

# Department of Architecture

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## Introduction

Architecture is inherently an interdisciplinary field of study, integrating knowledge from art, science, and the humanities. As a method of practice, it is a complex, collaborative, professional activity aimed at improving the quality of life for people and the planet. The discipline requires creative, critical, agile, and integrative thinking. Architecture deals with highly complex problems and aims to solve them not only competently, but in a way that ennobles society. The curriculum responds to these considerations by offering a series of overlapping sequences in professional and academic coursework.

## Mission

The Department of Architecture engages in progressive knowledge generation, dissemination, and application through its core activities of teaching, scholarship, and service to enhance the quality of life for people and the planet. The department furthers this mission by offering the following degree programs:

- The Master of Architecture (a NAAB-accredited professional degree),
  - the Master of Architecture Track I (5+ year) (<https://catalog.ku.edu/architecture/architecture/master-architecture-five-year/>)
  - the Master of Architecture Track II (2-year) (<https://catalog.ku.edu/architecture/architecture/master-architecture-three-year/>)
  - the Master of Architecture Track III (3- year) (<https://catalog.ku.edu/architecture/architecture/master-architecture-three-year/>)
- The Bachelor of Science in Interior Architecture (<https://catalog.ku.edu/architecture/architecture/bs-interior-architecture-design/>), and
- 2 post-professional graduate degrees,
  - the Master of Arts in Architecture (<https://catalog.ku.edu/architecture/architecture/master-arts-architecture/>)
  - the Ph.D. in Architecture (<https://catalog.ku.edu/architecture/architecture/phd/>)

## Undergraduate Programs

### Master of Architecture Program (Track I: 5+ year)

"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 (<http://www.naab.org/>) (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 six-year, three-year, or two-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."

— National Architectural Accrediting Board

Prospective students who apply for admission to the accredited 5-year degree program and are accepted through the undergraduate admissions process are admitted directly into the Master of Architecture (M.Arch) Track I program. M.Arch (Track I) is a National Architectural Accrediting Board (NAAB) accredited professional degree that makes graduates eligible to sit for licensure examinations to become licensed architects. These students pay undergraduate tuition through the first 4 years and receive the **Bachelor of Arts in Architectural Studies** after completing 4 years of study, then move on to graduate student status for the final year. Students holding a baccalaureate degree apply through graduate admissions and enter a 3-plus-year program (those holding a preprofessional degree in architecture receive advanced standing and usually complete the degree in 2 years plus 1 summer).

## Bachelor of Arts in Architectural Studies

The B.A. in Architectural Studies is designed to serve as a platform or foundational degree for students who plan to specialize in architecture and other disciplines that focus on the design, planning, and construction of the built environment. It is awarded to M.Arch Track I students when they complete the first 4 years of study.

## Bachelor of Science in Interior Architecture

The Bachelor of Science in Interior Architecture trains students to become professional interior designers who focus on creating spaces with people in mind based on design research evidence. The Interior Architecture curriculum is compliant with CIDA (Council for Interior Design Accreditation) Professional Standards. The 4-year program has included some professional degree courses from the School's NAAB-accredited Master of Architecture (M.Arch) program. Students can also take additional courses from the Architecture program during their undergraduate study and receive reduced workload in the M.Arch program (if application is accepted) upon completing the B.S. degree in Interior Architecture.

## Graduate Programs

The Department of Architecture offers 3 distinct plans for graduate study:

1. A **Master of Architecture (M.Arch.)**, a 3-year professional degree for students already holding bachelor's degrees in any field (those with architecture degrees are considered for advanced placement to graduate in 2 years + one summer);
2. A **Master of Arts in Architecture (M.A.)** — Academic/Research Track for students interested in the study of architecture from an academic and scholarly perspective;
3. A **Doctor of Philosophy in Architecture (Ph.D.)** for students interested in engaging in robust, innovative inquiry that adds to the body of knowledge in architecture and its related fields.

Of these 3 degree programs, the 3-year Master of Architecture (M.Arch) is a National Architectural Accrediting Board (NAAB) accredited professional degree that makes graduates eligible to sit for licensure examinations. The other degrees are post-professional degrees that do not place the student on the path for architectural registration. Students seeking a career change into a professional curriculum should apply for admission to the 3-year M.Arch. degree.

## Architecture Departmental Policies

### 1. Transfer Credit

CredTran (<http://credittransfer.ku.edu/>) is a transfer course equivalency system that lists more than 2,200 colleges and universities from which KU has accepted transfer courses in the past. If your school or course is not listed, your evaluation will be completed when you are admitted to KU.

Only grades of C- or higher are accepted in transfer credit toward a degree. Architecture students who wish to transfer design courses may do so only upon submission of a portfolio of work done in such courses. Placement in the professional curriculum is based on completed course work, a review of the comprehensive portfolio of prior work in architecturally oriented courses, and on a space-available basis. The student must conform to the work in residence requirements stated above.

### 2. Architecture Studio Grading Policy

Work evaluated as "satisfactory" is graded C. Work evaluated as "more than satisfactory" is graded B. Work evaluated as "exceptional" is graded A. Work evaluated as "less than satisfactory" is graded D. Work evaluated as "failing" is graded F.

All architecture studios are sequential. A student must successfully complete a studio before advancing into the next studio in the following semester.

If a student receives a grade of D (including + or -) in an architecture studio in any semester, he or she is placed on notice by the school, regardless of overall grade-point average. To be removed from this status, the student must perform satisfactory work ("C-" or better) in the next semester of architecture. If in any subsequent semester the student receives another grade of D (including + or -), he or she must repeat that studio before advancing in the sequence. If the student receives a grade of D (including + or -) in 2 consecutive studios, he or she must repeat the entire architecture year in which the first D level was given.

### 3. Academic Misconduct

If the instructor of any course offered by the Department of Architecture believes that one of their students is guilty of academic misconduct in their course as defined in USRR 2.6.1 (<http://policy.ku.edu/governance/USRR/#art2sect6>), the student may be subject to the Academic Misconduct process as outlined in University Policy (<https://policy.ku.edu/governance/USRR/#art2sect6>).

## Undergraduate Student Policies

(For students in the 1st - 4th year of M.Arch Track I 5-Year program and Interior Architecture program)

### 1. Minimum GPA Required to Graduate

Students must meet or exceed a minimum 2.0 KU Cumulative Grade Point Average (GPA) (just KU grades) and a 2.0 KU + Transfer GPA (KU and transfer grades) in order to graduate with a Bachelor of Arts in Architectural Studies or a Bachelor of Science in Interior Architecture from the Department of Architecture. Applications for graduation will be denied if the student is not in good academic standing as defined by this policy.

### 2. Academic Probation

A student is placed on academic probation after completing a semester at KU without a 2.0 GPA, or upon notification by the Department of Architecture that a student is no longer in good academic standing. For

admissions purposes, students with strong portfolios may be admitted on a probationary basis if their grades or ACT scores are not strong enough.

Probation is not merely a disciplinary action-- it is meant to be a warning that something needs to change for a student to achieve their degree. We work closely with students on probation to help them identify what obstacles prohibited them from achieving their best and make strategies with them for how to improve.

### 3. Continued on Academic Probation

A student may be continued on academic probation if their semester GPA is above 2.00, but the cumulative GPA is less than 2.00.

### 4. Dismissal

Failure to raise the GPA above 2.0 in a semester while on probation may be grounds for dismissal. Students may also be dismissed by the Department of Architecture chair at any time for excessive absences or for failing to make progress toward the degree.

### 5. Good Standing

Students with KU semester and cumulative GPA's of 2.0 or above are in good academic standing.

### 6. Computer Policy

All students in the Department (Architecture and Interior Architecture) must have a laptop or a suitable tablet in all design studios. Students must follow a checklist of minimum hardware- and software- requirements when they purchase a computer. The specifications for studio computing are available here (<https://arcd.ku.edu/archtech/>).

## Graduate Student Policies

(For students in the 5th year of M.Arch Track I, M.Arch Track II/III, and MA/PhD programs).

### 1. Minimum GPA Required to Graduate

Graduate students must maintain an expected level of performance throughout their program. Students must be in good academic standing to graduate. Applications for graduation will be denied if the student is not in good academic standing as defined by this policy. For degree- and certificate-seeking graduate students, a minimum cumulative GPA of 3.0 or higher is required for the student to graduate.

### 2. Academic Probation

A student may be placed on academic probation after completing a semester at KU without a 3.0 GPA, or upon notification by the Department of Architecture that a student is no longer in good academic standing. Graduate students may be placed on academic probation for failure to maintain the expected level of performance and rate of progress in a degree program.

Probation is not merely a disciplinary action-- it is meant to be a warning that something needs to change for a student to achieve their degree. We work closely with students on probation to help them identify what obstacles prohibited them from achieving their best and make strategies with them for how to improve.

### 3. Dismissal

Failure to raise the GPA above 3.0 in a semester while on probation may be grounds for dismissal. Students may also be dismissed by the

Department of Architecture chair at any time for excessive absences or for failing to make progress toward the degree.

Students who have been dismissed from a graduate program may be readmitted for further graduate study at KU only by petition of the school that will accept the student.

The Vice Provost of Graduate Studies must review the petition to determine final action.

## 4. Good Standing

Students with KU semester and cumulative GPA's of 3.0 or above are in good academic standing.

## Courses

### ARCH 100. Architectural Foundations I. 4 Credits.

An introductory design studio directed toward the development of spatial thinking and the skill necessary for the analysis and design of architectural space and form. This course is based on a series of exercises that include demonstrating observational and analytical skills through freehand drawing, full-scale studies in the making of objects that explore the relationship between 2D and 3D through mapping and extruding, and the design of a sequence of architectural spaces that explores path-space relationships and threshold. Students are introduced to different descriptive and analytical media and techniques of representation to aid in the development of critical thought, including orthographic projection, paraline drawing, exploded views, and measured perspective. Open only to students in Architectural Engineering. Prerequisite: Approval from the Dean of the School of Architecture and Design.

### ARCH 101. Architectural Foundations II. 4 Credits.

A continuation of ARCH 100, with major emphasis on the design relationships between architectural space, human experience, and the environment. This course focuses on the basic design of a small architectural work on a real site, beginning with site analysis, the construction of a 3-dimensional site model, the learning of organizational principles, and the understanding of how the use of precedent can inform design. The design process itself is highly iterative, from 2- and 3-dimensional parti diagramming to generate ideas, to 3D investigations at different architectural scales. In design development, students learn the impact of internal programmatic forces and external site forces on design, including the seasonal and diurnal variations in natural lighting through sun path diagrams. By the end of the semester, students will have worked through the fundamental processes of building design towards the synthesis and presentation of a final scheme. Prerequisite: ARCH 100. Open only to students in Architectural Engineering.

### ARCH 103. Introduction to Architecture and Interior Architecture. 3 Credits.

An introduction to the study and practice of architecture and interior architecture. This course aims at orienting the student to the various disciplinary facets which make up the total architecture and interior architecture curricula, as well as to the various professional roles which architects and interior architects can be expected to perform. Architecture and interiors are both an art and a science and considered complex and interdisciplinary professional activities.

### ARCH 108. Architectural Foundations I. 6 Credits.

An introductory design studio directed towards the development of spatial thinking and the skills necessary for the analysis and design of architectural space and form. This course is based on a series of exercises that include direct observation: drawing, analysis and representation of the surrounding world, and full-scale studies in

the making of objects and the representation of object and space. Students are introduced to different descriptive and analytical media and techniques of representation to aid in the development of critical thought. These include but are not limited to freehand drawing, orthographic projection, para-line drawing, basic computer skills, and basic materials investigation. Students must bring a lap top computer to this class. Prerequisite: Must be current student in the M.Arch Track I (5 year), B.A. Arch Studies, or B.S. Interior Architecture degrees.

### ARCH 109. Architectural Foundations II. 6 Credits.

A continuation of the Architectural studio sequence with major emphasis on the design relationships among people, architectural space, and the environment. The course is based on a series of exercises leading to the understanding of architectural enclosure as mediating between people and the outside world. Issues of scale, light, proportion, rhythm, sequence, threshold, and enclosure are introduced in relation to the human body, as well as in relation to the human body as well as the architectural form. Students will engage in drawing, perspective projection, model building, and basic computer graphics. Students must bring a lap top computer to this class. Prerequisite: ARCH 108 with a grade of C- or higher and must be current student in the M.Arch Track I (5 year), B.A. Arch Studies, or B.S. Interior Architecture degrees.

### ARCH 110. Introduction to Computing. 3 Credits.

This course prepares students for design computation topics in the degree program. Topics covered in the class include computer basics, bitmap representation, vector-based graphics, 3-D modeling, scene modeling, building modeling, production of technical drawings, and other issues. These topics are covered in relation to architectural representation and involve skill development in both 2-D and 3-D modeling. The course includes projects that align with those covered in first-year design studios, presenting students with an alternative tool for the representation of two-dimensional diagrams and three-dimensional models. Requirements: Laptop computer with software that meets course specifications. Prerequisite: Must be current student in the M.Arch Track I (5 year), Track II or Track III M.Arch, B.A. Arch Studies, or B.S. Interior Architecture degrees.

### ARCH 208. Form and Function. 6 Credits.

A continuation of the Architectural Studio sequence with major emphasis on introducing students to the basic form determinants of architecture—from limited scope exercises to complete building designs. Using diagrams and sketches, plans, sections, elevations and models, students explore the spatial ordering of human activity, site and landscape analysis, light and air modulation, simple environmental controls and energy conservation, basic framing systems, volumetric organization and the materials of building skins and envelopes. Students must bring a laptop computer to this class. Prerequisite: ARCH 109 with a grade of C- or higher and must be current student in the M.Arch Track I (5 year) or B.A. Arch Studies degrees.

### ARCH 209. Sustainability, Site, and Context. 6 Credits.

A continuation of the Architectural Studio sequence with major emphasis on the synthesis of basic form determinants of medium-sized, multi-story public building in the urban environment. Students will demonstrate competence in basic architectural design, and preparedness for the third-year focus on materials and methods of building construction. Students are required to bring a laptop computer to this class. Prerequisite: ARCH 208 with a grade of C- or higher and must be current student in the M.Arch Track I (5 year) or B.A. Arch Studies degrees.

### ARCH 215. Professional Communications. 3 Credits. GE22

This course is an introduction to visual and oral communication skills. It will build practical skills to design and communicate ideas to a variety of audiences. This practice-based approach will introduce the students to



two major fundamentals of communications. Oral competency, through presentations and writing; and visual communications through color theory, layout design, and branding. The students will have an opportunity to present their work through one on one discussions, small and large group presentations. The course is intended to equip students with the practice-based tools to communicate and demonstrate their design ideas in relation to different fields and to a variety of audiences in practical situations. Prerequisite: ARCH 109 and students must be in the 5 year M.Arch or Architecture Studies degree plan.

**ARCH 340. Global History of Architecture I: Origins to Industrial Revolution (3500 BCE-1700 CE). 3 Credits. GE3H AH**

The first unit of the two-part survey history course explores the historical changes of architecture in relation to civilizational change, techno-spatial experiments and town-building efforts, from the earliest evidence of human dwelling to the beginning of the industrial revolution. Emphasis is on the architecture as an integrated development of commercial, technological, and ideological transferences among different regions, nascent religious groups and evolving political enterprises. In regard to the geographical and geopolitical regions, the course includes South and Central America, Europe, Classical Greece and Italy, Asia Minor, North Africa and Asia. This course is offered at the 300 and 500 levels with additional assignments at the 500 level. Not open to students with credit in ARCH 540.

**ARCH 359. Special Problems. 1-3 Credits.**

Special problems in architecture. The study of a particular problem in architecture involving individual research and presentation. Conferences and reports. (May be taken for Credit/No Credit.) Prerequisite: Prior to enrollment, a student must contact a faculty with a statement of the problem that the student wishes to pursue, the methodology they plan to use in the program, and the objectives of the special problems. The faculty member and the student must agree on the above prior to enrollment being approved. Once approved, a permission number must be used in order to enroll in the course, which can be requested through the Architecture & Design Scheduling Officer.

**ARCH 501. Architectural Foundations I. 6 Credits.**

An introductory design studio directed towards the development of spatial thinking and the skills necessary for the analysis and design of architectural space and form. This course is based on a series of exercises that include direct observation: drawing, analysis and representation of the surrounding world and full-scale studies in the making of objects and the representation of object and space. Students are introduced to different descriptive and analytical media and techniques of representation to aid in the development of critical thought. These include but are not limited to freehand drawing, orthographic projection, para-line drawing, basic computer skills and basic materials investigation. Students must bring a lap top to class. Prerequisite: Admission to M.Arch. III program and/or permission of the Chair of Architecture.

**ARCH 502. Architectural Foundations II. 6 Credits.**

A continuation of the Architectural studio sequence with major emphasis on the design relationships among people, architectural space, and the environment. The course is based on a series of exercises leading to the understanding of architectural enclosure as mediating between people and the outside world. Issues of scale, light, proportion, rhythm, sequence, threshold, and enclosure are introduced in relation to the human body, as well as in relation to the human body as well as the architectural form. Students will engage in drawing, perspective projection, model building, and basic computer graphics. Students must bring a lap top computer to this class. Prerequisite: ARCH 501 studio,

must be a current student in the Track III M.Arch degree, or permission of the Chair of Architecture.

**ARCH 503. Form and Function. 6 Credits.**

A continuation of the Architectural Studio sequence with major emphasis on introducing students to the basic form determinants of architecture—from limited scope exercises to complete building designs. Using diagrams and sketches, plans, sections, elevations and models, students explore the spatial ordering of human activity, site and landscape analysis, light and air modulation, simple environmental controls and energy conservation, basic framing systems, volumetric organization and the materials of building skins and envelopes. Students must bring a laptop computer to this class. Prerequisite: ARCH 502 and must be current student in the Track III M.Arch degree, or permission of the Chair of Architecture.

**ARCH 504. Sustainability and Context. 6 Credits.**

A continuation of the Architectural Studio sequence with major emphasis on the synthesis of basic form determinants of medium-sized, multi-story public building in the urban environment. Students will demonstrate competence in basic architectural design, and preparedness for the third-year focus on materials and methods of building construction. Students are required to bring a laptop computer to this class. Prerequisite: ARCH 503 studio, and must be current student in the Track III M.Arch degree, or permission of the Chair of Architecture.

**ARCH 508. Material and Tectonics. 6 Credits.**

A continuation of the Architectural Studio sequence with major emphasis on studies in urban spaces and design development of building envelopes as related to urban public-life, structural and mechanical systems, and principles of sustainability. Students shall work individually on an advanced building design. Work will focus on medium scale, multi-story, urban-infill, buildings developed to an appropriate level of technical resolution as evidenced in clear schematic wall sections and structural proposals. Students shall demonstrate an understanding of formal ordering and building-concept development as related to the tectonic form determinants. Students are required to bring a laptop computer to this studio class. Prerequisite: ARCH 209 with a grade of C- or higher and must be current student in the M.Arch Track I (5 year) or B.A. Arch Studies degrees.

**ARCH 509. Designbuild. 6 Credits. AE61 CAP**

A continuation of the Architectural Studio sequence with major emphasis on materiality and construction of built assemblies through hands-on activities. Development of craft, process, collaboration and technical documentation skills will be primary objective of the course. Students are required to bring a laptop computer to this studio class. Prerequisite: ARCH 209 with a grade of C- or higher and must be current student in the M.Arch Track I (5 year) or B.A. Arch Studies degrees.

**ARCH 510. Architectural Detailing. 3 Credits.**

Architectural detailing during design and construction phases is a fundamental skillset for architectural practice. This course will focus on technical drawing skills and professional drawing standards and conventions, including construction documentation, shop drawings, and analytical drawing techniques aimed at exploration and communication of the technical aspects of architectural design. Prerequisite: ARCH 209 with a grade of C- or higher, concurrent enrollment in ARCH 509 with same instructor, and must be current student in the M.Arch Track I (5 year) or B.A. Arch Studies degrees.

**ARCH 515. Building Information Modeling. 3 Credits.**

This course will expose students to building information modeling: a digital representation of the building process that facilitates exchange and interoperability of information in digital format. The focus will be on the software's potential for reducing the information loss that occurs

during each handoff of the project during the traditional delivery method. Possibilities for integrated practice including lifecycle costing and knowledge management are discussed.

**ARCH 516. Portfolio Development. 3 Credits.**

The aim of the course is to teach practical presentation skills using computer software, in addition to graphic design theories and strategies. This course will provide an opportunity for students to design and produce a design portfolio appropriate for internship and/or graduate school applications. Prerequisite: ARCH 208.

**ARCH 520. Architectural Acoustics. 3 Credits.**

An introduction to the physics of sound. Objective and subjective evaluation and control of sound as applied to architectural spaces. Room shaping, mechanical and electrical system noise and vibration control, and electro-acoustic sound reinforcement. May not be taken for credit by students with credit for ARCE 520, ARCE 720, or ARCH 720. (Same as ARCE 520.) Prerequisite: Junior or Senior students or consent of instructor.

**ARCH 521. Electro-Acoustical Systems. 3 Credits.**

A study of electro-acoustic sound reinforcement and reproduction systems for buildings. May not be taken for credit by students with credit for ARCE 521, ARCE 721, or ARCH 721. (Same as ARCE 521.) Prerequisite: Junior/Senior standing or consent of instructor.

**ARCH 524. Structures I. 3 Credits.**

The fundamental principles of structural behavior including stress and deformation in structural components and systems. Open to architecture students only. This course is offered at the 500 and 700 levels with additional assignments at the 700 level. Not open to students with credit in ARCH 724. Prerequisite: PHSX 114 and must be current student in the M.Arch Track I (5 year) or B.A. Arch Studies degrees.

**ARCH 530. Environmental Systems I. 3 Credits.**

This introductory course addresses human needs and comfort in relation to the natural and man-made environments. Specific topics include: climate and weather, environmental health, indoor air quality, thermal comfort, passive and active systems and design strategies for heating, ventilating, and air-conditioning, building acoustics, mechanical noise control, and building management systems. This course is offered at the 500 and 700 levels with additional assignments at the 700 level. Not open to students with credit in ARCH 730. Prerequisite: PHSX 114 and must be current student in the M.Arch Track I (5 year), B.A. Arch Studies, or B.S. Interior Architecture degrees.

**ARCH 531. Environmental Systems II. 3 Credits.**

This course addresses human needs and comfort in relation to the natural and man-made environments. Specific topics include: daylighting, electrical lighting systems, electrical power distribution systems, alternative energy sources, communication systems, plumbing, transportation, and life safety systems. This course is offered at the 500 and 800 levels with additional assignments at the 800 level. Not open to students with credit in ARCH 831. Prerequisite: ARCH 530 and must be current student in the M.Arch Track I (5 year), B.A. Arch Studies, or Interior Architecture program.

**ARCH 540. Global History of Architecture I: Origins to Industrial Revolution (3500 BCE-1700 CE). 3 Credits. GE3H**

The first unit of the two-part survey history course explores the historical changes of architecture in relation to civilizational change, techno-spatial experiments and town-building efforts, from the earliest evidence of human dwelling to the beginning of the industrial revolution. Emphasis is on the architecture as an integrated development of commercial, technological, and ideological transferences among different regions, nascent religious groups and evolving political enterprises. In regard to

the geographical and geopolitical regions, the course includes South and Central America, Europe, Classical Greece and Italy, Asia Minor, North Africa and Asia. This course is offered at the 300 and 500 levels with additional assignments at the 500 level. Not open to students with credit in ARCH 340. Prerequisite: Must be current student in the Track II or Track III M.Arch.

**ARCH 541. Global History of Architecture II: From Industrial Revolution to Present (1700 CE-Present). 3 Credits. AE42**

The second unit of study of the two-part survey history course offers a global perspective of the development of modern architecture from the industrial revolution to contemporary times. This course traces the genealogy of modern architecture to its multiple roots in European enlightenment, global dissemination of industrial knowledge, invention of new building materials and techniques, and development of architectural theory. Emphasis is on the historical context of how the diverse approaches of architects from different regions create variations of formal expressions, spatial program and theoretical underpinning, and thus create multiple meanings and images of modern architecture. This course is offered at the 500 and 700 levels with additional assignments at the 700 level. Not open to students with credit in ARCH 741. Prerequisite: ARCH 340 or ARCH 540 or consent of instructor must be current student in the M.Arch Track I (5 year) or B.A. Arch Studies.

**ARCH 546. American Architectural History. 3 Credits.**

This course surveys the history of architecture in the USA from the beginning of European settlements to mid-20th century. It is organized based on place types that include, among others, townships, housing, commercial developments, civic structures, agricultural and rural buildings and settlements, and religious buildings and communities. It also covers a range of topics such as architectural styles, typologies, building tectonics, patterns of diffusion, and socio-economic factors that influenced the development of these historic place types. This course is offered at the 500 and 700 level with additional assignments at the 700 level. Not open to students with credit in ARCH 746.

**ARCH 547. Historic Preservation Theory. 3 Credits.**

This course presents the historical development and contemporary status of the theories and philosophies of historic preservation. It particularly covers the concepts and approaches developed by UNESCO for the management of tangible and intangible cultural heritage resources worldwide and the related international charters, conventions, operational guidelines, and institutions. Using international case studies, it illustrates a range of theoretical, philosophical, ethical, and practical issues and debates in historic preservation in a global context. This course is offered at the 500 and 700 levels with additional assignments at the 700 level. Not open to students with credit in ARCH 747.

**ARCH 548. Historic Preservation Planning. 3 Credits.**

The focus of this course is on the development of concepts and practices of retrieving, recycling, and curating the built environment from the mid-nineteenth century to the present. After a series of introductory readings and discussions, students are encouraged to investigate particular environmental, technological, social, or ideological questions of their choice, focusing on structures that demonstrate persistence over great distances and, co-existing with this persistence, ability to accommodate changes over time. This course is offered at the 500 and 700 level with additional assignments at the 700 level. Not open to students with credit in ARCH 748.

**ARCH 549. Historic Preservation Technology. 3 Credits.**

This course introduces students to architectural historiography and preservation technology. It covers a range of curatorial issues in preservation and adaptive reuse of historic buildings. The topics include technical documentation of historic buildings, archival research,

assessment of causes of deterioration and preservation needs in historic buildings, selection of preservation strategies, and techniques of building material preservation. Also covered are the integration of sustainable technologies into historic construction and examination of the ecological advantages of adaptive reuse and preservation. This course is offered at the 500 and 700 levels with additional assignments at the 700 level. Not open to students with credit in ARCH 749.

**ARCH 552. Ethics and Leadership in Professional Practice. 3 Credits. AE51**

This course takes the perspective that architectural design is inherently an ethical act. Through this lens, students will learn the essentials of office practices, the many definitions of client and their roles in the design process, the legal responsibilities of the profession, the importance of continuous professional development and the obligation the profession has to provide civic leadership in regard to the built and natural environment. This course is offered at the 500 and 700 levels with additional assignments at the 700 level. Not open to students with credit in ARCH 752. Prerequisite: ARCH 508 and 509 and must be current student in the M.Arch Track I (5 year), B.A. Arch Studies, or B.S. Interior Architecture degrees.

**ARCH 558. Programming and Pre-Design Issues. 3 Credits.**

This course will introduce the concepts, methods, techniques, and information used by the architect to establish the parameters of a project, prior to entering the formal design process. The course will introduce the student to the social, technical, legal and economic dimensions of architectural programming. The content will introduce the core competencies in programming, site, and environmental analysis required by the profession. Programming theory, research techniques, information analysis, evaluation of significance, and creative synthesis of the multivalent factors acting upon the pre-design process of project definition will be covered. Exercises may include programming and analysis of projects and sites assigned in the Architectural Design Studio sequence. This course is offered at the 500 and 700 levels with additional assignments at the 700 level. Not open to students with credit in ARCH 758. Prerequisite: ARCH 209 and must be current student in the M.Arch Track I (5 year) or B.A. Arch Studies degrees.

**ARCH 590. Architecture Study Abroad. 6 Credits.**

May be repeated up to a maximum of 18 credits. Students participate in a study abroad program approved by the Architecture Chair. Students will be evaluated upon a submitted journal, sketchbook, or equivalent assignments assigned by the instructor. This course is offered at the 500 and 700 levels with additional assignments at the 700 level. Not open to students with credit in ARCH 790. Prerequisite: Study Abroad is a required component of the M.Arch Degree. Students can study abroad as soon as the Winter Break of their second year.

**ARCH 600. Special Topics in Architecture: \_\_\_\_\_. 3 Credits.**

This course is for the study of architectural topics on a one time or experimental basis in response to changing needs and/or resources in the Program. It may be offered concurrently by different instructors under different subtitles as announced in the Timetable. May be repeated for credit. Prerequisite: Varies by topic.

**ARCH 602. Accelerated Design IV. 6 Credits.**

Graduate studio emphasizing urban context and design theories and architectural tectonics. Students will undertake developing a detailed wall assembly, represented through drawings and/or models. Prerequisite: ARCH 504 and must be current student in the Track II or Track III M.Arch degrees, or permission of the Chair of Architecture.

**ARCH 605. Visualizing Site and Natural Environmental Systems. 3 Credits.**

This course advances empirical understanding and abilities to visualize natural forces as they both shape and affect siting and designing buildings that shape human experience. Students will develop abilities to demonstrate the principles of environmental systems' design, how design criteria can vary by geographic region and the tools used for performance assessment. In-class and applied studies will help students learn about site characteristics, soils, topography, solar systems, ecology, climate, building orientation, active and passive heating and cooling, solar geometry, day-lighting and natural ventilation. Prerequisite: ARCH 109 or equivalent; or ARCH 502; and must be current student in the M.Arch Track I (5 year), Track II or Track III M.Arch, or B.A. Arch Studies degrees.

**ARCH 608. Urban Dwelling. 6 Credits.**

A continuation of the Architectural Studio sequence with major emphasis on program analysis and design of urban building(s) and urban spaces with culture, context and precedent as major form determinants. Students are required to bring a laptop computer to this studio class. Prerequisite: ARCH 508 and ARCH 509 with a grade of C- or higher; or ARCH 602; and must be current student in the M.Arch Track I (5 year), Track II or Track III M.Arch, or B.A. Arch Studies degrees.

**ARCH 609. Integrated Design. 9 Credits. AE61 CAP**

An advanced architectural design studio with major emphasis on an architectural design project that uses previously learned skills through synthesizing user requirements, regulatory requirements, site conditions, accessible design, and consideration of environmental impacts. Students should also demonstrate the ability to make design decisions while integrating previously learned building envelope systems and assemblies, structural systems, environmental control systems, life safety systems, and building performance. The project design process and final product should be documented to demonstrate above abilities by using technical drawings and well-researched written documentation in addition to other means of visual representation. Prerequisite: ARCH 608 with a grade of C- or higher and must be current student in the M.Arch Track I (5 year), Track II or Track III M.Arch, or B.A. Arch Studies degrees.

**ARCH 610. Integrated Design Documentation. 3 Credits.**

Integrated design documentation, including drawings and specifications, is fundamental to the development a professional architectural project. This course is designed to complement and support ARCH 609 Integrated Design Studio in the technical documentation of the studio project and to shed light on professional expectations for design documentation. Prerequisite: Concurrently enrolled in ARCH 609, and students must be in the 5 year M.Arch or M.Arch Track II or III or Architecture Studies degree plan to enroll in this course.

**ARCH 620. Theory of Urban Design. 3 Credits.**

An examination of the relationship between architecture and urban design through contemporary interpretations of future urban form and the determinants of the location, spatial structure, growth and decline of cities. Foundations for an interdisciplinary synthesis are examined in an attempt to bridge the hiatus between large-scale architectural design and incremental adjustments to urban dynamics. This course is offered at the 600 and 800 levels with additional assignments at the 800 level. Not open to students with credit in ARCH 820. Prerequisite: ARCH 208 and must be current student in the M.Arch Track I (5 year) or B.A. Arch Studies degrees.

**ARCH 622. Material Investigations. 3 Credits.**

This course will provide opportunities for students to learn about research methods in the realm of architectural materials. The course will have two concurrent phases: the first phase will consist of a series of field trips and lectures. The purpose of the first phase is to understand how materials are developed and made, the research involved in their development,



and what are their characteristics and potential applications. The second phase will consist of a self-directed research project based on the students' natural curiosity about a particular material or process. The project will have three components: 1) a research agenda, rigorously developed and executed; and 2) a "built" component, with actual materials, executed by the students' own hands and financial resources; and 3) final documentation of the research project.

**ARCH 624. Structures II. 3 Credits.**

A continuation of ARCH 524, with focus on applying learned principles to basic contemporary structural systems such as concrete, steel, and wood framing systems. Open to architecture students only. This course is offered at the 600 and 800 levels with additional assignments at the 800 level. Not open to students with credit in ARCH 824. Prerequisite: ARCH 524 and must be current student in the M.Arch Track I (5 year) or B.A. Arch Studies degrees or consent of instructor.

**ARCH 626. Building Technology I: Construction Systems and Assemblies. 3 Credits.**

This course is an introduction to the materials, processes and craft of construction. Along with presenting the information required for understanding the basic principles and appropriate application and performance of construction systems and assemblies, the course also provides a conceptual framework to bridge between the physical conditions of construction and the more abstract processes of design. Teaching method includes modeling and hands-on building experiences. Prerequisite: ARCH 209 or Corequisite: ARCH 508 or ARCH 509 or ARCH 503 or ARCH 504; and must be current student in the M.Arch Track I (5 year), Track II or Track III M.Arch or B.A. Arch Studies, or B.S. Architectural Engineering.

**ARCH 627. Building Technology II: Culture of Building Technology. 3 Credits.**

A continuation of ARCH 626. Introduction to industrialized production. A consideration of the detailed sub-systems and cultural practices that comprise the built environment, and the factors responsible for their design and installation. Includes discussion of building codes, mechanisms of failure, and materials selection. Lectures and demonstrations by the instructors and visitors, films, slide projections, quizzes and written examinations. A student should demonstrate an understanding of elementary systems of construction and be able to relate this understanding to the design process. Prerequisite: ARCH 626 and must be current student in the M.Arch Track I (5 year), Track II or Track III M.Arch, or B.A. Arch Studies degrees.

**ARCH 630. Theory of Architecture. 3 Credits.**

An examination of architectural theories that understand the designed environment as a cultural medium and product of a sociocultural process that expresses values and ideas. Understanding of these theories will be enhanced through the analysis of paradigmatic buildings, urban form and ideologies that have influenced architectural culture. This course is offered at the 600 and 800 levels with additional assignments at the 800 level. Not open to students with credit in ARCH 830. Prerequisite: Must be current student in the 5 year M.Arch degree or Arch Studies degree.

**ARCH 691. Architecture Practicum. 6 Credits.**

Based upon the student's approved proposal, each student will explore the process of creating the built environment by working in a setting that is intended to provide a new perspective for that student. The range of venues may include non-profit organizations, research settings, hands-on building experiences, and other professional settings as approved by the instructor. Students evaluation will include an assessment by the supervisor in the practicum settings as well as on a final paper using appropriate graphics to illustrate key points. Graded on a satisfactory/unsatisfactory basis.

**ARCH 692. Documentation. 3 Credits.**

Students will document their experience in ARCH 690 or another approved study abroad program. This is intended as a critical reflection upon the student's experience and is additional documentation produced beyond the work done for the study abroad credit. The final product will include a written paper, using appropriate graphics to illustrate key points.

**ARCH 695. Internship Documentation. 3 Credits. AE61 CAP**

Students will document their experience in ARCH 691 or other approved internship or relevant work experience. The purpose of this course is to give students a structured opportunity to select, explore, research, and document a topic relevant to their internship experience and that goes beyond the work done for the internship credit.

**ARCH 699. Study Abroad Experience. 2 Credits.**

Students returning from study abroad will work with the faculty program director to document the experiences gained abroad, with particular emphasis on sharing architectural knowledge, historical or cultural aspects, and immersive experiences to benefit the broader student body.

**ARCH 700. Directed Readings in Architecture. 1-3 Credits.**

Individual study of special topics and problems. May be repeated for credit. Prerequisite: Prior to enrollment, a student must contact a faculty with a statement of the problem that the student wishes to pursue, the methodology they plan to use in the program, and the objectives of the special problems. The faculty member and the student must agree on the above prior to enrollment being approved. Once approved, a permission number must be used in order to enroll and can be requested through the Architecture & Design Scheduling Officer. Graduate standing.

**ARCH 702. Construction Documents. 3 Credits.**

This course introduces students to construction documents and the associated contractual services and legal documents as part of delivering architectural projects. Students will need the information delivered in this course to succeed in any professional internship. The topics include drawings, fees, specifications, BIM, Budgets, construction administration, consultant coordination, code ratings, project delivery methods, professional liability, and more. Prerequisite: Must be current student in the M.Arch Track I (5 year), Track II or Track III M.Arch, B.A. Arch Studies, or by permission of instructor.

**ARCH 720. Architectural Acoustics. 3 Credits.**

An introduction to the physics of sound. Objective and subjective evaluation and control of sound as applied to architectural spaces. Room shaping, mechanical and electrical system noise and vibration control, and electro-acoustic sound reinforcement. May not be taken for credit by students with credit in ARCH 520/ARCE 520/ARCE 720. (Same as ARCE 720.)

**ARCH 721. Electro-Acoustical Systems. 3 Credits.**

A study of electro-acoustic sound reinforcement and reproduction systems for buildings. May not be taken for credit by students with credit in ARCH 521/ARCE 521/ARCE 721. (Same as ARCE 721.)

**ARCH 722. Building Technology Practicum I. 3 Credits.**

This is a course offering that runs concurrent to enrollment in Studio 803. The combination of these two courses affords students a real-world experience outside of the academic setting. The structure of the experience is like that of an architect's office with the exception being that we build what we design. There is no room for 'make believe' and so the experience is an opportunity for students to synthesize their education with a high level of serious thought being given to their design studio experiences and numerous support courses, such as building technology, structures, mechanical systems, site planning, detailing, sustainability, etc. that contribute to the result. This is tempered by the need to work in a team setting with their classmates where a high level

of productivity is expected. At semesters end we hope to have designed, documented, permitted and created the frame of what will become, by the next semesters end, a completed building. Prerequisite: ARCH 609 and must be current student in the 3.5 or 5 year M.Arch degree or Arch Studies degree. Corequisite: ARCH 803.

**ARCH 723. Building Technology Practicum II. 3 Credits.**

ARCH 723 is a course offering that runs concurrent to enrollment in Studio 804. The combination of these two courses is a continuation of the Arch 623/803 course offering of the previous semester. Students will be working on site, picking up where they left off from the previous semester. Full scale mockups are made of most details to help the group understand the implications of the details. A great portion of our work is bound by the notion that the design success for most projects can be found in the details. An emphasis is placed on the need to have a clear understanding of how a problem will be solved before a commitment is made to pursue a solution. This work is documented so the process has been preserved and students can see the benefit of thinking through the various iterations of design and technology that will lead to a successful project. As in the previous semester, the complete documentation of the process is expected at the end of the project. Prerequisite: ARCH 803 and must be current student in the 3.5 or 5 year M.Arch degree or Arch Studies degree. Corequisite: ARCH 804.

**ARCH 724. Structures I. 3 Credits.**

The fundamental principles of structural behavior including stress and deformation in structural components and systems. Open to architecture students only. This course is offered at the 500 and 700 levels with additional assignments at the 700 level. Not open to students with credit in ARCH 524. Prerequisite: ARCH 502 and must be current student in the Track III M.Arch degree.

**ARCH 730. Environmental Systems I. 3 Credits.**

This introductory course addresses human needs and comfort in relation to the natural and man-made environments. Specific topics include: climate and weather, environmental health, indoor air quality, thermal comfort, passive and active systems and design strategies for heating, ventilating, and air-conditioning, building acoustics, mechanical noise control, and building management systems. This course is offered at the 500 and 700 levels with additional assignments at the 700 level. Not open to students with credit in ARCH 530. Prerequisite: ARCH 502 and must be current student in the Track III M.Arch degree.

**ARCH 731. Architecture of Health. 3 Credits.**

This is a seminar that will focus on the architectural dimensions of health and wellness. The course will investigate the ways the environment contributes to the well being (physical, emotional, spiritual) of people. The history of healthcare environments will be explored to show how healthcare environments have evolved to meet changing medical protocols and environmental technologies. A range of contemporary building types will be studied, from critical-care hospitals to assisted-living residences and health spas. Students will research bibliographic sources, prepare case studies of existing health and wellness environments and prepare preliminary planning and design proposals for an environment that human well being.

**ARCH 734. Housing Seminar. 3 Credits.**

This course examines various notions of "home" and the forces that impact residential design with an emphasis on modern housing typologies. Through the evaluation of past housing types, participants will be asked to speculate on appropriate future housing models and their ability to deliver sustainable, safe, and dignified shelter equitably to society. Topics covered will include traditional typologies, social structure in human habitation and settlement, affordability, housing policy, construction technology, neighborhood design, urban design, and the

role that architects and designers play in creating vibrant and healthy communities.

**ARCH 735. Graduate Seminar in Environmental Systems. 3 Credits.**

The intention of this seminar is to provide a substantive overview of the literature and themes in environmental systems. It will serve to introduce students to skills required to conduct research in environmental systems. In addition, the course will entail discussions of students' works in progress, peer review sessions, and completion of a conference paper.

**ARCH 741. Global History of Architecture II: From Industrial Revolution to Present (1700 CE-Present). 3 Credits.**

The second unit of study of the two-part survey history course offers a global perspective of the development of modern architecture from the industrial revolution to contemporary times. This course traces the genealogy of modern architecture to its multiple roots in European enlightenment, global dissemination of industrial knowledge, invention of new building materials and techniques, and development of architectural theory. Emphasis is on the historical context of how the diverse approaches of architects from different regions create variations of formal expressions, spatial program and theoretical underpinning, and thus create multiple meanings and images of modern architecture. This course is offered at the 500 and 700 levels with additional assignments at the 700 level. Not open to students with credit in ARCH 541. Prerequisite: ARCH 540 and must be current student in the Track II or Track III M.Arch degrees.

**ARCH 746. American Architectural History. 3 Credits.**

This course surveys the history of architecture in the USA from the beginning of European settlements to mid-20th century. It is organized based on place types that include, among others, townships, housing, commercial developments, civic structures, agricultural and rural buildings and settlements, and religious buildings and communities. It also covers a range of topics such as architectural styles, typologies, building tectonics, patterns of diffusion, and socio-economic factors that influenced the development of these historic place types. This course is offered at the 500 and 700 level with additional assignments at the 700 level. Not open to students with credit in ARCH 546.

**ARCH 747. Historic Preservation Theory. 3 Credits.**

This course presents the historical development and contemporary status of the theories and philosophies of historic preservation. It particularly covers the concepts and approaches developed by UNESCO for the management of tangible and intangible cultural heritage resources worldwide and the related international charters, conventions, operational guidelines, and institutions. Using international case studies, it illustrates a range of theoretical, philosophical, ethical, and practical issues and debates in historic preservation in a global context. This course is offered at the 500 and 700 levels with additional assignments at the 700 level. May not be taken for credit by students with credit in ARCH 547.

**ARCH 748. Historic Preservation Planning. 3 Credits.**

The focus of this course is on the development of concepts and practices of retrieving, recycling, and curating the built environment from the mid-nineteenth century to the present. After a series of introductory readings and discussions, students are encouraged to investigate particular environmental, technological, social, or ideological questions of their choice, focusing on structures that demonstrate persistence over great distances and, co-existing with this persistence, ability to accommodate changes over time. This course is offered at the 500 and 700 levels with additional assignments at the 700 level. May not be taken for credit by students with credit in ARCH 548.

**ARCH 749. Historic Preservation Technology. 3 Credits.**



This course introduces students to architectural historiography and preservation technology. It covers a range of curatorial issues in preservation and adaptive reuse of historic buildings. The topics include technical documentation of historic buildings, archival research, assessment of causes of deterioration and preservation needs in historic buildings, selection of preservation strategies, and techniques of building material preservation. Also covered are the integration of sustainable technologies into historic construction and examination of the ecological advantages of adaptive reuse and preservation. This course is offered at the 500 and 700 levels with additional assignments at the 700 level. May not be taken for credit by students with credit in ARCH 549.

**ARCH 750. Documenting Historic Buildings. 3 Credits.**

This course builds upon the introductory knowledge gained in the first semester in architectural historiography and pathology of historic buildings. The topics include technical documentation of historic buildings, with the use of traditional techniques such as hand measuring, drafting, sketch plans, field photography, as well as the emerging digital documentation methods such as laser scanning, photogrammetry, and Geographic Information System (GIS). The course also focuses on building retrofitting for energy conservation/sustainable practices in historic buildings. Prerequisite: ARCH 749.

**ARCH 751. Advanced Topics in Historic Preservation. 3 Credits.**

This course builds upon the introductory knowledge gained in the first semester in historic preservation technology. It focuses on additional topics in architectural history; historic preservation theory; preservation planning, and preservation technology. Prerequisite: ARCH 749.

**ARCH 752. Ethics and Leadership in Professional Practice. 3 Credits.**

This course takes the perspective that architectural design is inherently an ethical act. Through this lens, students will learn the essentials of office practices, the many definitions of client and their roles in the design process, the legal responsibilities of the profession, the importance of continuous professional development and the obligation the profession has to provide civic leadership in regard to the built and natural environment. This course is offered at the 500 and 700 levels with additional assignments at the 700 level. Not open to students with credit in ARCH 552. Prerequisite: Must be current student in the Track II or Track III M.Arch degrees.

**ARCH 758. Programming and Pre-Design Issues. 3 Credits.**

This course will introduce the concepts, methods, techniques, and information used by the architect to establish the parameters of a project, prior to entering the formal design process. The course will introduce the student to the social, technical, legal and economic dimensions of architectural programming. The content will introduce the core competencies in programming, site, and environmental analysis required by the profession. Programming theory, research techniques, information analysis, evaluation of significance, and creative synthesis of the multivalent factors acting upon the pre-design process of project definition will be covered. Exercises may include programming and analysis of projects and sites assigned in the Architectural Design Studio sequence. This course is offered at the 500 and 700 levels with additional assignments at the 700 level. Not open to students with credit in ARCH 558. Prerequisite: ARCH 504 and must be current student in the Track II or Track III M.Arch degrees.

**ARCH 790. Architecture Study Abroad. 6 Credits.**

May be repeated up to a maximum of 18 credits. Students participate in a study abroad program approved by the Architecture Chair. Students will be evaluated upon a submitted journal, sketchbook, or equivalent assignments assigned by the instructor. Study Abroad is a required component of the M.Arch Degree. This course is offered at the 500 and

700 levels with additional assignments at the 700 level. Not open to students with credit in ARCH 590.

**ARCH 799. Independent Study. 1-3 Credits.**

May be repeated for credit up to a total of nine (9) credits. Prerequisite: Prior to enrollment, a student must contact a faculty with a statement of the problem that the student wishes to pursue, the methodology they plan to use in the program, and the objectives of the topic or problem. The faculty member and the student must agree on the above prior to enrollment being approved. Once approved, a permission number must be used in order to enroll and can be requested through the Architecture & Design Scheduling Officer. Graduate standing and consent of instructor.

**ARCH 800. Special Topics in Architecture: \_\_\_\_\_. 3 Credits.**

Advanced or experimental courses on specialized topics representing unique or changing needs and resources in the graduate program in architecture.

**ARCH 803. Designbuild and Materiality I. 6 Credits.**

An advanced studio with an emphasis on issues of designbuild and/or materiality with a focus on problem-setting, discovery, and analysis. Students are required to bring a lap top computer to this studio class. Prerequisite: ARCH 609 with a grade of C- or higher and/or consent of the Architecture Department Chair.

**ARCH 804. Designbuild and Materiality II. 6 Credits.**

Continuation of the critical and rigorous investigations into issues of designbuild and/or materiality with an increasing focus on synthesis and evaluation. Prerequisite: ARCH 803 with a grade of C or higher.

**ARCH 805. Sports & Leisure Internship. 6 Credits.**

Faculty-directed investigations within the context of a 7-Month Sports & Leisure professional internship experience will focus on the development of a research topic related to sports or leisure architecture or sports or leisure urban district planning. Prerequisite: ARCH 609 with a grade of C- or higher and acceptance into the sports and leisure option.

**ARCH 806. Sports & Leisure Capstone Studio. 6 Credits.**

An advanced studio focused on research and design concepts for large-scale architectural projects including stadiums, convention centers, entertainment venues, and other recreational facilities, with an emphasis on urban site analysis, programming, concept design, and building technology. Students are required to bring a laptop computer. Prerequisite: ARCH 805 with a grade of C or higher.

**ARCH 807. Health and Wellness Design Internship. 6 Credits.**

Investigations of the connections between built environments and human health and well-being. Students are exposed to environmental issues of healthcare design through seven-month professional internships in firms doing significant work in this field. Prerequisite: Successful completion of ARCH 609 with a grade of C- or higher and acceptance into the Health and Wellness design option.

**ARCH 808. Health and Wellness Capstone Studio. 6 Credits.**

An advanced capstone studio with an emphasis on investigations into healthy and sustainable environments and a focus on problem-solving, research, and design synthesis. The course builds on the real-world experience gained by students in their ARCH 807 internships. Prerequisite: ARCH 807 with a grade of C or higher.

**ARCH 811. Architectural Investigation I. 6 Credits.**

A workshop-based course involving approved self and group directed investigations in a particular area of architectural investigation with a focus on problem-setting, discovery and analysis. Students are required to bring a lap top computer to this studio class. Prerequisite: ARCH 609 with a grade of C- or higher.

**ARCH 812. Architectural Investigation II. 6 Credits.**

Continuation of the critical and rigorous investigations in a particular area of architectural investigation with an increasing focus on synthesis and evaluation. Prerequisite: ARCH 811 with a grade of C or higher.

**ARCH 813. Urban Design Internship and Cooperatives. 6 Credits.**

Faculty-directed investigations within the context of a 7-month Urban Design professional internship experience will focus on the development of a research topic related to urban design. It has an emphasis on professional collaboration and scholarship. Prerequisite: ARCH 609 with a grade of C- or higher and acceptance into the Urban Design Internship program.

**ARCH 814. Urban Design Capstone Studio. 6 Credits.**

An advanced studio centered upon the research and development of transformational urban design projects, including district framework strategies, infrastructure and public realm proposals. Projects will emphasize site research and analysis; urban equity and access; public space programming; ecological resiliency; architectural concepts and emergent technology. Students are required to bring a laptop computer. Prerequisite: Successful completion of ARCH 813 with a grade of C or higher or an equivalent studio as approved by Architecture Program Chair.

**ARCH 815. Global Internship: \_\_\_\_\_. 6 Credits.**

An architectural internship that is part of the global Internship program with a focus on international architectural design practice, and professional development. Prerequisite: ARCH 609 with a grade of C- or higher and acceptance into the Global Internship Program.

**ARCH 816. Global Internship Documentation. 3 Credits.**

A documentation and reflective analysis of the experience, and professional development of the student during their Global architectural internship. Prerequisite: ARCH 609 with a grade of C- or higher and acceptance into the Global Internship Program. Corequisite: ARCH 815.

**ARCH 820. Theory of Urban Design. 3 Credits.**

An examination of the relationship between architecture and urban design through contemporary interpretations of future urban form and the determinants of the location, spatial structure, growth and decline of cities. Foundations for an interdisciplinary synthesis are examined in an attempt to bridge the hiatus between large-scale architectural design and incremental adjustments to urban dynamics. This course is offered at the 600 and 800 levels with additional assignments at the 800 level. Not open to students with credit in ARCH 620. Prerequisite: Must be a current student in the Track II or Track III M.Arch degrees.

**ARCH 824. Structures II. 3 Credits.**

A continuation of ARCH 724, with focus on applying learned principles to basic contemporary structural systems such as concrete, steel, and wood framing systems. Open to architecture students only. This course is offered at the 600 and 800 levels with additional assignments at the 800 level. Not open to students with credit in ARCH 624. Prerequisite: ARCH 724 and must be current student in the Track II or Track III M.Arch degrees.

**ARCH 830. Theory of Architecture. 3 Credits.**

An examination of architectural theories that understand the designed environment as a cultural medium and product of a sociocultural process that expresses values and ideas. Understanding of these theories will be enhanced through the analysis of paradigmatic buildings, urban form and ideologies that have influenced architectural culture. This course is offered at the 600 and 800 levels with additional assignments at the 800 level. Not open to students with credit in ARCH 630. Prerequisite: Must be current student in the Track III M.Arch degree.

**ARCH 831. Environmental Systems II. 3 Credits.**

This course addresses human needs and comfort in relation to the natural and man-made environments. Specific topics include: daylighting, electrical lighting systems, electrical power distribution systems, alternative energy sources, communication systems, plumbing, transportation, and life safety systems. This course is offered at the 500 and 800 levels with additional assignments at the 800 level. Not open to students with credit in ARCH 531. Prerequisite: ARCH 730 and must be current student in the Track III M.Arch degree.

**ARCH 881. Building Information Modeling. 3 Credits.**

This course will expose students to building information modeling: a digital representation of the building process that facilitates exchange and interoperability of information in digital format. The focus will be on the software's potential for reducing the information loss that occurs during each handoff of the project during the traditional delivery method. Possibilities for integrated practice including lifecycle costing and knowledge management are discussed. This course is cross-listed with ARCH 515 Building Information Modeling. To meet the required depth of graduate level course, graduate students will be asked to take additional assignments and conduct an additional study with a specific topic related to Building Information Modeling. The outcome of the study can be various, including academic paper, final project, or implementation of a computer application. May not be taken for credit by students with credits in ARCH 515. Prerequisite: Current students in Master of Architecture 5-year or Master of Architecture 2 year and 3-year program, or Architecture Graduate Certificate in Building Information Modeling (BIM) program.

**ARCH 882. Advanced Parametric Modeling: Rhinoceros and Grasshopper. 3 Credits.**

The course introduces fundamental concepts in parametric modeling, provides technical instructions in design software applications and discusses topics in generative description, systems thinking and parametric construct of design inquiries and architectural ideas. The objective of the course is to develop practical skills of designing and implementing parametric models and establish theoretical foundations of inquiry into computational design analysis, synthesis and evaluation. As a cross-listed course with ARCH 600 with the topic Advanced Parametric Modeling, which is an undergraduate level course, ARCH 817 is designed for graduate students with additional depth and assignments. Graduate students will have the final project that is to develop a computer application with graphical programming language to resolve an architectural problem that is commonly seen in practice. In the project, graduate students are expected to curate case studies and define the architectural problems, then develop parametric solutions. The process will require students to elevate their skills including parametric modeling and computer programming to develop professional applications. May not be taken for credit by students with credits in ARCH 600 with the topic Advanced Parametric Modeling. Prerequisite: Current students in Master of Architecture 5-year or Master of Architecture 2 year and 3-year program, or Architecture Graduate Certificate in Building Information Modeling (BIM) program.

**ARCH 883. Data Visualization and Parametric Design. 3 Credits.**

An introductory course focused on spatial data visualization and parametric design applied to architectural landscapes with focus into qualitative and quantitative methodologies to analyze spatial challenges within different architectural typologies. Students explore tools for spatial data analysis, learn to interpret data, and graphically represent findings through three main exercises: understanding the relationship between buildings and their urban context, acquiring data collection and analysis skills, and visualizing spatial data. Assignments include a comprehensive analysis of case studies, crafting data visualization analyses, and producing analytical reports showcasing design strategies through impactful visual representations. Prerequisite: Current students

in Master of Architecture 5-year or Master of Architecture 2 year and 3-year program, or Architecture Graduate Certificate in Building Information Modeling (BIM) program.

**ARCH 884. Building Modeling and Visualization in Virtual Environment. 3 Credits.**

The course is designed to delve deep into the application of immersive technologies in Building Information Modeling (BIM), focusing particularly on Augmented Reality (AR), Virtual Reality (VR), and Extended Reality (XR). Students will learn to use a variety of software tools, honing advanced visualization techniques that are critical in today's architectural landscape. The course emphasizes not just the technical mastery of these immersive technologies but also their role in enhancing communication and collaboration among various stakeholders throughout the design and construction phases. With a blend of hands-on projects, case studies, and expert guest lectures, students will delve into the practical and ethical dimensions of AR, VR, and XR, equipping them with the skills to navigate and shape the future of architectural design and construction. As a graduate-level course, ARCH 819 will prepare students with a solid foundation in the principles and basic applications of immersive technologies, with a focus on the application of VR visualization for BIM. Students will learn to prepare an animated VR environment, enabling various stakeholders – including architects, clients, and construction teams – to virtually walk through different phases of construction. Different user groups will be able to provide feedback to each other. May not be taken for credit by students with credits in ARCH 600 with the topic Building Modeling & Visualization in Virtual Environment. Prerequisite: Current students in Master of Architecture 5-year or Master of Architecture 2 year and 3-year program, or Architecture Graduate Certificate in Building Information Modeling (BIM) program.

**ARCH 899. Thesis or Project Research. 1-6 Credits.**

Independent study, research and project work leading to the submission of a master's thesis or master's project. May be repeated for credit. Note: In some cases a Comprehensive Oral Examination Option may be substituted. Prerequisite: Permission of the Architecture Program Chair.

**ARCH 930. Doctoral Seminar I. 1 Credits.**

The purpose of this discussion-based seminar is to explore issues of architectural research from a variety of perspectives. May be repeated up to a maximum of two (2 credits). Prerequisite: Admission to the Ph.D. in Architecture Program or consent of the Architecture Program Chair.

**ARCH 931. Theories of Architectural Inquiry. 3 Credits.**

This course will introduce the doctoral student to the major historical and theoretical foundations of architectural research. Architectural inquiry will be defined from diverse and distinct perspectives, and it will be assumed that buildings should be viewed as physical and cultural artifacts, as elements within larger social, natural and urban contexts, and as products of design and fabrication processes. The course will be a seminar format in which students will contribute to the discussions through independent research and critical analyses of the assigned readings and lectures. Prerequisite: Admission to the Ph.D in Architecture Program or consent of the Architecture Program Chair.

**ARCH 951. Methods of Inquiry in Architectural Research. 3 Credits.**

This course will provide students a foundation in methods of inquiry in researching the built environment. The purpose is to train students in developing research strategies applicable to the areas of design-fabrication processes, dwelling and community, and health and sustainability. Students will be exposed to a variety of methods of inquiry drawn from a number of disciplines. Through critical reading and content analysis, students will consider the value of scholarly research, learn to develop research questions, understand the nature of evidence, and the

writing, presentation and illustration of scholarship. The course will be a seminar format in which students will contribute to the discussions through independent research and critical analyses of the assigned readings and lectures. Prerequisite: Admission to the Ph.D. in Architecture Program or consent of the Architecture Program Chair.

**ARCH 958. Research Practicum Preparation. 1-6 Credits.**

In this course, the students will frame a research question and develop a research proposal. The course is intended to serve as preparation for ARCH 959. Prerequisite: ARCH 931 and ARCH 951.

**ARCH 959. Research Practicum. 4 Credits.**

This is a research project undertaken and completed under the supervision of the student's major professor. The student designs, executes, and completes a small scale research project and produces a document of publishable quality within his/her area of inquiry. The project is intended to serve as a pilot study leading towards the dissertation. Prerequisite: ARCH 958.

**ARCH 999. Doctoral Dissertation. 1-9 Credits.**

Individual research work. A minimum of nine credits is required for the degree. May be repeated for credit. Prerequisite: Students must have enrolled in the Architecture PhD program and have successfully completed ARCH 959 and the Comprehensive Oral Examination to enroll in this class.

## Courses

**IA 205. Professional Communications Skills. 3 Credits. GE22**

This course is an introduction to visual and oral communication skills. It builds practical skills to design and communicate ideas to a variety of audiences. This practice-based approach introduces students to two major fundamentals of communication. Oral competency through presentations and writing, and visual communications through composition, color theory, typography, and branding. Students will have an opportunity to present their work through one-on-one discussions, and small and large group presentations. The course is intended to equip students with the practice-based tools to communicate and demonstrate their design ideas in relation to different fields and to a variety of audiences. Prerequisite: ARCH 109 and ARCH 110.

**IA 208. Interior Architecture Studio I. 6 Credits.**

This second-year design studio introduces students to the basic application of design determinants of interior architecture in which precedents research, programming, design ideation, design solutions, and presentation skills are developed. Design solution methodologies for small and medium scale interior spaces allow students to explore spatial configurations, programming, user centered design solutions, human psychology, and behavior in space. There is an introduction to accessibility requirements. Students learn to demonstrate their design explorations with verbal presentations and visual communication skills including but not limited to sketching, diagramming, photography, digital representations and physical models. Prerequisite: ARCH 109 with a grade of C- or higher and must be admitted to the IA program.

**IA 209. Interior Architecture Studio II. 6 Credits. GE11**

A continuation of IA 208, the emphasis of this design studio is to further develop and refine design determinants in which architecture/design precedent study, programming, design ideation, design development, materials and furniture integration, and presentation skills. Design solution methodologies for medium scale interior spaces allow students to explore complex spatial configurations and programming, user centered design solutions, furnishings, manufactured products, materials and finishes integrations. Students further develop design skills to address human psychology and behavior in space, and the ability to apply accessibility requirements in their design solutions. Students will demonstrate their



explorations with written narratives, verbal presentations and visual communication skills of sketching, diagramming, photography, digital representations, and physical models. Prerequisite: IA 208 with a grade of C- or higher.

**IA 210. Human Factors in the Built Environment. 3 Credits.**

This course provides an introduction to human factors theory, data, and analysis from an architectural perspective. Topics covered include how proxemics, anthropometrics, ergonomics, and material choices in the built environment impact our psychology, behaviors, and health. Furthermore, students will learn how human-centered design can be used to create optimal environments for diversity and inclusion. Prerequisite: ARCH 109 with a grade of C- or higher and must be admitted to the IA program.

**IA 211. Building Codes, Standards, and Programming. 3 Credits.**

This course is an in-depth exploration of programming, standards, codes, and life-safety as they apply to interior design. Students will learn about the significance and history of building codes, legal requirements, and how to apply codes and life-safety requirements to buildings. This course will also introduce and cover the relationship between programming and code requirements through program creation and application in design projects. Prerequisite: IA 210.

**IA 220. Sustainable Interior Materiality. 3 Credits.**

This course is an introduction to the application of materials, processes, specifications, and craft in the construction of the built environment. Along with presenting the information required for understanding the basic principles and appropriate application and performance of construction systems and assemblies, the course also provides a conceptual framework to bridge between the physical conditions of construction related to materials selections and the abstract processes of tectonics design. Students demonstrate their explorations through different methods including model building and hands-on building experiences. Prerequisite: IA 210.

**IA 230. Lighting Design and Technology. 3 Credits.**

An exploration of topics on natural lighting and illuminance in interior spaces. Includes lighting sources, technology, specifications of luminaires and design applications through technical drawings. Prerequisite: IA 208.

**IA 308. Interior Architecture Studio III. 6 Credits.**

This third-year interior architecture studio builds on the skills developed in the second-year interior architecture studios. It covers design development of a non-residential, medium scale project. Students work individually to explore applications of complex programming, spatial configuration, sustainability, lighting design, acoustics, psychology of a space, human experience, and ability to apply code and accessibility requirements to their projects. Students also explore manufactured products and furniture systems with an emphasis on material selections and specifications. Students demonstrate their creative work written narratives, verbal presentations, and visual communication skills including sketching, diagramming, photography, digital representations and physical models. Prerequisite: IA 209 with a grade of C- or higher, IA 211, IA 220, and IA 230.

**IA 309. Advanced Interior Architecture Studio. 6 Credits.**

Continuation of the third-year interior architecture studio sequence with an emphasis developing advanced skills of the design process, design research, building codes and regulations, materiality, technical documentation, and design production. Prerequisite: IA 308 with a grade of C- or higher.

**IA 310. Contemporary Issues of Interior Architecture. 3 Credits.**

This course examines critical and most current topics of the interior design discipline. Students will explore how multi-dimensional approaches to interior design can generate social change. Prerequisite: IA 308.

**IA 311. Interior Construction and Detailing. 3 Credits.**

This is a lecture-based course designed to provide students with a comprehensive understanding of interior construction and detailing. It is designed to equip students with practical knowledge about structural systems and construction methods. Furthermore, students will apply their new knowledge into their studio work by preparing a comprehensive set of construction documents. Prerequisite: IA 209 and IA third year standing.

**IA 322. Furniture Design. 3 Credits.**

This course explores the methodology of furniture design and construction. Investigative studies of theory, materials and construction methods of classical, modern, and contemporary furniture design result in a basic knowledge of human factors, design processes, and tectonics. Students will develop skills in design and construction of a piece of furniture from using interior millwork to advanced digital technology. Prerequisite: IA 220.

**IA 342. History and Theory of Built Environments I. 3 Credits.**

Continued chronological survey of architecture, interiors, art, furniture and decorative arts in European contexts in 20th and 21st centuries. Emphasis is on specific socio-cultural, political, technological, and economic factors that influenced these two centuries and on major design approaches that emerged during these time periods. Prerequisite: ARCH 340.

**IA 359. Special Problems: \_\_\_\_\_. 1-3 Credits.**

Special problems in Interior Architecture. This study of a particular problem in Interior Architecture involving individual research and presentation, conferences and reports. Prerequisite: Student must submit to his/her faculty advisor in advance, a statement they wish to pursue. The instructor must give permission to study with the student.

**IA 390. Study Abroad. 5 Credits.**

Students participate in a study abroad program approved by the IA program. Students will be evaluated upon a submitted journal, sketchbook, or equivalent assignments assigned by the instructor. Graded on a satisfactory/unsatisfactory basis. Prerequisite: Must be admitted to the IA Degree program.

**IA 401. Professional Internship. 2-6 Credits.**

Students work in a pre-approved professional firm during summer between the third- and fourth-year of the IA degree program. The purpose of this course is to give students a structured opportunity to explore and research about architecture and interior design professional firms, and select, participate and document their internship experience. Students have the option of completing a pre-approved international internship. Prerequisite: IA 309 with a grade of C- or higher.

**IA 408. Design Research. 3 Credits.**

A seminar-based elective that exposes students to critical interior design research approaches, including but not limited to programming, post-occupancy evaluations (POE), global and cultural dimensions, and design thinking. Topics variable on accreditation needs, represented by subtitles as announced in the semester timetable. May be repeated for credit. Prerequisite: IA 401.

**IA 409. Integrated Interior Architecture Studio. 6 Credits. AE61 CAP**

The capstone studio with an emphasis on demonstration of integrating of all previously learned design skills. These include program analysis, space configuration, formal design composition, structure, materials and methods of construction, technical development of interior spaces, environmental systems, lighting design, acoustics, code and regulation compliance, and principles of sustainability with evidence-based and human-centered design approaches. Students also demonstrate an awareness of history, theory, and culture of the given context. The

advanced level of project development is demonstrated by technically precise drawings and well-researched written documentation in addition to other means of representation. Students may work in groups and with professional consultants. Prerequisite: IA 401 and must be in the 4-year Interior Architecture Bachelor of Science degree plan to enroll in this course.

**IA 690. Study Abroad. 5 Credits.**

Students participate in a study abroad program approved by the IA program. Students will be evaluated upon a submitted journal, sketchbook, or equivalent assignments assigned by the instructor. Graded on a satisfactory/unsatisfactory basis. Prerequisite: Must be admitted to the IA Degree program.