

ARCHITECTURE (ARCH)

ARCH 1112 Introduction to Architecture

Description: An introduction to the professions of architecture and architectural engineering. Previously offered as ARCH 1111.

Credit hours: 2

Contact hours: Lecture: 2

Levels: Undergraduate

Schedule types: Lecture

Department/School: Architecture

ARCH 1216 Architectural Design Studio I

Description: Architectural graphics and design fundamentals. Students who have not received a grade for ARCH 1216 will be given first priority in enrollment. Students who have received a grade in this course will be admitted on a space available basis and at the discretion of the school head and architecture adviser.

Credit hours: 6

Contact hours: Lab: 12

Levels: Undergraduate

Schedule types: Lab

Department/School: Architecture

ARCH 2003 Architecture and Society (HI)

Description: Design, planning, and building considered in their social and aesthetic contexts. Some sections may be restricted to Architecture and Architectural Engineering majors, see course offerings.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Undergraduate

Schedule types: Lecture

Department/School: Architecture

General Education and other Course Attributes: Humanities, International Dimension

ARCH 2100 Architectural Studies

Description: Beginning studies in graphics and design in architecture. Offered for variable credit, 1-4 credit hours, maximum of 4 credit hours.

Credit hours: 1-4

Contact hours: Other: 1

Levels: Undergraduate

Schedule types: Independent Study

Department/School: Architecture

ARCH 2116 Architectural Design Studio II

Prerequisites: Grade of "C" or better in ARCH 1216.

Description: Students who have not received a grade for ARCH 2116 will be given first priority in enrollment. Students who have received a grade in this course will be admitted on a space available basis and at the discretion of the school head and architecture adviser. Problems in architectural design.

Credit hours: 6

Contact hours: Lecture: 6

Levels: Undergraduate

Schedule types: Lecture

Department/School: Architecture

ARCH 2203 History and Theory of Architecture Since 1900

Prerequisites: ARCH 2003 or consent of instructor.

Description: History and theory of world architecture in the 20th century and beyond.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Undergraduate

Schedule types: Lecture

Department/School: Architecture

ARCH 2216 Architectural Design Studio III

Prerequisites: Grade of "C" or better in ARCH 1216 and ARCH 2116.

Students who have not received a grade for ARCH 2216 will be given first priority in enrollment. Students who have received a grade in this course will be admitted on a space available basis and at the discretion of the school head and architecture adviser.

Description: Problems in architectural design.

Credit hours: 6

Contact hours: Lab: 12

Levels: Undergraduate

Schedule types: Lab

Department/School: Architecture

ARCH 2263 Building Systems

Prerequisites: Grade of "C" or better in ARCH 1216 and ARCH 2116.

Description: Architectural, structural, and environmental control systems.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Undergraduate

Schedule types: Lecture

Department/School: Architecture

ARCH 3083 History and Theory of Baroque Architecture (H)

Prerequisites: ARCH 2003.

Description: History and theory of renaissance architecture in the western world, particularly the later Baroque period.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Undergraduate

Schedule types: Lecture

Department/School: Architecture

General Education and other Course Attributes: Humanities

ARCH 3100 Special Topics in Architecture

Description: Subjects to be selected by the faculty in architecture from advances in state-of-the-art areas. Offered for variable credit, 1-6 credit hours, maximum of 12 credit hours.

Credit hours: 1-6

Contact hours: Other: 1

Levels: Undergraduate

Schedule types: Independent Study

Department/School: Architecture

ARCH 3116 Architectural Design Studio IV

Prerequisites: Grade of "C" or better in ARCH 2216 and admission to third year.

Description: Problems in architectural design.

Credit hours: 6

Contact hours: Lab: 12

Levels: Undergraduate

Schedule types: Lab

Department/School: Architecture

ARCH 3134 Architectural Science I: Thermal Systems and Life Safety

Prerequisites: MATH 1513 or MATH 1715.

Description: A survey of the fundamentals of thermal comfort, energy concerns and mechanical systems for buildings as well as the basic principles of life safety.

Credit hours: 4

Contact hours: Lecture: 3 Lab: 2

Levels: Undergraduate

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Architecture

ARCH 3143 Structures: Analysis I

Prerequisites: Grade of "C" or better in ENSC 2143.

Description: Structural theory for applications in architecture. Previously offered as ARCH 3243.

Credit hours: 3

Contact hours: Lecture: 2 Lab: 2

Levels: Undergraduate

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Architecture

ARCH 3173 History and Theory of American Architecture

Prerequisites: ARCH 2003 or consent of instructor.

Description: History and theory of American architecture from the colonial period to the present day.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Undergraduate

Schedule types: Lecture

Department/School: Architecture

ARCH 3216 Architectural Design Studio V

Prerequisites: Grade of "C" or better in ARCH 3116, ARCH 3252.

Description: Problems in architectural design.

Credit hours: 6

Contact hours: Lab: 12

Levels: Undergraduate

Schedule types: Lab

Department/School: Architecture

ARCH 3223 Structures: Timbers

Prerequisites: Grade of "C" or better in ARCH 3323.

Description: Analysis and design of timber structures used in architecture.

Credit hours: 3

Contact hours: Lecture: 3 Lab: 0

Levels: Undergraduate

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Architecture

ARCH 3224 Structures: Steel II

Prerequisites: Grade of "C" or better in ARCH 3323 and ARCH 3143.

Description: Design and analysis of multi-story steel frames, trusses, arches, and other architectural structure components. Previously offered as ARCH 4244 and ARCH 4144.

Credit hours: 4

Contact hours: Lecture: 3 Lab: 2

Levels: Undergraduate

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Architecture

ARCH 3252 Computer Applications in Architecture I

Prerequisites: Grade of C or better in ARCH 2116, and concurrent enrollment in ARCH 2216.

Description: Introduction to 2D and 3D computer topics and their application in the design process. No credit for students with credit in ARCH 3253.

Credit hours: 2

Contact hours: Lecture: 2

Levels: Undergraduate

Schedule types: Lecture

Department/School: Architecture

ARCH 3262 Computer Applications in Architecture II

Prerequisites: Grade of "C" or better in ARCH 3252 and concurrent enrollment in ARCH 3216 or ENGR 1412 and admission to Professional School.

Description: State-of-the-art applications of computers to the practice of architecture and architectural engineering. Previously offered as ARCH 4053.

Credit hours: 2

Contact hours: Lecture: 1 Lab: 2

Levels: Undergraduate

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Architecture

ARCH 3263 Materials In Architecture

Prerequisites: Grade of "C" or better in ARCH 2263 and admission to third year.

Description: Introduction to the basic materials used in the construction of architecture and how such materials affect both the design and implementation of the systems that incorporate these materials.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Undergraduate

Schedule types: Lecture

Department/School: Architecture

ARCH 3273 History and Theory of Medieval Architecture

Prerequisites: ARCH 2003 or consent of instructor.

Description: History and theory of the architecture created between the 8th and 15th centuries in Europe, and its impact on the subsequent religious architecture of today.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Undergraduate

Schedule types: Lecture

Department/School: Architecture

ARCH 3323 Structures: Steel I

Prerequisites: Grade of "C" or better in ENSC 2113 and admission to the Professional Program or permission of school head and adviser.

Description: Analysis and design of steel structures used in architecture.

Credit hours: 3

Contact hours: Lecture: 3 Lab: 0

Levels: Undergraduate

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Architecture

ARCH 3353 Advanced Graphics and Theory of Representation

Prerequisites: Admission to Professional School or consent of instructor.

Description: Manual and digital graphic techniques are explored in a project-based studio learning environment.

Credit hours: 3

Contact hours: Lecture: 2 Lab: 2

Levels: Undergraduate

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Architecture

ARCH 3370 Urban USA Field Study

Prerequisites: Admission to Professional School.

Description: On-site analysis and study of architecture, culture and urban design of major urban centers in the USA. Offered for variable credit, 2-3 credit hours, maximum of 3 credit hours.

Credit hours: 2-3

Contact hours: Other: 2

Levels: Undergraduate

Schedule types: Independent Study

Department/School: Architecture

ARCH 3433 Architectural Science II: Acoustics and Lighting

Prerequisites: MATH 1513 or MATH 1715

Description: A survey of architectural acoustics, electrical, and lighting systems for buildings.

Credit hours: 3

Contact hours: Lecture: 2 Other: 1

Levels: Undergraduate

Schedule types: Discussion, Combined lecture & discussion, Lecture

Department/School: Architecture

ARCH 4073 History and Theory of Early Modern Architecture

Prerequisites: ARCH 2003.

Description: History and theory of modern architecture in the western world from the industrial revolution to the early twentieth century.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Undergraduate

Schedule types: Lecture

Department/School: Architecture

ARCH 4093 Architectural Project Management

Prerequisites: Concurrent enrollment in ARCH 4216 or ARCH 5226 or consent of instructor.

Description: Principles of management as applied to architectural and architectural engineering projects. Previously offered as ARCH 5293.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Undergraduate

Schedule types: Lecture

Department/School: Architecture

ARCH 4100 Special Topics in Architecture

Prerequisites: Consent of instructor and head of the school.

Description: Subjects to be selected by the faculty in architecture from advances in state-of-the-art areas. Offered for variable credit, 1-6 credit hours, maximum of 12 credit hours.

Credit hours: 1-6

Contact hours: Other: 1

Levels: Undergraduate

Schedule types: Independent Study

Department/School: Architecture

ARCH 4116 Design Studio VI

Prerequisites: Grade of "C" or better in ARCH 3216 and ARCH 3262.

Description: Problems in architectural design. Previously offered as ARCH 4517.

Credit hours: 6

Contact hours: Lab: 12

Levels: Undergraduate

Schedule types: Lab

Department/School: Architecture

ARCH 4123 Structures: Concrete I

Prerequisites: Grade of "C" or better in ARCH 3223.

Description: Analysis and design applications in architectural problems using concrete structures.

Credit hours: 3

Contact hours: Lecture: 3 Lab: 0

Levels: Graduate, Undergraduate

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Architecture

ARCH 4131 Architectural Science Lab

Prerequisites: Enrollment by permission of instructor or academic advisor; senior standing.

Description: Laboratory experiments for building systems. Systems may include heating, cooling, electrical, lighting, acoustics and plumbing.

Credit hours: 1

Contact hours: Lab: 2

Levels: Undergraduate

Schedule types: Lab

Department/School: Architecture

ARCH 4134 Architectural Science I: Thermal Systems and Life Safety for Architectural Engineers

Prerequisites: ENSC 2213 or concurrent enrollment.

Description: Engineering based fundamentals of thermal comfort, energy concerns, and mechanical systems for buildings, as well as the basic principles of life safety.

Credit hours: 4

Contact hours: Lecture: 3 Lab: 2

Levels: Undergraduate

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Architecture

ARCH 4143 Structures: Foundations for Buildings

Prerequisites: Grade of "C" or better in ARCH 4123.

Description: Interaction of frames and supports for structures used in architecture. Subsurface conditions and design of foundation systems and retaining walls for buildings.

Credit hours: 3

Contact hours: Lecture: 2 Lab: 2

Levels: Graduate, Undergraduate

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Architecture

ARCH 4173 History and Theory of Skyscraper Design (H)

Prerequisites: ARCH 2003 or consent of instructor.

Description: History and theory of the development of the skyscraper in the USA from the late 19th century to the present.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Undergraduate

Schedule types: Lecture

Department/School: Architecture

General Education and other Course Attributes: Humanities

ARCH 4183 History and Theory of Architecture: Cities

Prerequisites: ARCH 2003.

Description: The development of cities as an aspect of architecture from ancient times to the twentieth century.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Graduate, Undergraduate

Schedule types: Lecture

Department/School: Architecture

ARCH 4216 Architectural Design Studio VII

Prerequisites: Grade of "C" or better in ARCH 3134, ARCH 3433, ARCH 4116 and ARCH 4143.

Description: Problems in architectural design.

Credit hours: 6

Contact hours: Lab: 16

Levels: Undergraduate

Schedule types: Lab

Department/School: Architecture

ARCH 4224 Structures: Concrete II

Prerequisites: Grades of "C" or better in ARCH 3442, ARCH 4123, and ARCH 4143.

Description: Design and analysis of multi-story reinforced concrete frames and prestressed and post-stressed concrete structural components used in architecture applications. Previously offered as ARCH 4225.

Credit hours: 4

Contact hours: Lecture: 3 Lab: 2

Levels: Graduate, Undergraduate

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Architecture

ARCH 4233 Sustainable Design in Architecture

Prerequisites: Grade of "C" or better in ARCH 3134.

Description: Sustainability topics and their application to architecture.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Graduate, Undergraduate

Schedule types: Lecture

Department/School: Architecture

ARCH 4263 Architecture Seminar

Prerequisites: Concurrent enrollment in ARCH 4216 or ARCH 5226.

Description: Topics in architecture and architectural engineering.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Undergraduate

Schedule types: Lecture

Department/School: Architecture

ARCH 4273 History and Theory of Islamic Architecture

Prerequisites: ARCH 2003.

Description: Architecture of the Islamic World.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Graduate, Undergraduate

Schedule types: Lecture

Department/School: Architecture

ARCH 4293 The Ethics of the Built Environment (H)

Prerequisites: Admission to the professional program or consent of instructor.

Description: Analysis of basic values that determine the form of the built environment.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Undergraduate

Schedule types: Lecture

Department/School: Architecture

General Education and other Course Attributes: Humanities

ARCH 4353 Computational Foundations

Prerequisites: ARCH 3252 or permission of advisor.

Description: The use of advanced digital design tools for architectural projects.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Undergraduate

Schedule types: Lecture

Department/School: Architecture

ARCH 4373 Field Study in Europe I

Prerequisites: Senior standing in architecture or consent of instructor.

Description: On-site analysis and study of European architecture, culture, and urban design.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Graduate, Undergraduate

Schedule types: Lecture

Department/School: Architecture

ARCH 4374 International Field Study (HI)

Prerequisites: Admission to Professional Program in Architecture or Architectural Engineering or approval of instructor and head of school.

Description: On-site analysis and study of international architecture, culture and urban design.

Credit hours: 4

Contact hours: Lab: 8

Levels: Undergraduate

Schedule types: Lab

Department/School: Architecture

General Education and other Course Attributes: Humanities, International Dimension

ARCH 4383 History and Theory of Modern Architecture in Italy

Prerequisites: ARCH 2003 or consent of instructor.

Description: History and theory of the progressive experimental architecture created in Italy in the Modern era amidst the cultural, economic, and political realities of 1909-1943.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Undergraduate

Schedule types: Lecture

Department/School: Architecture

ARCH 4433 Architectural Science II: Acoustics and Lighting for Architectural Engineers**Prerequisites:** ENSC 2613 or concurrent enrollment.**Description:** Engineering based fundamentals of architectural acoustics and electrical/lighting systems for buildings.**Credit hours:** 3**Contact hours:** Lecture: 2 Lab: 2**Levels:** Undergraduate**Schedule types:** Lab, Lecture, Combined lecture and lab**Department/School:** Architecture**ARCH 4444 Structures: Analysis II****Prerequisites:** Grade of "C" or better in ARCH 3143 and ENGR 1412.**Description:** Mathematical formulation of architectural structural behavior. Matrix applications, finite element, finite differences, stability considerations, and three dimensional structural modeling.**Credit hours:** 4**Contact hours:** Lecture: 3 Lab: 2**Levels:** Graduate, Undergraduate**Schedule types:** Lab, Lecture, Combined lecture and lab**Department/School:** Architecture**ARCH 5023 Masonry Design and Analysis****Prerequisites:** Grade of "C" or better in ARCH 4123.**Description:** Analysis and design of low-rise masonry structures and multi-story masonry shear walls, including code requirements, analysis techniques, design of components, and detailing of architectural engineering contract documents conforming to the relevant codes.**Credit hours:** 3**Contact hours:** Lecture: 3**Levels:** Graduate, Undergraduate**Schedule types:** Lecture**Department/School:** Architecture**ARCH 5093 Real Estate Development****Prerequisites:** Admission to professional program, or consent of instructor.**Description:** Introduction to real estate development as a function of project conception, analysis, design and delivery. Same course as EEE 5200.**Credit hours:** 3**Contact hours:** Lecture: 3**Levels:** Graduate, Undergraduate**Schedule types:** Lecture**Department/School:** Architecture**ARCH 5100 Special Topics in Architecture****Prerequisites:** Consent of instructor and head of the school.**Description:** Subjects to be selected by the faculty in architecture from advances in state-of-the-art areas. Offered for variable credit, 1-6 credit hours, maximum of 12 credit hours.**Credit hours:** 1-12**Contact hours:** Other: 1**Levels:** Graduate, Undergraduate**Schedule types:** Independent Study**Department/School:** Architecture**ARCH 5117 Architectural Design Studio VIII****Prerequisites:** Grade of "C" or better in 4216 or permission of school head or advisor.**Description:** Problems in architectural design. Additional fee of \$25.00 per credit hour applies. No credit for students with credit in ARCH 5116.**Credit hours:** 7**Contact hours:** Lab: 16**Levels:** Graduate, Undergraduate**Schedule types:** Lab**Department/School:** Architecture**ARCH 5133 Advanced Energy Issues in Architecture****Credit hours:** 3**Contact hours:** Lecture: 3**Levels:** Graduate, Undergraduate**Schedule types:** Lecture**Department/School:** Architecture**ARCH 5143 Structures: Special Loadings****Prerequisites:** Grade of "C" or better in ARCH 4444.**Description:** Mathematical formulations and modeling in architectural structures. Human response to vibrations. Seismic design in building. Design for extreme winds on buildings. Approximate methods for preliminary design of architectural structures. Previously offered as ARCH 5243.**Credit hours:** 3**Contact hours:** Lecture: 2 Lab: 2**Levels:** Graduate, Undergraduate**Schedule types:** Lab, Lecture, Combined lecture and lab**Department/School:** Architecture**ARCH 5193 Management of Architectural Practice****Prerequisites:** Fifth-year standing in architecture or architectural engineering or consent of instructor.**Description:** Principles of management as applied to the private practice of architecture and architectural engineering.**Credit hours:** 3**Contact hours:** Lecture: 3**Levels:** Graduate, Undergraduate**Schedule types:** Lecture**Department/School:** Architecture**ARCH 5217 Architectural Design Studio IX****Prerequisites:** Grade of "C" or better in 5117 or consent of instructor.**Description:** Problems in architectural design. Previously offered as ARCH 5216.**Credit hours:** 7**Contact hours:** Lab: 16**Levels:** Graduate, Undergraduate**Schedule types:** Lab**Department/School:** Architecture**ARCH 5226 Architectural Engineering Comprehensive Design Studio****Prerequisites:** Grade of "C" or better in ARCH 3224, ARCH 4134, ARCH 4224, and ARCH 4433.**Description:** Problems in architectural and architectural engineering design. May not be used for degree credit with ARCH 4216.**Credit hours:** 6**Contact hours:** Lecture: 6**Levels:** Graduate, Undergraduate**Schedule types:** Lab**Department/School:** Architecture

ARCH 5373 Field Study in Europe II

Prerequisites: Senior standing in architecture or consent of instructor
Description: On-site analysis and study of European architecture, culture and urban design.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate, Undergraduate
Schedule types: Lecture
Department/School: Architecture

ARCH 5493 Entrepreneurship and Architecture

Prerequisites: Senior standing.
Description: Introduction to entrepreneurship within the context of architecture, with direct application to architectural services, activities, and products. Emphasis on implementing the entrepreneurial process in starting and sustaining new ventures that significantly shape the built environment. Same course as EEE 5493.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate, Undergraduate
Schedule types: Lecture
Department/School: Architecture

ARCH 6000 Special Problems

Prerequisites: Consent of instructor and head of school.
Description: Theory, research or design investigation in specific areas of study in the field of architecture and its related disciplines. Plan of study determined jointly by student and graduate faculty. Offered for variable credit, 1-15 credit hours, maximum of 15 credit hours.
Credit hours: 1-15
Contact hours: Other: 1
Levels: Graduate
Schedule types: Independent Study
Department/School: Architecture

ARCH 6083 History and Theory of Contemporary Architecture

Prerequisites: Graduate standing or consent of instructor
Description: American architecture beginning in the 16th century through the 20th century.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate, Undergraduate
Schedule types: Lecture
Department/School: Architecture

ARCH 6113 Creative Component Research

Prerequisites: Admission to graduate program.
Description: Data gathering, analysis and program formulation related to creative component.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Architecture

ARCH 6117 Graduate Design Studio

Prerequisites: Admission to graduate program.
Description: Problems in architectural design.
Credit hours: 7
Contact hours: Lab: 14
Levels: Graduate
Schedule types: Lab
Department/School: Architecture

ARCH 6203 Creative Component in Architectural Engineering

Description: A design project based on a program previously developed by the student, to include a written report and supporting documents when appropriate. Must be approved by the project advisor and completed in the final semester of the graduate program.
Credit hours: 3
Contact hours: Lab: 6
Levels: Graduate
Schedule types: Lab
Department/School: Architecture

ARCH 6207 Creative Component in Architecture

Prerequisites: ARCH 6117.
Description: A design project based on a program previously developed by the student to include a written report and supportive documents when appropriate. Must be approved by the project adviser and completed in the final semester of the graduate program.
Credit hours: 7
Contact hours: Other: 7
Levels: Graduate
Schedule types: Independent Study
Department/School: Architecture

ARCH 6243 Structures: Analysis III

Prerequisites: Grade of "C" or better in ARCH 4444 and admission to the graduate program.
Description: Analysis techniques for architectural structures including stability, space frames, computer applications, guyed towers and project research.
Credit hours: 3
Contact hours: Lecture: 2 Lab: 2
Levels: Graduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Architecture

ARCH 6343 Structures: Steel III

Prerequisites: Grade of "C" or better in ARCH 3224.
Description: Plastic analysis and design of structural steel frames utilizing load and resistance factor design.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate, Undergraduate
Schedule types: Lecture
Department/School: Architecture

ARCH 6543 Structures: Concrete III

Prerequisites: Grade of C or better in ARCH 4224.
Description: Design of prestressed concrete structures, including pre- and post-tensioning.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate, Undergraduate
Schedule types: Lecture
Department/School: Architecture