

# ARCH - ARCHITECTURE

## ARCH400 Architecture Design Studio I (6 Credits)

Introduction to architectural design with particular emphasis on conventions and principles of architecture, visual and verbal communication skills, formal analysis, design process, spatial composition, architectural promenade, basic program distribution, and elementary constructional and environmental responses.

**Restriction:** Must be in a major in ARCH-Architecture Program; and permission of ARCH-Architecture Program.

## ARCH401 Architecture Design Studio II (6 Credits)

Continuation of ARCH 400 with introduction to building typology, urban and contextual issues, design of the vertical surface, and architectural interiors.

**Prerequisite:** Minimum grade of C- in ARCH400.

**Restriction:** Must be in Architecture (B.S.) program.

## ARCH402 Architecture Design Studio III (6 Credits)

Architectural design studio with emphasis on building and facade typologies, the development of architectural promenade and sequence, public and/or civic infill buildings dependent upon the architectural promenade, and urban housing types of varying densities. The architect's obligations to urban context are explored in many dimensions including historical, typological, and physical.

**Prerequisite:** Minimum grade of C- in ARCH401.

**Restriction:** Must be in Architecture (B.S.) program.

## ARCH403 Architecture Design Studio IV (6 Credits)

Investigations into the relationship between the man-made and the natural world including introductory issues of assembly and material value. Design of the site and the building are combined into an integral process delimiting and probing the boundaries of each and exploring their reciprocal relationship. The architect's obligations to the natural and urban contexts are explored in many dimensions including historical, typological, environmental, and physical.

**Prerequisite:** Minimum grade of C- in ARCH402.

**Restriction:** Must be in Architecture (B.S.) program.

## ARCH404 Graduate Architecture Design Studio I (6 Credits)

Introduction to architectural design with particular emphasis on conventions and principles of architecture, visual and verbal communication skills, formal analysis, design process, spatial composition, architectural promenade, basic program distribution, and elementary constructional and environmental responses. Offered fall only.

**Recommended:** For 3 1/2 year graduate students only.

**Restriction:** Must be in Architecture (Master's) program.

## ARCH405 Graduate Architecture Design Studio II (6 Credits)

Architectural design studio with emphasis on building and facade typologies, the development of architectural promenade and sequence, public and/or civic infill buildings dependent upon the architectural promenade, and urban housing types of varying densities. The architect's obligations to urban context are explored in many dimensions including historical, typological, and physical. Offered spring only.

**Prerequisite:** Minimum grade of C- in ARCH404.

**Restriction:** Must be in Architecture (Master's) program.

## ARCH406 Graduate Architecture Design Studio III (6 Credits)

Investigations into the relationship between the man-made and the natural world including introductory issues of assembly and material value. Design of the site and the building are combined into an integral process delimiting and probing the boundaries of each and exploring their reciprocal relationship. The architect's obligations to the natural and urban contexts are explored in many dimensions including historical, typological, environmental, and physical.

**Prerequisite:** Minimum grade of C- in ARCH405.

**Restriction:** Must be in Architecture (Master's) program.

## ARCH407 Graduate Architecture Design IV (6 Credits)

Studio problems and theories concentrating on urbanism and urban design techniques. Issues and sites range from high-density urban in-fill to suburban and greenfield development in American and other contexts. Studio theories explore such topics as Contextualism, Neo-Traditional design, Transit Oriented Development, density, sustainable development, building typology, and street design.

**Prerequisite:** Minimum grade of C- in ARCH406.

**Restriction:** Must be in Architecture (Master's) program.

## ARCH408 Special Topics Architecture Design Studio (6 Credits)

Design Studio course to examine topical problems in architecture and urban design.

**Restriction:** Must be in a major in ARCH-Architecture Program; and permission of ARCH-Architecture Program.

**Repeatable to:** 12 credits if content differs.

**Additional Information:** May also be taken for repeat credit for ARCH400, ARCH401, ARCH402, or ARCH403 only by permission of Architecture Program Director.

## ARCH418 Selected Topics in Architectural Technology (3 Credits)

Selected Topics in Architectural Technology

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

## ARCH419 Independent Studies in Architectural Technology (1-4 Credits)

Proposed work must have a faculty sponsor and receive approval of the Architecture Program Curriculum Committee.

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

## ARCH420 History of American Architecture (3 Credits)

American architecture from the late 17th to the 21st century.

**Prerequisite:** ARCH225 and ARCH226; or ARCH425 and ARCH426; or permission of the ARCH-Architecture program.

## ARCH423 History of Roman Architecture (3 Credits)

Survey of Roman architecture from 500 B.C. to A.D. 325.

**Prerequisite:** ARCH225 and ARCH226; or ARCH425 and ARCH426; or permission of the ARCH-Architecture Program.

## ARCH425 History of Architecture I (3 Credits)

Pre-1500 World Architecture survey course - History of Architecture structured to develop critical thinking and visually literacy with regard to the worldwide legacy of design thinking and cultural production through architecture. Structured to nurture critical thinking and visually literacy with regard to the worldwide legacy of architecture. The work in the course will involve the evaluation of sources and arguments in reading architectural history. Architecture will be framed relative to ways of thinking, religious beliefs, cultural heritage, and cultural values.

**Restriction:** Permission of ARCH-Architecture Program.

**Credit Only Granted for:** ARCH225 or ARCH425.

**Additional Information:** Graduate architecture history course requires additional recitation section and additional coursework tied to survey lectures.

**ARCH426 History of Architecture II (3 Credits)**

Post-1500 - History of Architecture survey course - History of Architecture structured to develop critical thinking and visually literacy with regard to the worldwide legacy of design thinking and building innovation in architecture. Structured to nurture critical thinking and visually literacy with regard to the worldwide legacy of architecture. The work in the course will involve the evaluation of sources and arguments in reading architectural history. Architecture will be framed relative to ways of thinking, religious beliefs, cultural heritage, and cultural values.

**Restriction:** Permission of ARCH-Architecture Program.

**Credit Only Granted for:** ARCH226 or ARCH426.

**Additional Information:** Graduate architecture history course requires additional recitation section and additional coursework tied to survey lectures.

**ARCH427 Theories of Architecture (3 Credits)**

Survey of architectural theories - theories of architectural design, representation and urban design from antiquity to the present day.

**Prerequisite:** ARCH426; or permission of ARCH-Architecture Program.

**Restriction:** Must be in Architecture (B.S.) program.

**ARCH428 Selected Topics in Architectural History (1-4 Credits)**

Selected Topics in Architectural History

**Prerequisite:** ARCH225 and ARCH226; or ARCH425 and ARCH426; or permission of the ARCH-Architecture Program.

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH429 Independent Studies in Architectural History (1-4 Credits)**

Proposed work must have a faculty sponsor and receive approval of the Architecture Program Curriculum Committee.

**Prerequisite:** ARCH225 and ARCH226; or ARCH425 and ARCH426; or permission of the ARCH-Architecture Program.

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH430 Measuring Sustainability in Architecture (3 Credits)**

Studies metrics of sustainability as included in rating standards, including LEED. All students will take the LEED GA test.

**Credit Only Granted for:** ARCH430 or ARCH418M.

**Formerly:** ARCH418M.

**ARCH435 History of Contemporary Architecture (3 Credits)**

Architectural history from World War II to the present.

**Prerequisite:** ARCH225 and ARCH226; or ARCH425 and ARCH426; or permission of the ARCH-Architecture Program.

**ARCH443 Visual Communication For Architects (3 Credits)**

Investigation of the relationship between drawing from life and architectural drawing, the conventions of architectural drawing and the role of architectural drawing as a means to develop, communicate, and generate architectural ideas.

**Corequisite:** ARCH400.

**Restriction:** Must be in Architecture (Master's) program; and must be in the 3.5 year M. ARCH program.

**ARCH445 Visual Analysis of Architecture (3 Credits)**

Study of visual principles of architectural and urban precedents through graphic analysis. Exercises include on-site observation, documentation and analysis. Focuses on the development of an architect's sketchbook as a tool for life-long learning.

**Prerequisite:** ARCH400; or permission of ARCH-Architecture Program.

**Restriction:** Must be in Architecture (B.S.) program.

**ARCH448 Selected Topics in Visual Studies in Architecture (3 Credits)**

Selected Topics in Visual Studies in Architecture

**Restriction:** Permission of ARCH-Architecture Program; and must be in a major in ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH449 Independent Studies in Visual Studies in Architecture (1-4 Credits)**

Proposed work must have a faculty sponsor and receive approval of the Architecture Program Curriculum Committee.

**Restriction:** Permission of ARCH-Architecture Program; and must be in a major in ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH456 Great Cities (3 Credits)**

Case studies from a selection of the great cities of the world.

**Prerequisite:** Permission of ARCH-Architecture Program.

**ARCH458 Selected Topics in Urban Design (3 Credits)**

Selected Topics in Urban Design

**Restriction:** Must be in a major in ARCH-Architecture Program; and permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH459 Independent Studies in Urban Design (1-4 Credits)**

Proposed work must have a faculty sponsor and receive approval of the Architecture Program Curriculum Committee.

**Restriction:** Must be in a major in ARCH-Architecture Program; and permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH460 Site Analysis and Design (3 Credits)**

Principles and methods of site analysis; the influence of natural and man-made site factors on site design and architectural form.

**Restriction:** Must be in the Master of Architecture program; or permission of the School of Architecture, Planning and Preservation.

**ARCH461 Sustainability in Architecture (3 Credits)**

Strategies of sustainability as related to the broader context of architectural problem solving.

**Restriction:** Permission of ARCH-Architecture Program.

**Credit Only Granted for:** ARCH418S or ARCH461.

**Formerly:** ARCH418S.

**ARCH462 Methods & Materials of Building Construction (3 Credits)**

Building Construction methods and materials are examined through case studies to explore the means and techniques applied to the material execution of buildings and BIM. Focus on an understanding of the organization of the design and construction process and awareness of building and zoning codes, material systems and types.

**Prerequisite:** PHYS121 or equivalent; and MATH120 or MATH140 or equivalent; or permission of the ARCH-Architecture Program.

**Restriction:** Must be in a major in undergraduate or graduate ARCH program or Construction Project Management Minor.

**Credit Only Granted for:** ARCH410 or ARCH462.

**ARCH463 Sustainable Systems in Architecture (3 Credits)**

Sustainable systems in architecture examines the nature of the global problem, environmental economics, understanding the local environment, bioclimatic design, solar control and shading, solar access zoning, residential scale energy design issues, commercial scale energy design issues, and urban scale energy design issues.

**Prerequisite:** ARCH462.

**Restriction:** Must be in a major in undergraduate or graduate ARCH program.

**ARCH464 Architectural Structures I (3 Credits)**

This course covers the basic principles of architectural structures, including the influence of geometric, sectional, and material properties related to flexure and shear in beam and framed systems; vector mechanics with application to analysis of trusses, catenaries, and arches; diagrammatic analysis of beams for bending moment, shear, and deflection as well as the study of structural framing systems for vertical and lateral loads.

**Prerequisite:** ARCH462, ARCH463, and PHYS121; and MATH120 or MATH140, or equivalent; or permission of the ARCH-Architecture Program.

**Corequisite:** ARCH401 or ARCH406.

**Restriction:** Must be in either BS in Architecture or M.Architecture Program.

**Credit Only Granted for:** ARCH411 or ARCH464.

**ARCH465 Architectural Structures II (3 Credits)**

The basic principles of elastic behavior for different materials such as wood, steel, concrete, and composite materials and compares the properties and applications of materials generally will be covered. It investigates cross sectional stress and strain behavior in flexure and in shear, and torsion as well as the stability of beams and columns. The qualitative behavior of combined stresses and fracture in materials is also covered.

**Prerequisite:** ARCH464 and PHYS121; and MATH120 or MATH140, or equivalent; or permission of the ARCH-Architecture Program.

**Restriction:** Must be in either BS in Architecture or M. Architecture Program.

**Credit Only Granted for:** ARCH412 or ARCH465.

**ARCH466 Environmental Systems in Architecture (3 Credits)**

Environmental systems in architecture presents the theory, quantification, and architectural design implications for heating ventilating and air conditioning, water and waste, fire protection, electricity, illumination, acoustics, and vertical transportation.

**Prerequisite:** ARCH462 and ARCH463.

**Corequisite:** ARCH403 or ARCH406.

**Restriction:** Must be in either BS in Architecture or M. Architecture Program.

**Credit Only Granted for:** ARCH413 or ARCH466.

**ARCH467 Integrated Project Delivery (3 Credits)**

Integrated Project Delivery is examined from design to implementation through an exploration of building construction, architectural design and construction management perspectives.

**Restriction:** Must be in a major in ARCH-Architecture Program; or must be in Construction Project Management Minor.

**ARCH468 Selected Topics in Architecture (1-4 Credits)**

Selected Topics in Architecture

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH470 Computer Applications in Architecture (3 Credits)**

Introduction to computer utilization, with emphasis on architectural applications.

**Prerequisite:** ARCH400; or permission of ARCH-Architecture Program.

**ARCH472 Building Information Modeling Communication and Collaboration (3 Credits)**

Building Information Modeling is explored as pertains to collaboration and communication in the design and construction of buildings and building systems. Practical and empirical learning using BIM software and case studies of real world projects and construction scenarios.

**Restriction:** Must be in a major in ARCH-Architecture Program; or must be in the Construction Project Management Minor.

**Credit Only Granted for:** ARCH678I or ARCH472.

**Formerly:** ARCH678I.

**ARCH478 Selected Topics in Architecture (1-4 Credits)**

Selected Topics in Architecture

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH479 Independent Studies in Architecture (1-4 Credits)**

Proposed work must have a faculty sponsor and receive approval of the Architecture Program Curriculum Committee.

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH481 The Architect in Archaeology (3 Credits)**

The role of the architect in field archaeology and the analysis of excavating, recording, and publishing selected archaeological expeditions.

**Prerequisite:** ARCH225 and ARCH226; or ARCH425 and ARCH426; or permission of the ARCH-Architecture Program.

**ARCH482 The Archaeology of Roman and Byzantine Palestine (3 Credits)**

Archaeological sites in Palestine (Israel and Jordan) from the reign of Herod the Great to the Moslem conquest.

**Prerequisite:** ARCH225 and ARCH226; or ARCH425 and ARCH426; or permission of the ARCH-Architecture Program.

**ARCH483 Field Archaeology (3 Credits)**

Participation in field archaeology with an excavation officially recognized by proper authorities of local government.

**Prerequisite:** ARCH225 and ARCH226; or ARCH425 and ARCH426; or permission of the ARCH-Architecture Program.

**ARCH488 Selected Topics in Architectural Preservation (1-4 Credits)**

Selected Topics in Architectural Preservation.

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH489 Independent Studies in Architectural Preservation (1-4 Credits)**

Proposed work must have a faculty sponsor and receive approval of the Architecture Program Curriculum Committee.

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH600 Integrated Design Studio V (6 Credits)**

Integrated and comprehensive building and site design. Course content bridges the gap between design and technology, between practice and education, in a studio setting. Explorations include the integration of conceptual and technical aspects of architectural form and assembly, highlighting the ways in which multiple layers of a building design are developed, coordinated and resolved.

**Corequisite:** ARCH611.

**Restriction:** Permission of ARCH-Architecture Program.

**ARCH601 Topical Design Studio VI (6 Credits)**

Topical architectural design studio with concentration on advanced topical inquiry addressing but not limited to: architectural competitions, sustainable design, theoretical/conceptual issues, programmatic, contextual, and/or technical issues.

**Restriction:** Permission of ARCH-Architecture Program.

**ARCH608 Advance Special Topics Design Studio (6 Credits)**

Topical architectural design studio with concentration on advanced theoretical, conceptual, technological, cultural or professional issue.

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 12 credits if content differs.

**Additional Information:** Elective Architecture Design Studio that may be taken for repeat or advanced credit in place of ARCH404, ARCH405, ARCH406, ARCH407, ARCH600, ARCH601, ARCH700 or an additional design studio.

**ARCH611 Advanced Architecture Technology Seminar (3 Credits)**

Technology in design of buildings. Application of technological issues in building design; integration of technology in architecture; technology as a form determinant in architecture; other conceptual and philosophical issues related to the application of technology in the design, construction, and use of buildings.

**Corequisite:** ARCH600.

**Restriction:** Permission of ARCH-Architecture Program.

**ARCH618 Selected Topics in Architectural Technology (3 Credits)**

Selected Topics in Architectural Technology

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 12 credits if content differs.

**ARCH628 Selected Topics in Architectural History (1-4 Credits)**

Graduate Selected Topics in Architectural History

**Prerequisite:** ARCH225 and ARCH226; or ARCH425 and ARCH426; or permission of the ARCH-Architecture Program.

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH629 Graduate Independent Studies in Architectural History (1-4 Credits)**

Proposed work must have a faculty sponsor and receive approval of the Architecture Program Curriculum Committee.

**Prerequisite:** ARCH225 and ARCH226; or ARCH425 and ARCH426; or permission of the ARCH-Architecture Program.

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH635 Seminar in the History of Modern Architecture (3 Credits)**

Advanced investigation of historical problems in modern architecture.

**Prerequisite:** ARCH225 and ARCH226; or ARCH425 and ARCH426; or permission of the ARCH-Architecture Program.

**ARCH654 Urban Development and Design Theory (3 Credits)**

Advanced investigation into the history, and practice of urban design, planning, and development.

**Prerequisite:** ARCH225 and ARCH226; or ARCH425 and ARCH426; or permission of the ARCH-Architecture Program.

**Restriction:** Permission of ARCH-Architecture Program.

**ARCH655 Urban Design Seminar (3 Credits)**

Advanced investigation into problems of analysis and evaluation of the design of urban areas, spaces, and complexes with emphasis on physical and social considerations; effects of public policies through case studies. Field observations.

**Prerequisite:** ARCH654; or permission of ARCH-Architecture Program.

**Credit Only Granted for:** ARCH451 or ARCH655.

**Formerly:** ARCH451.

**ARCH658 Selected Topics in Urban Design (3 Credits)**

Selected Topics in Urban Design

**Restriction:** Must be in a major in ARCH-Architecture Program; and permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH668 Advanced Selected Topics in Architecture (1-4 Credits)**

Graduate Selected Topics in Architecture.

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH670 Advanced Computer Applications in Architecture (3 Credits)**

Advanced use of computer technology in design. Use of digital design processes and conceptual methodologies to study design alternatives and realization. Methods and techniques of digital design representation, simulation, or fabrication to explore and test concepts and integration of digital technologies into the architectural design process.

**Restriction:** Permission of ARCH-Architecture Program.

**Credit Only Granted for:** ARCH678C or ARCH670.

**Formerly:** ARCH678C.

**ARCH671 BIM Technology and Processes in Architecture (3 Credits)**

Building Information Modeling is examined in depth relative to Integrated Project Delivery methods as pertains to collaboration and communication in the design and construction of buildings and building systems. Practical and empirical learning using BIM software and case studies of real world projects and construction scenarios.

**Prerequisite:** ARCH403; and ARCH470. Or students who have taken courses with comparable content may contact the department.

**Credit Only Granted for:** ARCH678I or ARCH670.

**Formerly:** ARCH678I.

**ARCH673 Building Culture Seminar (3 Credits)**

Comprehension of major themes in the development of architectural building techniques and culture value systems in architecture are developed through lecture, discussion and analysis of seminal readings and buildings.

**Restriction:** Permission of ARCH-Architecture Program.

**ARCH678 Advanced Selected Topics in Architecture (1-4 Credits)**

Graduate Selected Topics in Architecture.

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH679 Advanced Independent Studies in Architecture (1-4 Credits)**

Proposed work must have a faculty sponsor and receive approval of the Architecture Program Curriculum Committee.

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH688 Advanced Selected Topics in Architectural Technologies (1-4 Credits)**

Graduate Selected Topics in Architectural Technologies.

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.



**ARCH689 Advanced Independent Studies in Architectural Technologies (1-4 Credits)**

Proposed work must have a faculty sponsor and receive approval of the Architecture Program Curriculum Committee.

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH700 Urban Design Studio VII (6 Credits)**

Studio problems and theories concentrating on urbanism and urban design techniques. Issues and sites range from high density urban in-fill to suburban and greenfield development in American and other contexts. Studio theories explore such topics as Contextualism, Neo-Traditional design, Transit-Oriented Development, density, sustainable development building typology, and street design.

**Restriction:** Permission of ARCH-Architecture Program.

**ARCH770 Professional Practice of Architecture (3 Credits)**

Project management, organizational, legal, economic and ethical aspects of architecture.

**Restriction:** Permission of ARCH-Architecture Program.

**ARCH778 Graduate Selected Topics in Urban Design (1-4 Credits)**

Graduate Selected Topics in Urban Design.

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH779 Advanced Independent Studies in Urban Design (1-4 Credits)**

Proposed work must have a faculty sponsor and receive approval of the Architecture Program Curriculum Committee.

**Restriction:** Permission of ARCH-Architecture Program.

**Repeatable to:** 6 credits if content differs.

**ARCH797 Thesis Proseminar (3 Credits)**

Directed research and preparation of thesis program.

**Prerequisite:** ARCH601.

**ARCH798 Thesis in Architecture (3 Credits)**

Complements the research of ARCH 799, with presentation of the design research to student's thesis committee.

**Prerequisite:** ARCH797.

**Corequisite:** ARCH799.

**Restriction:** Must be in Architecture (Master's) program; and permission of ARCH-Architecture Program; and minimum cumulative GPA of 3.0.

**ARCH799 Master's Thesis Research (1-6 Credits)**

Development of master's thesis.

**Prerequisite:** ARCH797.

**Corequisite:** ARCH798.

**Restriction:** Must be in Architecture (Master's) program; and permission of ARCH-Architecture Program; and minimum cumulative GPA of 3.0.

**Repeatable to:** 6 credits if content differs.