

# ARCHITECTURE (ARCH)

## **ARCH 204: Great Build: Strc Style & Cntx**

This course surveys selected, key monuments of architectural history from ancient through modern times that are paradigmatic of building art and science during a particular period. The buildings spotlighted represent dominant types from pyramids to skyscrapers that are not only laboratories for innovative design and cutting-edge technologies, but also are expressive of the values and aspirations of the society at large. Developments in the areas of materiality and structural systems will be integrated with changing social, economic, political, stylistic, and environmental demands that are normative of a particular time and place. Students majoring in Architecture, Architectural Studies, Landscape Architecture, or Interior Design are not permitted to take this course.

**Credits:** 3

**College:** Jefferson Coll of Architecture & Built Environment

**Prerequisites:** WRIT 101 or WRIT 101G or WRIT 101S [Min Grade: D]

**Schedule Type:** By Appointment - 1 student, Lecture

## **ARCH 204AC: Great Build: Strc Style & Cntx**

This course surveys selected, key monuments of architectural history from ancient through modern times that are paradigmatic of building art and science during a particular period. The buildings spotlighted represent dominant types from pyramids to skyscrapers that are not only laboratories for innovative design and cutting-edge technologies, but also are expressive of the values and aspirations of the society at large. Developments in the areas of materiality and structural systems will be integrated with changing social, economic, political, stylistic, and environmental demands that are normative of a particular time and place. Students majoring in Architecture, Architectural Studies, Landscape Architecture, or Interior Design are not permitted to take this course.

**Credits:** 3

**College:** Jefferson Coll of Architecture & Built Environment

**Prerequisites:** WRIT 101 [Min Grade: D]

**Schedule Type:** By Appointment - 2 students, By Appointment - 3 students, Lecture

## **ARCH 212: Tech 2 Passive Sys/Bldg Env**

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

**Prerequisites:** ARDS 210 [Min Grade: D]

**Schedule Type:** Lecture, Lecture/Studio Combination, Studio

## **ARCH 213: Design 3: Arch Foundations Stud**

This foundation studio concentrates on general issues concerning ? dwelling? and specific issues addressing housing and residential design are explored. Emphasis is placed on designing in the urban context. This course uses research, writing and analysis of human patterns of occupancy and settlement as a means of exploration. Techniques of representation are developed and refined.

**Credits:** 4

**College:** Jefferson Coll of Architecture & Built Environment

**Prerequisites:** ARCH 102 or ARDS 102 [Min Grade: C]

**Schedule Type:** Studio

## **ARCH 214: Design 4: Arch Foundation Studies**

This foundation course focuses on building the landscape using the elements, principles and theories of architectural and landscape design. Concurrently, specific theoretical issues related to design, organization and the interrelationship of interior and exterior space are explored. A particular emphasis is placed on an experiential and intuitive design process. The importance of the building ?parti? as a response to naturally occurring context is stressed. Techniques of representation are developed and refined.

**Credits:** 4

**College:** Jefferson Coll of Architecture & Built Environment

**Prerequisites:** ARCH 213 [Min Grade: C]

**Schedule Type:** On-Line, Studio

## **ARCH 303: 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

**Prerequisites:** PHYC 101 and (MATH 103 or MATH 111) [Min Grade: D]

**Schedule Type:** Lab, Lecture, Lecture/Lab

## **ARCH 304: 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

**Prerequisites:** ARCH 303 [Min Grade: D]

**Schedule Type:** Lab, Lecture, Lecture/Lab

**ARCH 306A: Study Abd: S. Africa Preparatn**

This study abroad short course preparatory course seeks to provide students with the following opportunities: . Appreciate the interdependence of the global environment . Demonstrate knowledge of international economic and/or cultural developments in the field of architecture . Value intercultural experience . Develop an ethical & professional awareness of their discipline within the global community . Gain insight into the historical, cultural, social, political and geographic contexts of the site of study . Apply their resourcefulness, flexibility and interdependence and the ability to collaborate and work in a group . Seek another opportunity to travel abroad in the future

**Credits:** 2**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** Lecture**ARCH 306B: Study Abd: South Africa**

This study abroad short course seeks to provide students with the following opportunities: . Appreciate the interdependence of the global environment . Demonstrate knowledge of international economic and/or cultural developments in the field of architecture . Value intercultural experience . Develop an ethical & professional awareness of their discipline within the global community . Gain insight into the historical, cultural, social, political and geographic contexts of the site of study . Apply their resourcefulness, flexibility and interdependence and the ability to collaborate and work in a group . Seek another opportunity to travel abroad in the future

**Credits:** 1**College:** Jefferson Coll of Architecture & Built Environment**Prerequisites:** ARCH 306A [Min Grade: D]**Schedule Type:** Lecture**ARCH 308: Visual 4: Advanced Modeling**

This advanced, computer-aided design, course focuses on complex three-dimensional modeling, photorealistic rendering and virtual reality; with an emphasis on using 3- D Studio Advanced modeling and rendering software. Interactive media and digital imaging are introduced in order to increase the 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 311: Design 5 for Architecture**

This topical studio explores the integration between individual buildings and urban design. The course focuses on creating community within the city. Students investigate socio-cultural and environmental aspects of the city as they relate to architecture. The studio includes discussion of architectural history, theory and principles as the basis for the making of architecture and urban form.

**Credits:** 6**College:** Jefferson Coll of Architecture & Built Environment**Prerequisites:** ARCH 212 Min Grade: D and ARCH 214 Min Grade: C**Schedule Type:** Studio**ARCH 312: Design 6**

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**Prerequisites:** (ARCH 202 Min Grade: C or ARCH 214 Min Grade: C) and ARCH 212 Min Grade: D**Schedule Type:** Lecture/Lab, Studio**ARCH 313: Tech 3: Dynamic Enviro. Systems**

This lecture/lab course presents basic theory and application parameters associated with the dynamic building systems within the architectural environment. These include HVAC, power and data, lighting, acoustics, security, plumbing, vertical transportation, and life and fire safety. Emphasis is placed on the relationships of these systems within the building structure and envelope, as well as the integration of design processes, the implementation of sustainable design principles, and the health, safety, and welfare of users.

**Credits:** 3**College:** Jefferson Coll of Architecture & Built Environment**Prerequisites:** ARCH 212 [Min Grade: D]**Schedule Type:** Lab, Lecture, Lecture/Lab, On-Line**ARCH 314: Tech 4:Adv. Buildn Analysis**

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**Prerequisites:** ARCH 313 [Min Grade: D]**Schedule Type:** Lab, Lecture**ARCH 320: Ecology & Making**

The objective of this seminar is to broaden the base of understanding relative to the current discussion of sustainability and reveal some of the greater complexities of the topic. The course will include relevant design work, work outside of the realm of convention, and non-designers that have contributed greatly to the field. The semester's readings will explore the topic through different filters: technological, historical, philosophical, aesthetic, scientific, social, economic, political, and cultural.

**Credits:** 3**College:** Jefferson Coll of Architecture & Built Environment**Prerequisites:** AHST 306 or LARC 411 or INDD 304 or INTD 307 [Min Grade: D]**Schedule Type:** Lecture

**ARCH 324: Visualization: Experi 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

**Prerequisites:** ARDS 208 [Min Grade: D]

**Schedule Type:** Lab, Lecture

**ARCH 326: Visualization 2: Adv Modeling**

This advanced, computer-aided design, course focuses on complex three-dimensional modeling, photorealistic rendering and virtual reality; with an emphasis on using 3-D Studio Advanced modeling and rendering software. Interactive media and digital imaging are introduced in order to increase the 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

**Prerequisites:** ARDS 208 [Min Grade: D]

**Schedule Type:** Lab, Lecture

**ARCH 371: Design Theory: Special Topics**

This upper-level course is organized to take advantage of faculty members' expertise and the interests of the student body. All topics chosen require that students have completed basic courses in architectural history and theory, so that this course can focus on (1) an advanced analysis of theoretical texts in architecture, literary texts and buildings; and (2) an examination of architecture as a cultural discipline that seeks to accommodate contemporary human needs and natural situations.

**Credits:** 1-6

**College:** Jefferson Coll of Architecture & Built Environment

**Prerequisites:** AHST 306 or LARC 411 [Min Grade: D]

**Schedule Type:** Lecture, Lecture/Lab, Lecture/Studio Combination

**ARCH 372: The Architectural Publication**

Architectural publications from Vitruvius' De architectura libri decem to Bjarke Ingel's Yes is More has been and continues to be integral to architectural discourse. This seminar introduces students to the book as a representational tool for considering architecture, landscape architecture, and interior design as a critical artifact for the dissemination of environmental design theory and praxis. This course also introduces students to the history and conceptual underpinnings of the architectural publication as well as typography, layout and architectural writing. Concurrent with the analysis of architectural publications through case studies, students will utilize their design and editorial skills to produce the annual CABE publication of student work

**Credits:** 3

**College:** Jefferson Coll of Architecture & Built Environment

**Schedule Type:** Lab, Lecture

**ARCH 398: Architecture Elective**

This course is a transfer equivalency for an architecture elective course

**Credits:** 3

**College:** Jefferson Coll of Architecture & Built Environment

**Schedule Type:** Lecture

**ARCH 401: Design 7 for Architecture**

This studio permits students to customize their professional education by offering a series of options, including study abroad architectural studio, design-build studio, interdisciplinary studio, design studio within another discipline or another option approved by the program director.

**Credits:** 6

**College:** Jefferson Coll of Architecture & Built Environment

**Prerequisites:** ARCH 311 and ARCH 312 [Min Grade: C]

**Schedule Type:** Studio

**ARCH 412: Design 8 for Architecture**

This comprehensive course demands that students work in teams integrating constructional structural and environmental systems in the design and documentation of a large and complex building. Students 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

**Prerequisites:** ARCH 314 Min Grade: D and (ARCH 311 Min Grade: C or ARCH 312 Min Grade: C)

**Corequisites:** ARCH 416

**Schedule Type:** Studio

**ARCH 413: 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

**Prerequisites:** ARCH 304 or AREN 305 [Min Grade: D]

**Schedule Type:** Lecture, Lecture/Lab, Studio

**ARCH 414: 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 nontraditional 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

**Prerequisites:** ARCH 303 or AREN 301 [Min Grade: D]

**Schedule Type:** Lecture, Lecture/Lab, Studio

**ARCH 415: Visualization: Multimedia**

This interdisciplinary course focuses on Interactive CDROM design, Web page design and digital video production. Students begin by reviewing basic two-dimensional, design communication concepts as a prelude to more complex projects involving various digital media. The course is primarily taught on the Macintosh platform and features software such as Adobe Premier, Macromedia Flash and Macromedia Director. Students create their own individualized final project as approved by the instructor.

**Credits:** 3**College:** Jefferson Coll of Architecture & Built Environment**Prerequisites:** ARDS 208 or GRPH 202 [Min Grade: D]**Schedule Type:** Lab, Lecture**ARCH 416: Tech 5: Documentatn & Detail**

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**Prerequisites:** ARCH 314 and (ARCH 326 or ARCH 308) [Min Grade: D]**Corequisites:** ARCH 412**Schedule Type:** Lab, Lecture, Lecture/Lab**ARCH 417: Urban Strategies**

This lecture/seminar course introduces the history and theory that informs contemporary issues in urban design. It examines the evolving structure of the modern city and the ways in which theoretical ideas and design strategies impact the urban landscape. The importance of environmental and social responsibility and the role of the architect in the urban design process are stressed, while at the same time considering form and spatial qualities of buildings in the urban environment.

**Credits:** 3**College:** Jefferson Coll of Architecture & Built Environment**Prerequisites:** AHST 306 and ARCH 311 and ARCH 312 [Min Grade: D]**Schedule Type:** Lecture, Studio**ARCH 418: Housing and Construction Tech**

This elective seminar course explores interrelated issues of house, land and construction. Discussions and research center around how historical and cultural concepts of the home and land-use have brought housing to its present condition, and how current concerns about land use and construction technologies might effect a change.

**Credits:** 3**College:** Jefferson Coll of Architecture & Built Environment**Prerequisites:** ARCH 212 or LARC 207 [Min Grade: D]**Schedule Type:** Lecture**ARCH 419: High Performance Bldg Envelop**

This course explores future possibilities for advanced building envelopes as well as the properties of interior and exterior building materials and their relation to construction methods and detailing. The building envelope will be considered using the following criteria: architectural expression, sustainability, spatial order, performance, and user experience. The goal of these investigations is to develop new building envelope systems that integrate the construction process with structure, materials, climate, energy use, transparency, surface qualities, and aesthetics. Students will participate in an integrated design process leading towards the technical and architectural design of a high performance-building envelope.

**Credits:** 3**College:** Jefferson Coll of Architecture & Built Environment**Prerequisites:** ARCH 304 and ARCH 313 [Min Grade: D]**Schedule Type:** Lecture, Lecture/Studio Combination, Studio**ARCH 420: Building Preservation****Credits:** 3**College:** Jefferson Coll of Architecture & Built Environment**Prerequisites:** (ARDS 208 and ARCH 211 and ARCH 202) and (LARC 207 or INTD 206 or ARCH 202) and (LARC 202 or INTD 202) [Min Grade: D]**Schedule Type:** Lecture, Studio**ARCH 423: Architecture Fellowship**

This course is designed to allow students to take the first step towards learning to be a teacher. During the semester students will be linked one-to-one with a section of a foundation design studio. Participation in desk critiques and the review process, as Studio Assistants rather than as the student, allows upper level students the opportunity to share their knowledge with foundation students. In return by revisiting the fundamentals as a Studio assistant, 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. . Prerequisite: To qualify for an Undergraduate Architecture Fellowship, you must have successfully completed the second year of the School of Architecture studio courses. To qualify to as a delegate to a second year studio, you must have successfully completed the third year studio courses in the same discipline as the second year studio to which you are associated. An interview with the course coordinator and subsequent permission is required to register for this course. Letters of recommendation may be submitted on your behalf. In all cases enrollment in this course requires a minimum GPA of 3.00 In addition, no student on disciplinary probation may enroll in this course.

**Credits:** 1-3**College:** Jefferson Coll of Architecture & Built Environment**Schedule Type:** By Appointment - 3 students, By Appointment, On-Line, Studio**ARCH 424: Historic Pres Doc: Drawing****Credits:** 3**College:** Jefferson Coll of Architecture & Built Environment**Prerequisites:** ARCH 421 and ARDS 208 [Min Grade: D]**Schedule Type:** Lecture

**ARCH 426: Design/Build**

Through a combination of lecture and lab, students apply knowledge of building technologies and structural systems to the design and construction of a project at appropriate scale. Working under the supervision of faculty, students research, plan, and build their solution to a problem of topical interest.

**Credits:** 3

**College:** Jefferson Coll of Architecture & Built Environment

**Prerequisites:** ARCH 212 or LARC 207 [Min Grade: D]

**Schedule Type:** Lecture, Studio

**ARCH 427: Construction Management I**

**Credits:** 3

**College:** Jefferson Coll of Architecture & Built Environment

**Schedule Type:** Lecture

**ARCH 428: Construction Management II**

**Credits:** 3

**College:** Jefferson Coll of Architecture & Built Environment

**Schedule Type:** Lecture

**ARCH 430: Architecture in Education**

Each student is teamed with a practicing architect and a classroom teacher to develop and carry out an eight-week program for a class of school children (elementary through high school). The emphasis is on hands-on activities and direct experiences (neighborhood walks, etc.) that introduce the children to the basic principles of architecture and the built environment. The program is in collaboration with the Foundation for Architecture, the Philadelphia Public School District and local architecture firms.

**Credits:** 3

**College:** Jefferson Coll of Architecture & Built Environment

**Prerequisites:** (ARCH 214 or LARC 202) and (WRIT 215 or WRIT 201 or WRIT 202) [Min Grade: D]

**Schedule Type:** By Appointment, Lecture, Studio

**ARCH 431: Portfolio Presentation**

**Credits:** 1

**College:** Jefferson Coll of Architecture & Built Environment

**Prerequisites:** (ARCH 311 or ARCH 312 or LARC 302) and INTD 401 [Min Grade: C]

**Schedule Type:** Studio

**ARCH 436: Historic Pres Doc: Photography**

**Credits:** 3

**College:** Jefferson Coll of Architecture & Built Environment

**Prerequisites:** ARCH 421 or POTO 101 or POTO 204 [Min Grade: D]

**Schedule Type:** Lecture

**ARCH 440: Honors Capstone: Indep Resrch**

Honors Capstone: Independent Research is a student-directed course that combines a research agenda oriented towards a critical contemporary issue with discipline-specific exploratory practices. Informed by current issues within their major, each student formulates a critical question and investigates that question through methods appropriate to the subject, thereby building an argument to support a proposition. Under the guidance of faculty and professional advisors, each student analyzes a focused topic of inquiry relative to current debates within the field, relevant case studies, core literature and bibliography, in addition to topic-specific research strategies

**Credits:** 3

**College:** Jefferson Coll of Architecture & Built Environment

**Schedule Type:** Lecture

**ARCH 4X1: Design Theory Sem Placeholder**

**Credits:** 3

**College:** Jefferson Coll of Architecture & Built Environment

**Schedule Type:** Lecture

**ARCH 4X2: Nexus Design Exper Placeholder**

**Credits:** 6

**College:** Jefferson Coll of Architecture & Built Environment

**Schedule Type:** Lecture