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 Contact: 2
Levels: Undergraduate
Schedule types: Lecture
Department/School: Architecture

ARCH 1216 Architectural Design Studio I
Prerequisites: Grade of "C" or better in ARCH 1112, or consent of instructor.
Description: Architectural graphics and design fundamentals. Students progressing in the Physics 1114/2014 and MATH 2144 course sequence will be given preference in enrollment. Additionally, 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 Contact: 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 Architectural Engineering majors, see course offerings. May not be used for degree credit with ARCH 2183.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 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: Contact: 1-4 Other: 1-4
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: Lab: 12 Contact: 12
Levels: Undergraduate
Schedule types: Lab
Department/School: Architecture

ARCH 2183 History and Theory of Architecture I
Description: History and theory of the Pre-Enlightenment era of architecture in the Western world. May not be used for degree credit with ARCH 2003.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Architecture

ARCH 2203 History and Theory of Architecture Since 1900
Prerequisites: ARCH 2003. Grade of "C" or better.
Description: History and theory of world architecture in the 20th century and beyond. May not be used for degree credit with ARCH 2283.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 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 Contact: 12
Levels: Undergraduate
Schedule types: Lab
Department/School: Architecture

ARCH 2252 Design Communication I: Visual and Graphic Acuity
Prerequisites: Co-requisite enrollment in ARCH 2116 or permission of instructor.
Description: Introduction to the communication strategies unique to the professions of architecture and architectural engineering.
Credit hours: 2
Contact hours: Lecture: 2 Contact: 2
Levels: Undergraduate
Schedule types: Lecture
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 Contact: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Architecture

ARCH 2283 History and Theory of Architecture II (H)
Description: A study of mankind's accomplishments exhibited in architecture from the renaissance to the present day. May not be used for degree credit with ARCH 2203.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Architecture
General Education and other Course Attributes: Humanities
ARCH 2890 Honors for Topics in Architecture
Prerequisites: Honors student standing.
Description: Honors Topics course to be used as an Add on for students concurrently enrolled in other ARCH courses, or can be used as a stand-alone course. Enrichment experiences to enhance the understanding of Architectural design. Offered for variable credit, 1-3 credit hours, maximum of 3 credit hours.
Credit hours: 1-3
Contact hours: Lecture: 1-3 Contact: 1-3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Architecture
General Education and other Course Attributes: Honors Credit

ARCH 3033 Design Methods
Prerequisites: ARCH 2216 or permission of instructor.
Description: Investigations in design problem solving.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Architecture

ARCH 3043 Structural Loadings in Architecture
Prerequisites: "C" or better in ENSC 2143, and/or co-requisite enrollment in ARCH 3143.
Description: An exploration of types of loadings and their application in the design of building structures.
Credit hours: 3
Contact hours: Lecture: 2 Lab: 2 Contact: 4
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Architecture

ARCH 3083 History and Theory of Renaissance and Baroque Architecture (H)
Prerequisites: ARCH 2003. Grade of "C" or better. Or ARCH 2283. Grade of "C" or better.
Description: History and theory of Renaissance and Baroque architecture in the western world.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 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: Contact: 1-6 Other: 1-6
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 Professional School.
Description: Problems in architectural design.
Credit hours: 6
Contact hours: Lab: 12 Contact: 12
Levels: Undergraduate
Schedule types: 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 Contact: 4
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Architecture

ARCH 3163 Architectural Science I: Thermal Systems and Life Safety for Architects
Prerequisites: Admission to Professional School, or permission of instructor.
Description: A survey of the scientific and design fundamentals of thermal comfort, building physics, building performance and energy concerns, and mechanical systems for buildings as well as the basic principles of life safety. May not be used for degree credit with ARCH 4134 or ARCH 4163. Previously offered as ARCH 3134.
Credit hours: 3
Contact hours: Lecture: 2 Lab: 2 Contact: 4
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Architecture

ARCH 3173 History and Theory of American Architecture
Prerequisites: ARCH 2003. Grade of "C" or better. Or ARCH 2283. Grade of "C" or better.
Description: History and theory of American architecture from the colonial period to the present day.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Architecture

ARCH 3116 Architectural Design Studio V
Prerequisites: Grade of "C" or better in ARCH 3116.
Description: Problems in architectural design.
Credit hours: 6
Contact hours: Lab: 12 Contact: 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: 2 Lab: 2 Contact: 4
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 3233 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 Contact: 5
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 Contact: 2
Levels: Undergraduate
Schedule types: Lecture
Department/School: Architecture

ARCH 3253. 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 Contact: 2
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Architecture

ARCH 3262 Design Communication II: Advanced Digital Applications
Prerequisites: Grade of "C" or better in ARCH 2252 and 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: 3
Contact hours: Lecture: 1 Lab: 2 Contact: 3
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 Professional School.
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 Contact: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Architecture

ARCH 3273 History and Theory of Medieval Architecture
Prerequisites: ARCH 2003, Grade of "C" or better. Or ARCH 2183, Grade of "C" or better. 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 Contact: 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 advisor.
Description: Analysis and design of steel structures used in architecture.
Credit hours: 3
Contact hours: Lecture: 2 Lab: 2 Contact: 4
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Architecture

ARCH 3343 Structures: Steel II
Prerequisites: Grade of "C" or better in ARCH 3323 and ARCH 3043.
Description: Analysis, design, detailing and documentation of multi-story steel structures, and other structural components used in architecture applications. Previously offered as ARCH 3224.
Credit hours: 3
Contact hours: Lecture: 2 Lab: 2 Contact: 4
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Architecture

ARCH 3353 Advanced Graphics and Theory of Representation
Prerequisites: Grade of "C" or better in ARCH 2252 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 Contact: 4
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Architecture

ARCH 3373 Design and Diversity in Urban Centers of the US
Prerequisites: Permission of Instructor.
Description: Field study analysis of the diverse social and cultural issues evidenced through the design of architecture in major urban centers of the United States. Previously offered as ARCH 3370.
Credit hours: 3
Contact hours: Lab: 6 Contact: 6
Levels: Undergraduate
Schedule types: Lab
Department/School: Architecture

ARCH 3433 Architectural Science II: Acoustics, Lighting, and Service Systems
Prerequisites: MATH 2144, Grade of "C" or better.
Description: A survey of scientific and design fundamentals of architectural acoustics, lighting, electrical, and signal, conveying, and plumbing systems for buildings. May not be used for degree credit with ARCH 4433.
Credit hours: 3
Contact hours: Lecture: 2 Lab: 2 Contact: 4
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Architecture
ARCH 3473 History and Theory of Structures in Architecture (H)
Prerequisites: "C" or better in ARCH 2003 or ARCH 2183 or ARCH 2283.
Description: A study of the language of structural systems as manifested in architecture through the ages.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Architecture
General Education and other Course Attributes: Humanities

ARCH 4073 History and Theory of Early Modern Architecture
Prerequisites: ARCH 2003, Grade of "C" or better. Or ARCH 2283, Grade of "C" or better.
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 Contact: 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 Contact: 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: Contact: 1-6 Other: 1-6
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 Contact: 12
Levels: Undergraduate
Schedule types: Lab
Department/School: Architecture

ARCH 4123 Structures: Concrete I
Prerequisites: Grade of "C" or better in ARCH 3323.
Description: Analysis and design applications in architectural problems using concrete structures.
Credit hours: 3
Contact hours: Lecture: 2 Lab: 2 Contact: 4
Levels: 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 Contact: 2
Levels: Undergraduate
Schedule types: Lab
Department/School: Architecture

ARCH 4143 Structures: Foundations for Buildings
Prerequisites: Grade of "C" or better in ARCH 4123.
Description: Subsurface soil conditions and design of foundation systems and retaining walls for buildings.
Credit hours: 3
Contact hours: Lecture: 2 Lab: 2 Contact: 4
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Architecture

ARCH 4163 Architectural Science I: Thermal Systems and Life Safety for Architectural Engineers
Prerequisites: Admission to Professional School, or permission of instructor.
Description: A survey of the scientific and design fundamentals of thermal comfort, building physics, building performance and energy concerns, and mechanical systems for buildings, as well as the basic principles of life safety. May not be used for degree credit with ARCH 3134, ARCH 4134, or ARCH 3163. Previously offered as ARCH 4134.
Credit hours: 3
Contact hours: Lecture: 2 Lab: 2 Contact: 4
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Architecture

ARCH 4173 History and Theory of Skyscraper Design (H)
Prerequisites: ARCH 2003, Grade of "C" or better. Or ARCH 2283, Grade of "C" or better.
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 Contact: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Architecture

ARCH 4183 History and Theory of Architecture: Cities
Prerequisites: ARCH 2003, Grade of "C" or better. Or ARCH 2283, Grade of "C" or better.
Description: The development of cities as an aspect of architecture from ancient times to the twentieth century.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Architecture

ARCH 4193 History and Theory of Architecture: Ancient Times
Prerequisites: ARCH 2003, Grade of "C" or better. Or ARCH 2283, Grade of "C" or better.
Description: Study of the language of structural systems as manifested in architecture through the ages.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Architecture

ARCH 4203 Experimental Design Lab
Prerequisites: Grade of "C" or better in ARCH 2003 or ARCH 2283.
Description: Laboratory experiments for building systems. Systems may include heating, cooling, electrical, lighting, acoustics and plumbing.
Credit hours: 1
Contact hours: Lab: 2 Contact: 2
Levels: Undergraduate
Schedule types: Lab
Department/School: Architecture

ARCH 4216 Design Studio II
Prerequisites: ARCH 3216, Grade of "C" or better. Or ARCH 3262, Grade of "C" or better.
Description: Principles of management as applied to architectural and architectural engineering projects. Previously offered as ARCH 5293.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 3
Levels: Undergraduate
Schedule types: Lecture
Department/School: Architecture

ARCH 4223 Structures: Foundations for Buildings
Prerequisites: Grade of "C" or better in ARCH 4123.
Description: Subsurface soil conditions and design of foundation systems and retaining walls for buildings.
Credit hours: 3
Contact hours: Lab: 2 Contact: 2
Levels: Undergraduate
Schedule types: Lab
Department/School: Architecture

ARCH 4303 Architectural Science II: Water, Energy and Systems for Architectural Engineers
Prerequisites: ARCH 3134, ARCH 4134, or ARCH 3163. Previously offered as ARCH 4134.
Description: A survey of the scientific and design fundamentals of thermal comfort, building physics, building performance and energy concerns, and mechanical systems for buildings, as well as the basic principles of life safety. May not be used for degree credit with ARCH 3134, ARCH 4134, or ARCH 3163. Previously offered as ARCH 4134.
Credit hours: 3
Contact hours: Lab: 2 Contact: 2
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Architecture

ARCH 4316 Architectural Science III: Water, Energy and Systems for Architectural Engineers
Prerequisites: ARCH 3134, ARCH 4134, or ARCH 3163. Previously offered as ARCH 4134.
Description: A survey of the scientific and design fundamentals of thermal comfort, building physics, building performance and energy concerns, and mechanical systems for buildings, as well as the basic principles of life safety. May not be used for degree credit with ARCH 3134, ARCH 4134, or ARCH 3163. Previously offered as ARCH 4134.
Credit hours: 3
Contact hours: Lab: 2 Contact: 2
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Architecture

ARCH 4323 Structures: Concrete II
Prerequisites: Grade of "C" or better in ARCH 3323.
Description: Analysis and design applications in architectural problems using concrete structures.
Credit hours: 3
Contact hours: Lecture: 2 Lab: 2 Contact: 4
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Architecture
ARCH 4216 Architectural Design Studio VII  
**Prerequisites:** Grade of "C" or better in ARCH 3134 and ARCH 3433 and ARCH 4116 and ARCH 4123.  
**Description:** Problems in Architectural Design. May not be used for degree credit with ARCH 5226.  
**Credit hours:** 6  
**Contact hours:** Lab: 16 Contact: 16  
**Levels:** Undergraduate  
**Schedule types:** Lab  
**Department/School:** Architecture  
**Additional Fees:** Architecture Field Trip fee of $16 applies.

ARCH 4224 Structures: Concrete II  
**Prerequisites:** Grades of "C" or better in ARCH 3262, ARCH 4123, and concurrent enrollment in ARCH 4143.  
**Description:** Design and analysis of multi-story reinforced concrete frames used in architecture applications. Previously offered as ARCH 4225.  
**Credit hours:** 4  
**Contact hours:** Lecture: 3 Lab: 2 Contact: 5  
**Levels:** 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 or ARCH 3163.  
**Description:** Sustainability topics and their application to architecture.  
**Credit hours:** 3  
**Contact hours:** Lecture: 3 Contact: 3  
**Levels:** Undergraduate  
**Schedule types:** Lecture  
**Department/School:** Architecture

ARCH 4263 Architecture Seminar  
**Prerequisites:** Co-requisite enrollment in ARCH 4216 or ARCH 5226, or permission of instructor.  
**Description:** Topics in architecture and architectural engineering. May not be used for degree credit with ARCH 5263.  
**Credit hours:** 3  
**Contact hours:** Lecture: 3 Contact: 3  
**Levels:** Undergraduate  
**Schedule types:** Lecture  
**Department/School:** Architecture

ARCH 4273 History and Theory of Islamic Architecture  
**Prerequisites:** ARCH 2003, Grade of "C" or better. Or ARCH 2183, Grade of "C" or better.  
**Description:** Architecture of the Islamic World.  
**Credit hours:** 3  
**Contact hours:** Lecture: 3 Contact: 3  
**Levels:** 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 Contact: 3  
**Levels:** Undergraduate  
**Schedule types:** Lecture  
**Department/School:** Architecture  
**General Education and other Course Attributes:** Humanities

ARCH 4343 Structures: Concrete II  
**Prerequisites:** Grade of "C" or better in ARCH 3262 and ARCH 4123.  
**Description:** Analysis, design, detailing and documentation of multi-story reinforced concrete structures, and other structural components used in architecture applications. Previously offered as ARCH 4224.  
**Credit hours:** 3  
**Contact hours:** Lecture: 2 Lab: 2 Contact: 4  
**Levels:** Undergraduate  
**Schedule types:** Lecture  
**Department/School:** Architecture

ARCH 4353 Computational Foundations  
**Description:** The use of advanced 3D digital design tools for architectural applications.  
**Credit hours:** 3  
**Contact hours:** Lecture: 3 Contact: 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 Contact: 3  
**Levels:** 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 Contact: 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, Grade of "C" or better. Or ARCH 2283, Grade of "C" or better.  
**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 Contact: 3  
**Levels:** Undergraduate  
**Schedule types:** Lecture  
**Department/School:** Architecture
ARCH 4433 Architectural Science II: Acoustics, Lighting, and Service Systems for Architectural Engineers  
Prerequisites: ENSC 2613, Grade of "C" or better.  
Description: Engineering fundamentals of architectural acoustics, lighting, electrical, and signal, conveying, and plumbing systems for buildings. May not be used for degree credit with ARCH 3433.  
Credit hours: 3  
Contact hours: Lecture: 2 Lab: 2 Contact: 4  
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 Contact: 5  
Levels: Undergraduate  
Schedule types: Lab, Lecture, Combined lecture and lab  
Department/School: Architecture  

ARCH 4991 Professional Development for Architects and Architectural Engineers  
Prerequisites: Admission to Professional School, or permission of instructor.  
Description: Professional values, culture, mentorship, and leadership development companion course to a professional experience.  
Credit hours: 1  
Contact hours: Lab: 2 Contact: 2  
Levels: Undergraduate  
Schedule types: Lab  
Department/School: Architecture  

ARCH 5003 Integrative Design  
Prerequisites: Admission to the Graduate College and the Architecture Graduate Certificate Program.  
Description: Advanced Topics in Integrative Design.  
Credit hours: 3  
Contact hours: Contact: 3 Other: 3  
Levels: Graduate  
Schedule types: Independent Study  
Department/School: Architecture  

ARCH 5016 Architectural Design Studio VIII  
Prerequisites: Grade of "C" or better in ARCH 4216 or permission of school head or advisor.  
Description: Problems in architectural design. May not be used with degree credit in ARCH 5117.  
Credit hours: 6  
Contact hours: Lab: 12 Contact: 12  
Levels: Graduate, Undergraduate  
Schedule types: Lab  
Department/School: Architecture  

ARCH 5023 Masonry Design and Analysis  
Prerequisites: Grade of "C" or better or concurrent enrollment in ARCH 4123, or by permission of instructor.  
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 Contact: 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 Contact: 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: 1-6  
Contact hours: Contact: 1-6 Other: 1-6  
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. No credit for students with credit in ARCH 5116.  
Credit hours: 7  
Contact hours: Lab: 16 Contact: 16  
Levels: Graduate, Undergraduate  
Schedule types: Lab  
Department/School: Architecture  

ARCH 5133 Advanced Energy Issues in Architecture  
Credit hours: 3  
Contact hours: Lecture: 3 Contact: 3  
Levels: Graduate, Undergraduate  
Schedule types: Lecture  
Department/School: Architecture
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<th>Course Code</th>
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<td>ARCH 5143</td>
<td>Structures: Special Loadings</td>
<td>Grad of &quot;C&quot; or better in ARCH 4444.</td>
<td>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.</td>
<td>Lecture: 3 Contact: 3</td>
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<td>ARCH 5193</td>
<td>Management of Architectural Practice</td>
<td>Fifth-year standing in architectural or architectural engineering or consent of instructor.</td>
<td>Principles of management as applied to the private practice of architecture and architectural engineering.</td>
<td>Lecture: 3</td>
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<tr>
<td>ARCH 5217</td>
<td>Architectural Design Studio IX</td>
<td>Grad of &quot;C&quot; or better in 5117 or consent of instructor.</td>
<td>Problems in architectural design. Previously offered as ARCH 5216.</td>
<td>Lecture: 7</td>
<td>7</td>
<td>Graduate, Undergraduate</td>
<td>Lab: 16 Contact: 16</td>
<td>Architecture</td>
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<tr>
<td>ARCH 5226</td>
<td>Architectural Engineering Comprehensive Design Studio</td>
<td>Grad of &quot;C&quot; or better in ARCH 3224, ARCH 4134, ARCH 4224, and ARCH 4433.</td>
<td>Problems in architectural and architectural engineering design. May not be used for degree credit with ARCH 4216.</td>
<td>Lecture: 6</td>
<td>6</td>
<td>Graduate, Undergraduate</td>
<td>Lab: 16 Contact: 16</td>
<td>Architecture</td>
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<tr>
<td>ARCH 5263</td>
<td>Advanced Architecture Technology Seminar</td>
<td>Concurrent enrollment in ARCH 4216 or ARCH 5226, or permission of instructor.</td>
<td>Advanced topics in technology related to the disciplines of architecture and architectural engineering. May not be used for degree credit with ARCH 4263.</td>
<td>Lecture: 3</td>
<td>3</td>
<td>Graduate</td>
<td>Lecture</td>
<td>Architecture</td>
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<tr>
<td>ARCH 5373</td>
<td>Field Study in Europe II</td>
<td>Senior standing in architecture or consent of instructor.</td>
<td>On-site analysis and study of European architecture, culture and urban design.</td>
<td>Lecture: 3 Contact: 3</td>
<td>3</td>
<td>Graduate, Undergraduate</td>
<td>Lecture</td>
<td>Architecture</td>
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<tr>
<td>ARCH 5493</td>
<td>Entrepreneurship and Architecture</td>
<td>Senior standing.</td>
<td>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.</td>
<td>Lecture: 3</td>
<td>3</td>
<td>Graduate, Undergraduate</td>
<td>Lecture</td>
<td>Architecture</td>
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<tr>
<td>ARCH 6000</td>
<td>Special Problems</td>
<td>Consent of instructor and head of school.</td>
<td>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.</td>
<td>Contact: 1-15 Other: 1-15</td>
<td>1-15</td>
<td>Graduate</td>
<td>Independent Study</td>
<td>Architecture</td>
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<tr>
<td>ARCH 6083</td>
<td>History and Theory of Contemporary Architecture</td>
<td>Graduate standing or consent of instructor.</td>
<td>American architecture beginning in the 16th century through the 20th century.</td>
<td>Lecture: 3</td>
<td>3</td>
<td>Graduate, Undergraduate</td>
<td>Lecture</td>
<td>Architecture</td>
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<tr>
<td>ARCH 6113</td>
<td>Creative Component Research</td>
<td>Admission to graduate program.</td>
<td>Data gathering, analysis and program formulation related to creative component.</td>
<td>Lecture: 3</td>
<td>3</td>
<td>Graduate</td>
<td>Lecture</td>
<td>Architecture</td>
</tr>
<tr>
<td>ARCH 6117</td>
<td>Graduate Design Studio</td>
<td>Admission to graduate program.</td>
<td>Problems in architectural design.</td>
<td>Lecture: 7</td>
<td>7</td>
<td>Graduate</td>
<td>Lab: 14 Contact: 14</td>
<td>Architecture</td>
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</tbody>
</table>
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 Contact: 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: Contact: 7 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 Contact: 4  
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, or by permission of instructor.  
Description: Advanced topics in structural steel design, and steel connection design and detailing.  
Credit hours: 3  
Contact hours: Lecture: 3 Contact: 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 Contact: 3  
Levels: Graduate, Undergraduate  
Schedule types: Lecture  
Department/School: Architecture