Hours.

Research Component of PAIR program. Student, host office and faculty collaboratively develop a focused, in-depth research project related to the tasks the student is completing as part of the Internship Component of the PAIR program. Application and PAIR committee acceptance required prior to enrollment.

Components: RSC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

ARC 681. Special Problems. 1-3 Credit Hours.

Group or individual investigations of significant architectural issues, offered by special arrangement only.

Components: STU.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

ARC 682. Special Problems. 3-6 Credit Hours.

Group or individual investigations of significant architectural issues, offered by special arrangement only.

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

ARC 683. Special Problems. 3 Credit Hours.

Group or individual investigations of significant architectural issues, offered by special arrangement only.

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

ARC 684. Special Problems. 3 Credit Hours.

Group or individual investigations of significant architectural issues, offered by special arrangement only.

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

ARC 685. Special Problems. 3 Credit Hours.

Group or individual investigations of significant architectural issues, offered by special arrangement only.

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

ARC 686. Special Problems. 3 Credit Hours.

Group or individual investigations of significant architectural issues, offered by special arrangement only.

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

ARC 688. Professional Portfolio. 1 Credit Hour.

This course guides students in the ongoing process of creating an individual portfolio, with emphasis on how to conceive, design, compile and revise one successfully. Throughout architectural education, this portfolio serves as the primary medium for student self-assessment, and eventually becomes the dominant component in professional job applications. Topics covered include identity, layout, composition, graphics and representation, print and digital formatting.

Components: STU.

Grading: GRD.

Typically Offered: Fall.

ARC 689. Profiles in Practice. 1 Credit Hour.

An introduction to the architectural profession through an analysis of the diverse practices participating in ongoing U-SoA lecture series. Prior to each lecture, students research the mission, scale, structure, project types, methods and biases of the lecturers' professional practices. Post-lecture analysis provides a forum to discuss the range of professional practices in Architecture.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

ARC 690. History of Cities. 3 Credit Hours.

Historical overview of the origin and development of cities around the world. Emphasis on intentional form of settlements (the ideal) as well as response to economic and political imperatives such as trade and defense (the real).

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 691. Analysis and History of Urban Form. 3 Credit Hours.

The course examines the emergence and development of the city, with a specific emphasis on how urban form is created, transformed, and invested with social, cultural, and political meaning through monumental structures and specific housing typologies. Taught in situ—both through site visits and world-focused lectures—students develop a precise understanding of global traditions of urban form. Topics range from streets, public places and the design of building frontages to urban silhouettes, edges and infrastructures.

Components: LEC.

Grading: GRD.

Typically Offered: Summer.

ARC 692. Cinema and Architecture. 3 Credit Hours.

The class studies the relationship between architecture and cinema. Lectures, film screenings, and readings, explore the origin and development of filmic space with an emphasis on its relation to the real and poetic image of the city. The class analyzes selected films as they relate to, comment, criticize, and anticipate the development of contemporary concepts of space, urban space, interior space, etc.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

ARC 693. Computer Animation. 3 Credit Hours.

Explores the use of computer animation and advanced visualization techniques in architecture with emphasis on texture and lighting, spatial choreography and story-boarding.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

ARC 694. Geographic Information Systems in Urban Design. 0-3 Credit Hours.

Exploration of Geographic Information Systems (GIS) in urban design. Principles of GIS and their application to spatial analysis, data management and visualization.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

ARC 695. Interactive Multimedia in Design. 3 Credit Hours.

Integration of text, video, sound, and computer graphics to create an interactive electronic information medium.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

ARC 696. Advanced Topics. 3 Credit Hours.

Subject matter offerings based upon student demand and availability of faculty. Subtitles describing the topics will be shown in the printed class schedule, following the title "Advanced Topics".

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

ARC 697. Designing for the Internet of Things. 3 Credit Hours.

This course examines how current research and development in embedded computation bears on architecture, landscape, and urbanism. Students will explore the implications and impact of ubiquitous computing in its potential to change the way we conceive, construct, inhabit and interact with our buildings, landscapes, and cities.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ARC 698. Introduction to Programming for Architects. 3 Credit Hours.

As digital tools continue to play an increasing role in the Architect's toolkit, it is becoming increasingly important that Architects not only understand how to use and navigate these tools but to customize and adapt them to their specific needs. Learning how to program allows Architects to start to fully utilize the potential in digital tools by maximizing the possibilities in not only 3D modeling and digital fabrication but in responsive architecture, embedded computation and animating spaces contributing to a more dynamic and potentially inter-connected built environment.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

ARC 699. Directed Research. 3 Credit Hours.

This course presents design research processes fundamental to defining clear problems and architectural proposals. Through a series of exercises, presentations and conversations, students will learn to articulate and defend their interests and positions. Exercises will include literature research, precedent analysis, statement writing, site documentation, programming and diagramming. These avenues of inquiry will serve to provide both historical and critical context to students' interests, connect them to relevant discourse, and help them clarify their own visions. This work will be presented in a juried review and collected as a booklet. For students moving on to ARC 610, these outcomes will directly serve their Design Degree Projects, either as a conventional Individual Thesis or as part of a Design Research Group. Other students will be expected to develop a similar proposition, positioning themselves professionally and academically within the field of Architecture.

Components: RSC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

ARC 701. Masters Final Project. 6 Credit Hours.

Individually supervised projects. Required as a 6 credit course for all Master of Architecture in Computing students electing a final project.

Components: THI.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

ARC 720. Research in Residence. 1 Credit Hour.

Used to establish research in residence for the thesis or final project for the master's degree after the student has enrolled for the permissible cumulative total in ARC 699 or ARC 710 (usually six credits). Credit not granted. May be regarded as full-time residence.

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

ARC 810. Master's Thesis. 1-6 Credit Hours.

The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

Components: THE.

Grading: SUS.

Typically Offered: Fall, Spring, & Summer.

CMA 601. Fundamentals of Construction Management. 3 Credit Hours.

Fundamentals of Construction Management is an introductory-level, graduate course. This course is designed to provide students with introductory knowledge and basic skills they will need to understand and apply as they progress through the program. Students receive an overview of key topics that will be covered in greater detail through core courses and electives during subsequent terms. Each class session provides a primer on a specific area of vital importance, including scheduling, cost estimating and Project Management. Upon completion students will be familiar with basic concepts, terminology, and procedures associated with the industry, and well prepared to study these subjects in greater depth.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

CMA 603. Critical Thinking and Communications in Design and Construction. 1 Credit Hour.

Critical thinking is the driver of effective communication. In general, critical thinking is the ability to deal with the contradictions and problems in a tumultuous environment in a reasoned, purposeful and productive way. Decisions are made using an approach that is fair, objective, accurate and based on information that is relevant to the situation. The pursuit of critical thinking equips leaders and managers think rationally, provide sound reasoning and develop a coherent argument. In this Course, students identify and use critical thinking skills, processes and techniques to effectively communicate their ideas.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

CMA 610. Financial Management and Accounting for Construction. 2 Credit Hours.

Students in this course study the management of construction company and construction project finances. They learn the fundamentals of construction accounting and depreciation, prepare financial statements for a construction company, analyze company's financial health, conduct cost and profit center analysis, prepare and forecast cash flows, and use the technique of time value of money for economic decision making.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

CMA 620. Construction Project Controls. 2 Credit Hours.

Project Planning, Scheduling & Control is the process of coordinating numerous and often complex elements to erect a structure and satisfy the needs of a sophisticated owner. Study of methods for coordinating people, equipment, materials, money, and schedule to complete a project on time and within approved cost. Each phase of the work must be monitored and measured. You cannot control if you cannot measure and you cannot measure if you cannot count. It then becomes the goal of project controls to quantify and govern costs and the goal of the scheduling process to quantify and visualize the progress of the job and make the necessary changes to deliver a successful job.

Prerequisite: CMA 601.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

CMA 630. Contract Documents. 2 Credit Hours.

Students in this class will gain a basic knowledge of construction contract documents including agreements, contracts, drawings and specifications, requests for information, change orders, and other documents that make up the body of Contract Documents associated with a given project. The course focuses on understanding the relationship between, contract documents and the construction process, as influenced by Project Delivery Methods We will explore contractual relationships, legal roles and responsibilities, and contract types.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

CMA 632. Construction Risk Analysis and Control. 2 Credit Hours.

Construction Risk Management is an advanced-level, graduate course designed especially for disciplines involved in creating the built environment (e.g., architecture, urban planning, infrastructure-related engineering disciplines). The focus will be on identifying and managing risks at the project. A variety of risk analysis concepts, tools and methodologies will be utilized.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

CMA 636. Legal Issues in Building Construction. 3 Credit Hours.

This course examines problems that can arise during the course of construction due to different interpretations by various project team members of contract document provisions and communications. These problems can significantly affect the risk, schedule and cost of a project. Students will be encouraged to work in small groups to identify, and to recommend specific actions to avoid and to minimize adverse impacts of, ambiguous contract provisions and project communications.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

CMA 640. Virtual Design and Construction (VDC/BIM). 3 Credit Hours.

The building industry is rapidly adopting Virtual Design and Construction (VDC) and Building Information Models (BIM) throughout the project process; design, construction, and facilities management. VDC and BIM are increasingly becoming an umbrella term for a variety of software tools, design methods, and construction processes that allow for more automation, communication and integration between project participants. This course reflects on emerging technologies in the context of Project Management and Integrated Delivery, and includes modeling, visualization, 3D clash detection, digital site layout, 4D modeling, as-built model generation, and digital information management. This course will first introduce basic VDC and BIM concepts and review industry examples of how these concepts play out on design and construction projects.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

CMA 642. Emerging Technologies in Design and Construction. 2 Credit Hours.

Technologies emerge in part to address the needs of society, improve sustainability and resiliency, and increase productivity and thus profit margins. There is an undeniable need for efficiency in managing the construction process, and emerging technologies offers perhaps the best opportunities to improve the construction process through better integration and efficiency. This course surveys cutting edge technologies in the construction industry and their applications in the design and construction process.

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

CMA 644. Sustainable Development. 2 Credit Hours.

This course provides the students with an understanding of the environmental and resource implications of construction activity within the context of sustainable development. It considers the theoretical and methodological basis of approaches designed to quantify the impacts associated with choices made at different stages of the construction life cycle, as well as tools designed to evaluate relative environmental and sustainability performance

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

CMA 654. Introduction to Health and Safety. 1 Credit Hour.

Introduces occupational safety hazards associated with the construction industry. Emphasis placed on recognition, evaluation and control of safety hazards particularly as they relate to the Occupational Safety and Health Act.

Components: SEM.

Grading: GRD.

Typically Offered: Summer.

CMA 670. Construction Site Practicum (Materials and Methods Health and Safety). 2 Credit Hours.

This course allows students to participate in a supervised work program where they apply MCM coursework knowledge in a practical setting. Students will complete 2 rotations per term. Each rotation will be at a different job site and with a different corporate sponsor. Work is supervised by a SoA faculty member and a corporate sponsor. Students develop conceptual and professional skills related to their practice at a construction site. a minimum of 20 hours per week (140 hours per 7-week rotation). Students will also meet with their faculty supervisor 1 hour per week during the term to review progress. Satisfactory performance at the field placement and during on-campus class meetings must be demonstrated before students can proceed to the Professional Internship (CMA 674).

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

CMA 671. Construction Management Practicum (Project Management). 2 Credit Hours.

This course allows students to participate in a supervised work program where they apply MCM coursework knowledge in a practical setting. Students will complete 2 rotations per term. Each rotation will be at a different job site and with a different corporate sponsor. Work is supervised by a SoA faculty member and a corporate sponsor. Students develop conceptual and professional skills related to their practice at a construction office a minimum of 20 hours per week (140 hours per 7-week rotation). Students will also meet with their faculty supervisor 1 hour per week during the term to review progress. Satisfactory performance at the field placement and during on-campus class meetings must be demonstrated before students can proceed to the Professional Internship (CMA 673).

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

CMA 674. Capstone Project. 3 Credit Hours.

The Construction Management Capstone Project course introduces the methods and tools necessary to analyze a set of plans and specifications for an active Miami building project (or projects) and includes a comprehensive review and analysis of documentation requirements for the selected project(s). Students are paired with appropriate industry managers and work in small teams, utilizing knowledge acquired from their core courses to develop and draft a comprehensive, professional level project manual. Review of contract plans and documents as well as site visits and interaction with actual project team members are required. To be taken during the final term of study.

Components: LEC.

Grading: GRD.

Typically Offered: Summer.

CMA 676. Interdisciplinary Design Studio/ Integrated Project Delivery. 3 Credit Hours.

Integrated Project Delivery is an alternative to the traditional design-bid-build approach. It is based on enhanced collaboration among design professionals, clients and the building team. These methods can reduce risk and improve the efficiency of the design and construction delivery process. Integrated practice and integrated project delivery are a response to pressures from building owners for a more efficient and predictable process for designing and constructing buildings, and to the increasing availability of advanced digital technologies such as Building Information Modeling. This is an active learning course. Students enrolled in this course will participate in the integrated Design Studio assuming the role of the Construction consultant providing guidance in the design process including; defining goals and standards, Project Costs, Project Schedule, Project Quality, Sustainability, and Performance. Prerequisite: CMA 640

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

CMA 680. Directed Studies. 1-4 Credit Hours.

This course is designed to provide further study through directed readings, directed research projects or seminars, or special class work related to research in a specific subject related to the construction industry not realizable through an existing course. Students must, in consultation with a faculty member, develop a detailed project proposal indicating the rationale, readings, scope, objectives, and methods prior to beginning the course. Each Directed Studies course is usually initiated in response to student interest and is limited to five or fewer students.

Components: IND.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

CMA 681. Special Topics in Construction. 1-3 Credit Hours.

Group or individual investigations of special topics and current issues relevant to the construction industry. Offered by special arrangement only.

Components: LEC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

CMA 682. Special Topics in Construction. 1-3 Credit Hours.

Explorations of special topics and current issues relevant to the construction industry. Teaching and learning methods vary depending on the subject matter.

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

CMA 684. Special Problems. 1-6 Credit Hours.

Explorations of special problems and current topics relevant to the construction industry. Teaching and learning methods vary depending on the subject matter.

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

CMA 690. Advanced Productivity and Lean Construction. 2 Credit Hours.

The course aims to provide an understanding of the modern concepts and methods in productivity and production system to improve construction practice with lean construction, as well as other tools and techniques for designing and implementing lean construction on projects.

Components: LEC.

Grading: GRD.

Typically Offered: Spring & Summer.

CMA 691. Quality Management and Performance. 1 Credit Hour.

Advanced construction management approaches to quality; process and productivity improvement in construction. Students use of case studies, exercises, and/or term projects to show application of management and quantitative concepts.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

CMA 692. Construction Forensics. 1 Credit Hour.

Construction failure, in its many forms, are both interesting and instructive and in the context of this course, students will study construction failures in their many forms.

Components: LEC.

Grading: GRD.

Typically Offered: Summer.

CMA 694. Codes, Standards and Regulations. 1 Credit Hour.

This course provides students with an awareness of different codes, standards, and regulations applicable to the construction industry, how to find the codes and what roles they play in design and construction. The course takes the student through the history of codes, standards, and regulations, their promulgation and their future.

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

CMA 701. Operating and Managing a Construction Organization. 3 Credit Hours.

Successfully managing a construction company is a multifaceted undertaking that requires knowledge of common business practices, accounting principles, regional economic conditions and expertise in the building process. This course leads students through the how-to's of running a successful, large, complex construction company. It analyzes how the industry actually works, including contractual relationships with clients in all types of projects from design/build to privatization. It covers the business fundamentals of running a construction company, including issues such as surety and insurance: various types of construction organizations, domestic and international; and company culture - inner-workings of a business that can mean the differences between success and failure.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

CMA 702. Professional Leadership Seminar. 1 Credit Hour.

This course will explore in a seminar format leaders and leadership situations. Industry leaders will share years of experience and tell their stories. It is an eclectic group who face diverse challenges. The key elements of leadership will be discussed and a framework for thinking about leadership created to provide focus for discussions. The goal will be to enhance students' understanding of and openness to growth as leaders. It is not to teach students to lead. It is to help them think more insightfully about the subject and gain an understanding of what they can do to become more effective.

Components: SEM.

Grading: GRD.

Typically Offered: Fall.

CMA 708. Preconstruction Services. 2 Credit Hours.

Pre-construction services grew out of construction cost estimating to encompass the other activities in planning a project with the intent to help deliver a satisfactory project that meets the owner's objectives. The preconstruction team participates in design decisions, evaluations, studies, value engineering, value analysis, scheduling, constructability reviews, and more. The course covers the analysis of pre-construction services including, feasibility studies, conceptual estimating, scope definition, cost estimating & GMP, constructability & design review, value engineering, and bid review & comparison.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

CMA 710. Construction Finance, Planning and Analysis. 2 Credit Hours.

This course is designed for industry professionals to enhance their skills in managing the finances of a construction organization and create a sustainable corporate enterprise. The emphasis is on accounting and managerial finance principles from the perspective of a company President or General Manager.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

CMA 720. Advanced Planning and Scheduling. 2 Credit Hours.

In depth understanding of the theory and techniques associated with planning, analysis and control. This is a practice oriented, construction project-planning, management and control course emphasizing standard quantitative and qualitative techniques. The Planning, Management, and Control skills necessary to function effectively on complex projects share a common requirement for understanding scheduling, cost control, and their inter-relationship for ensuring successful project performance.

Components: LEC.

Grading: GRD.

Typically Offered: Summer.

CMA 722. Case Studies in Risk Management. 2 Credit Hours.

Through the case studies and discussion, this course focuses on the safety practices mandated by government regulation and required by good business practice. Exposure analysis, risk management, risk transfer and the costs associated with each will be examined.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

CMA 724. Human Resource Management. 1 Credit Hour.

This course uses case studies to discuss the variety of issues that contribute directly to organizational and professional development. Included are the strategies used to create working environments geared toward success on the job. Managing an organization's people is often the most challenging and complex task required of a manager. It is also the responsibility, if executed well, that permits a person to rise to the senior level of management, or prevents a manager from rising to the senior level if done poorly. The objective of the course is to teach the basic principles of strategic human resource management—how an organization acquires, rewards, motivates, uses, and generally manages its people effectively

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

CMA 726. Case Studies in Construction Management. 2 Credit Hours.

Case Studies in Construction Management uses case studies to analyze and integrate the various disciplines found in the development of the Built Environment from the perspective of Construction Management.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

CMA 730. Managing Legal Issues in Building Construction. 2 Credit Hours.

This course is not intended to make lawyers out of Construction Management students. It is, rather, an effort to introduce those who might become involved in the construction industry to legal issues which are essential elements of construction projects. The course, which will be taught by practitioners and participants in the field, provides an overview of the legal issues which confront the construction executive from proposals and preconstruction services through post occupancy and warranty.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

CMA 734. Prevention and Resolution of Contract Disputes. 2 Credit Hours.

This course covers the variety of contractual relationships in the construction industry and the actions that may result in disputes. Emphasis is given to the steps required for rapid, cost-effective resolution of disputes. Resolution techniques such as negotiating, mediation, arbitration, and litigation are examined, and case studies requiring oral and written presentations are incorporated into the class sessions.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

CMA 740. Project Feasibility Analysis and Valuation. 2 Credit Hours.

This course provides students with the essential tools needed to analyze the feasibility of a real estate development project, including the process for determining the asset's valuation based on projected cash flows. For a construction organization, understanding how a client/owner evaluates project opportunities and forecasts asset performance furnishes valuable insight into the critical cost and revenue assumptions that drive a project's expected returns.

Components: LEC.

Grading: GRD.

Typically Offered: Summer.

CMA 799. Capstone Research. 2 Credit Hours.

This course will guide students in the development of their research topic. It integrates applied classroom and current industry practice and knowledge through observation and interpretation of realistic CM issues

Components: RSC.

Grading: GRD.

Typically Offered: Fall.

CMA 801. Executive Capstone Project. 4 Credit Hours.

The executive program concludes with a 4 credit Capstone Project focused on the assessment of problem areas in a selected project or organization and applying knowledge gained to increase efficiency, eliminate errors and increase profitability.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

RED 601. Introduction to Real Estate Development and Urbanism. 3 Credit Hours.

This course provides a comprehensive introduction to the development of real estate for urban places. Topics span the many challenges encountered throughout the real estate development process, including: researching the social, economic and physical history and character of places, analyzing market sectors and development opportunities, comprehending the regulation of land use and development, navigating the public process for development proposals, raising investment capital, assembling land, formulating programs, assessing the financial feasibility of proposals, selecting appropriate building types, as well as insights on the construction, marketing, and sales phases of real estate development. The course welcomes students from other disciplines who work together with MRED+U students on semester team projects, crafting development proposals that are presented to an interdisciplinary group of faculty and industry professionals at the end of the semester.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

RED 610. Financing Urban Real Estate Development. 3 Credit Hours.

Concepts and techniques for analyzing financial decisions in property development and investment including: real estate economics and investment performance measurement, leasing and property income streams, pro forma analysis, and the basics of investment and construction financing in commercial real estate. Emphasis is placed on value-add and development financial feasibility analysis and decision making.

ARRE_MREDU Academic Program.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

RED 612. Applied Real Estate Finance and Investments: I. 2 Credit Hours.

This course builds a foundation for further study of real estate investments and development. This course provides for advanced application of theory and techniques for the analysis of horizontal and vertical development. Discounted cash flow models are developed and enhanced to address topics including multiple property types, staggered sellouts, and condominiums. Emphasis is placed on analysis where extreme data poverty or uncertainty exist.

Requisite: ARRE_MREDU Program and Prerequisite: RED 610.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

RED 614. Applied Real Estate Finance and Investments: II. 2 Credit Hours.

This course builds a foundation for further study of real estate investments and development. This course provides for advanced application of theory and techniques at the entity and deal-level. Discounted cash flow models are developed and enhanced to address topics including partnerships and waterfalls, income tax considerations and a greater exploration of a variety of public and private debt instruments. Emphasis is placed on analyzing the performance of a prospective development across the entire capital stack.

Requisite: ARRE_MREDU Program and Prerequisite: RED 610 and RED 612.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

RED 618. Technologies and Tools for Commercial Real Estate. 1 Credit Hour.

Students in the Technologies and Tools for Commercial Real Estate will learn basic skills for ARGUS Enterprise, REIS, Co-Star, Real Capital Analytics and/or the latest in Real Estate Technology and Tools. Students will be introduced to concepts of entering leases, budgets, market assumptions or valuation and yield parameters on a repetitive basis. The modules that are covered in the course include Valuation-Cash Flow, Portfolio Level Reporting and Sensitivity. Courses concentrate on practical applications of software and tools through interactive examples and case studies. Participants are exposed to a large cross section of software capabilities, fundamentals and unique nuances. Offered: Spring.

Prerequisite: RED 610.

Components: WKS.

Grading: GRD.

Typically Offered: Spring & Summer.

RED 620. Real Estate Law. 3 Credit Hours.

Fundamentals of law and the entitlement process, including contractual aspects of real estate development, finance, management and ethical issues and a real-world overview of the review and approvals process.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

RED 621. Negotiation Skills. 1 Credit Hour.

Negotiation Skills

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

RED 622. Hospitality. 1 Credit Hour.

Hospitality

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

RED 623. Developing Affordable Housing: An Overview of Real Estate, Regulatory, and Policy Considerations. 1 Credit Hour.

Developing Affordable Housing: An Overview of Real Estate, Regulatory, and Policy Considerations

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

RED 624. Securitization of Real Estate. 1 Credit Hour.

Securitization of Real Estate

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

RED 630. Real Estate Economics and Market Analysis. 3 Credit Hours.

Understanding and knowledge of economics, research, and analysis is fundamental to success in real estate, regardless of the property or development program. This course is a practical and comprehensive class structured to give students the information and tools they need to analyze the market for diverse real estate product types, with a focus on identifying critical market factors that determine development opportunities.

Topics include general economic, business, and real estate cycles; regional and urban growth trends; residential and commercial location theories; equilibrium and capture rate analysis; and advanced demographic analysis and projection techniques to analyze occupancy, rental growth, product absorption, and competitive supply.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

RED 640. Applied Design for Real Estate Development. 1 Credit Hour.

The development of real estate is one of the largest physical impact on a city and as such, a well-informed developer can create value for their investment and the city through good design. This course will introduce and discuss the basic elements of urban design and architecture that add economic, environmental, and social value to a project and make a place distinctive and welcoming. This course will range from master planning the block and lot network, to designing streets, to developing individual lots. Emphasis will be placed on the creation of walkable, car-optional places and the design strategies that create these places. Design considerations will be introduced, along with terms, and steps of the design process to enable the developer to enhance their vision for a site and improve dialogue with design professionals. A drawing background is not required.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

RED 642. Urbanism Practicum. 2 Credit Hours.

This seminar engages students in the on-going dialog on how cities and material culture help define who we are, determine how we live, and affect our personal interactions in the so-called analogue and digital worlds. Weekly open-city seminar/lecture sessions supplemented by on-site discussions and class exercises shall allow participants to define hypotheses and personal critiques regarding the future qualities and effectiveness of the contemporary American city. Faculty will introduce key examples and conceptual frameworks for livable communities, critique and explain our current socio-economic segregation, and provide a medium for advancing architecture, real estate and urbanism practices engaged, morally and ethically, in the production of universal happiness.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

RED 644. Directed Studies. 1-6 Credit Hours.

This course is designated to provide study through directed readings, directed research projects or seminars, or special class work related to research in a specific subject related to the Real Estate Development and Urbanism industry not realizable through an existing course. Students must in consultation with a faculty member, develop a detailed project proposal indicating the rationale, readings, scope, objectives, and methods prior to beginning the course.

Components: IND.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

RED 650. Complex Urban Real Estate Transactions. 3 Credit Hours.

This course analyzes real estate transactions and deal structuring from the developer's perspective. Using the case study method, the course explores the key components and the disciplines needed for successful real estate transactions and projects, with a focus on the complex nature of the real estate development process including negotiation, deal-making, and acquisition & disposition strategies. Guest speakers include leading practitioners and developers from the local real estate community who present real deals and lessons learned. Key topics include: market & financial fundamentals, financing & deal structures, acquisition & site selection, legal issues, entitlements & public-private sector issues, sales & leasing, design & construction, management & operations, and development marketing.

ARRE_MREDU Academic Program. RED 610 or instructor permission.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

RED 660. Urban Redevelopment. 3 Credit Hours.

Urban Redevelopment builds students' competencies for infill and redevelopment practice focusing on: mixed-use development, transit oriented development, barriers and solutions for urban infill development, urban site analysis, repositioning of urban land, vacant and underutilized properties, long-term land leases, tax incentives, historic preservation, public-private partnerships, business improvement districts, tax increment financing, community (re)development districts, parking strategies, urban housing types, and the public process for urban redevelopment projects.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

RED 670. Construction and Project Management. 3 Credit Hours.

Management of construction projects including legal considerations and techniques of management science applied to construction. Includes engineering methods of cost and time estimating, and exercises in applications of engineering economics, flow charts, tracking progress, construction contracts, indemnity agreements, and network planning techniques including CPM and PERT.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

RED 680. Entrepreneurship in Real Estate Development. 3 Credit Hours.

Focuses on management and business practices for building new urban real estate firms capable of leading the industry and assuming competitive advantages over conventional models.

ARRE_MREDU Academic Program.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

RED 690. Case Studies in Real Estate Development. 3 Credit Hours.

Students integrate and apply their learning and skills to complex problem-solving involving a series of intensive real world cases of urban real estate development. Focuses on project feasibility and helps hone the required set of development skills.

Components: LEC.

Grading: GRD.

Typically Offered: Summer.

RED 699. Capstone: Real Estate Development and Urbanism Charrette. 1-3 Credit Hours.

The Capstone is an intensive real estate development and urban design studio in which students apply the knowledge and skills acquired in their UM coursework on a real world, multifaceted, urban development project. The Capstone is organized by the MRED+U program and engages students and faculty from the MRED+U, Architecture, Urban Design and Construction Management programs working in multi-disciplinary teams on a variety of projects including ground-up and redevelopment scenarios as part of an interconnected study area. The Capstone focuses on comprehensive analysis, visioning, program development, public policies and potential partnerships, project planning and design, phasing and construction through the application of advanced development skills in an urban context.

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.