

ARCHITECTURE (ARCH)

ARCH 601: Introduction to Design

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: By Appointment, Lecture/Lab, Studio

ARCH 602: Visualization 1

This course covers the fundamentals of architectural graphic representation for exploration, presentation and documentation. Topics include freehand sketching, 2D orthographic drawings, para-line projections, site surveying and digital and analog modeling/fabrication. In addition, students learn how to enhance their drawings through the use of basic rendering techniques.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: By Appointment - 1 student, By Appointment, Lecture, Lecture/Lab, Studio

ARCH 604: M.Arch Seminar 2

M.Arch Seminar 2 continues the introduction of students to concepts of architectural theory, practice, representation and communication begun in M.Arch Seminar 1. The cumulative goal of this seminar series is to provide the academic scaffolding for the reflective development of a Master of Architecture student's research agenda. The course both compliments and builds upon the explorations taking place within ARCH 612 Design 2 studio. The course is a co-requisite of ARCH 612 Design 2 studio.

Credits: 2

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: By Appointment, Hybrid, Lecture, On-Line, Studio

ARCH 605: Architectural Fellowship

This course is designed to allow students to take the first step towards a more in depth comprehension of the design studio pedagogy. Students will be linked for the semester one-to-one with a section of a foundation design studio. By participation desk critique and the review process, as a graduate level Architecture Fellow rather than as the student, enrollment in this course will allow graduate students to share their knowledge with undergraduate foundation students. In return, by revisiting the fundamentals as a Fellow, students will be able to reevaluate the work they are doing in their own coursework and to develop further their critical, analytical, speaking, and communication skills.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: By Appointment - 1 student, By Appointment, Hybrid, Lecture, On-Line

ARCH 607: Special Topics Course

Credits: 1-6

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: By Appointment, Lecture, Lecture/Lab

ARCH 611: Design I

This introductory studio course is for graduate design majors within C.A.B.E. It introduces fundamental design principles and vocabulary, theory, process methodologies, problem-solving strategies, and craft with abstraction as a primary building block. Emphasis is placed on the relationship between production (the process of creating) and expression (the conveying of ideas and meaning) in design. Students will analyze and synthesize multiple contextual elements that impact design solutions.

Credits: 4

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Studio

ARCH 612: Design 2

Through a series of projects of increasing size and complexity, students explore conceptual, theoretical, functional, and aesthetic frameworks for developing a design language to define spatial environments. Place making, behavioral factors, and socio-cultural and environmental influence are studied. The experiential and intuitive nature of the design process is investigated, as is the contributing role of form, scale, tectonics, materials, dynamic systems, and light/color.

Credits: 4

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Studio

ARCH 613: Design 3

In this course, students will develop high-impact architectural design projects that explore the integration of society, buildings and the urban context. Projects focus specifically on community within the city by addressing issues related to sustainability, resiliency and equity. Students investigate socio-cultural and environmental aspects of the urban condition as they relate to access to resources, project programming and the implications of architectural design. The studio includes discussion of architectural history, theory and principles of sustainability as the basis for the making of urban architecture. Emphasis will be placed on the student's development of a critical and synthetic design process founded on research, engagement and innovation.

Credits: 4

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Studio

ARCH 614: Design 4

In this course, students will develop high-impact architectural design projects that explore sustainable design principles and tectonic practices with an emphasis on environmentally responsible proposals. This course considers sustainability as a core value balancing architectural design, building performance, social equity and environmental resiliency. It seeks to utilize innovative interdisciplinary methodologies to foster a collaborative approach to designing sustainable built environments. The inherent properties of building materials and systems will be explored to understand their roles in informing the design process including structure, enclosure, and assembly. Students will generate solutions to design problems from a perspective which balances design decision making and building performance.

Credits: 6

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Studio

ARCH 615: Design 5

This comprehensive course requires that students work in teams integrating constructional, structural and environmental systems in the design and documentation of a large and complex building. Students will research building type and systems precedents and their resulting impact on built form, analyze material properties, specify component building systems and apply codes and standards to fulfill technical, programmatic and aesthetic needs.

Credits: 6**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** Studio**ARCH 616: Design 6**

This required Master of Architecture course is the culmination of the design studio experience. The structure of the course is negotiated with a faculty advisor to inform student research leading to the development of an original comprehensive architectural design project within the structure of a supervised studio. This studio allows each student to pursue individual interests while requiring them to resolve formal, programmatic, and technical requirements.

Credits: 6**College:** Jefferson Coll of Architecture & Built Environment**Prerequisites:** ARCH 630 [Min Grade: C]**Schedule Type:** Studio**ARCH 622: Visualization 2**

Emphasizing the presentation of spatial environments at many scales, students will refine and expand their drawing and model-building skills using a wide range of media, and integrating manual and digital techniques. This course also addresses the interrelationship of the visual and verbal components of making an effective presentation. Building on skills and tools used in Vis 1, software and tools will be expanded to include generative modeling, digital fabrication, and evolving technologies.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** Lecture, Lecture/Lab, Lecture/Studio Combination, On-Line, Studio**ARCH 623: Façades Construction**

The demand for more sustainable, efficient, and highly performative building envelopes is everincreasing, and simultaneously, design, fabrication, and construction methodologies are evolving at a rapid pace. As such, there is a demand for a higher level of specialization in the professional environment, particularly pertaining to façade design and construction. This course focuses on issues related to façade construction in the contemporary built environment. Various case studies will be presented and discussed to develop a working knowledge of materials, assemblies, detailing, specification-writing, and other issues related to contemporary facades in both new construction and retrofit conditions. Other exercises and a final project will be designed to facilitate a more in-depth knowledge of issues endemic to the façade construction continuum.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** Lab, Lecture**ARCH 624: Visualization 3**

This advanced, computer-aided design, elective course focuses on complex 3D modeling, photorealistic rendering and virtual reality; with an emphasis on using 3D Studio advanced modeling and rendering software. Interactive media and digital imaging are introduced in order to increase effectiveness of student presentations. Students complete a series of specifically designed exercises of increasing difficulty leading to a final project of the student's choosing from a concurrent or earlier design studio.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** Lab, Lecture**ARCH 625: Design & Health Infrastructures**

In this lecture course, students will actively examine the collaborative role designers, healthcare professionals and communities play in human-centered development. Students will execute case-studies on healthcare and public health design interventions in developing contexts, including designs of hospitals, healthcare facilities and urban environments; and critique various methodologies of user engagement. The course concludes with students identifying funding streams and developing action proposals at the nexus of health and design in response to social indicators of health outcomes.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** Lecture**ARCH 627: Visual: Experimental Modeling**

This advanced digital elective course focuses on the direct correlation between digital techniques and the design process. Complex three-dimensional modeling, rendering, animation, design visualization and presentation are emphasized in the course methodology. Using a variety of softwares, students complete a series of exercises of increasing difficulty leading to a final project that demonstrates the culmination of the skills developed throughout the semester.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** Lab, Lecture**ARCH 629: Built Environ: Global Origins**

By tracing significant historical themes, this course spotlights canonic examples of Western and non-Western architecture, interiors, and landscape design from Ancient times to the Medieval period. Major monuments of Europe, Asia, Africa, and the Americas are examined as solutions to technical problems, utilizing available materials, and as spatial and structural embodiments of cultural belief systems. Students acquire a working vocabulary for both analyzing and evaluating the built environment and material culture.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** Lecture

ARCH 630: Research Methods

This seminar is focused on understanding independent research, inquiry, analysis, design exploration and synthesis in architecture. Different approaches to research, hypothesis testing, design process, and systems for design will be presented and discussed. This course is structured around weekly seminars and workshops and interactions with faculty members to guide student research and lead to the development of a comprehensive final project. Students will be challenged to develop and prepare their research proposals for their final project. Permission of the program director required.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Lecture

ARCH 631: Dsgn, Development & Global Hlth

In this lecture course, students will actively examine the designer's role in global health, sustainability, and human-development initiatives; evaluating critical factors including population growth, environmental degradation, rural to urban migration, and human settlements. Students will examine the role of research to inform a design and implementation strategy; comparing various methods of engagement. Students will interpret the designer's role among different strategies of international aid and human development; while appraising strategies to develop healthy communities and landscapes. The course concludes with students formulating human development strategies in one of the topical areas of study.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Lecture, Lecture/Studio Combination

ARCH 632: History 1

This lecture course surveys Western and non-Western architecture and interiors, beginning with ancient history and extending to the 19th century. Throughout the course, students acquire a working vocabulary for both analyzing and evaluating the built environment, and relating developments in the built environment to other disciplines such as the arts, furniture, and material culture. Architectural works are placed within a broad historical context by considering factors such as religion, philosophy, political and economic developments, as well as materials, construction methods, and local environments.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Lecture

ARCH 633: History 2

This course chronicles the impact of Enlightenment thinking and of the shifting definitions of modernity upon architecture and interior design by tracing the transition from Historicism to the International Style. New notions of progress and evolution; industrialization and urbanization; and debates concerning the role of the machine and the meaning of ornament are set against major technological advances. Students examine key theoretical texts and accomplish archival research on an historic structure in the Philadelphia area.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Lecture

ARCH 634: History 3

This course analyzes major movements and theoretical constructs that have dominated architecture and interior design from the post-World War II period until the present. Discussion focuses upon societal and environmental aspects? politics, economics, science and technology, psychology, etc. ? that shape the greater context for architecture, interiors and the allied arts. Students examine key theoretical texts to evaluate current thinking relative to issues such as sustainability, critical regionalism, phenomenology and the role of the digital in contemporary practice.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Lecture

ARCH 640: Experimental Materials

This elective lab/seminar course is a hands-on exploration into the mechanical properties and aesthetic potential of materials in the built environment. The course encourages experimentation with both new materials and non-traditional use of existing materials toward the full-scale production of architectural objects and building components. Implications of craft and technology underscore research and production. Students complete several smaller individual projects and a larger group project of longer duration.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Lecture, Studio

ARCH 641: Tech 1

This course focuses on the presentation of the technical factors of construction that affect a building's structure. Students are introduced to and compare the nature and structural characteristics of the major construction systems of wood, masonry, steel and concrete. Structural principles, as well as building and zoning codes, are introduced and their influence on form and choice of materials is emphasized.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Lecture, Lecture/Studio Combination, Studio

ARCH 642: Tech 2

This lecture/lab course examines technological issues relevant to passive environmental systems and sustainable technologies. Central to the course is a students understanding of the temporal nature of program and site and their impact upon the design of natural lighting, passive heating and cooling systems, and issues of enclosure, materiality, and skin, as well as their relation to our natural and built environments.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Lab, Lecture, Lecture/Lab

ARCH 644: Tech 4

This lecture/lab is the capstone course to the Structures and Technology course sequences. This course presents advanced theory, design and application parameters associated with structures, environmental systems and enclosure within the architectural environment. These parameters are examined through the context of building form typology. Emphasis is placed on the relationships of structures, environmental systems and building enclosure within each building type, and the use of these design elements in the conceptualization and realization of architecture.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: Lab, Lecture

ARCH 645: Tech 5

This course focuses on the important role of structural, environmental, and constructional systems in the design process through the creation of technically precise computer generated drawings and models. Students systematically analyze precedence through case studies and develop their own design into a set of technical documents and details that enhance the project concept. The utilize CAD and BIM computer software to convey their technical design intentions.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Corequisites:** ARCH 615**Schedule Type:** Lab, Lecture, Lecture/Lab, On-Line**ARCH 647: Experimental Structures**

This elective lab/seminar course is an exploration into the architectural potential of form-active structures (including thin-shell, tensile-membrane and fabric structures), and new and alternative materials and methods of construction. Unlike conventional structures that rely on their internal rigidity, form-active structures rely purely on their geometric shape to carry loads, thus providing a base for experimenting with form to create innovative solutions for structural-design problems.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** Lecture, Lecture/Lab, Studio**ARCH 651: Structures 1**

This course merges structural design (form) and analysis as a simultaneous act and introduces the role of structural engineering in the architectural process. Students develop familiarity with the fundamentals of statics, gain a sense of how structures resist forces, and learn to visualize the load path and the direction of forces. Material is learned while designing actual structures and details. Structural design and analysis is taught using both numerical and graphical analyses for the preliminary shapes of cable structures, arches, and trusses.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** Lab, Lecture, Lecture/Lab**ARCH 652: Structures 2**

Reinforcing concepts learned in Structures 1, this course presents the effect of cross-sectional properties on stresses in beams as well as the concept of bending as it is applied to beams, columns, slabs and walls in wood, steel and reinforced concrete. Also covered are the resistance of buildings and their components to lateral loads (wind and earthquake) and the introduction to structural grids and patterns for structural systems in wood, steel and concrete as they relate to gravity and lateral loads.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** Lecture, Lecture/Studio Combination, Studio**ARCH 661: Professional Management**

This course focuses on the nature of the architect's practice and on office proprietorship typologies, through detailed studies of legal, financial, marketing and management issues. Using individual projects, it examines the project process - from development through construction, including administrative procedures, economic systems, codes, standards and regulations - as well as various professional disciplines' responsibilities and requirements for professional registration. Contractual and ethical obligations of the architect, particularly in response to client needs and safety, as well as codes, standards and regulations are covered.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** Lecture**ARCH 671: Vernacular Architecture**

This elective course provides the groundwork for the study of architecture built without architects or, in some other way, unlike the buildings that comprise the standard architectural canon. Scholars estimate that 95 percent of buildings fall into this category. Depending on faculty expertise, focus will be on national and regional traditions, non-Western traditions or a combination of the two. Examples of vernacular architecture will be examined in the context of their materials, building technology, climate and culture.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** Lecture**ARCH 771: Independent Study & Research**

This course will allow students to pursue individual areas of interest while working jointly with a faculty member. Enrollment is subject to the availability and approval of both the program director and faculty member. The student must have 12 or more graduate-level credits, and a prospectus of the proposed independent study must be approved at least one month prior to registration

Credits: 1-6**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** By Appointment - 1 student, By Appointment - 2 students, By Appointment - 4 students, Independent Study**ARCH 672: American Architecture**

What makes the built environment in America unique? How has American design changed over the generations? What were architects, clients, and critics thinking? Where will American architecture go in the future? Using history, sociology, and the humanities, we will address these types of questions as we examine American architecture according to themes such as the iconic American home, public buildings, buildings for work and play, and American architectural practice.

Credits: 3**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** Lecture**ARCH 771-B: Independent Study & Research****Credits:** 6**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** By Appointment - 1 student, By Appointment - 2 students, By Appointment - 3 students, By Appointment - 4 students, Independent Study

ARCH 791: Internship and Research

Academic internships aid students in professional preparation through a work experience directly related to their major and career goals. This upper-level elective course is designed to facilitate and support a student's academic internship experience. While the primary emphasis of the course is on the internship work experience, course assignments are incorporated to prompt reflection on the internship. This reflection is an integral component of experiential learning and students' overall career and professional development and aligns with the course learning outcomes.

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: By Appointment - 1 student, Internship 1 Credits, Internship 3 Credits

ARCH 901: Graduate Thesis Project I

Credits: 1-6

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: By Appointment - 1 student, Lecture, On-Line

ARCH 902: Graduate Thesis Project II

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Schedule Type: By Appointment - 1 student, Independent Study, Lecture

ARCH 902E: Graduate Thesis Project II

Credits: 3

College: Jefferson Coll of Architecture & Built Environment

Prerequisites: ARCH 902 [Min Grade: TH]

Schedule Type: Independent Study, Lecture, On-Line