## 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:** Admission to CEAT and a grade of ‘C’ or better in ARCH 1112, or consent of instructor.
**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:** 3
**Contact hours:** Lecture: 3 Contact: 3
**Levels:** Undergraduate
**Schedule types:** Lecture
**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 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:** Lecture: 6 Contact: 6
**Levels:** Undergraduate
**Schedule types:** Lecture
**Department/School:** Architecture

### ARCH 2183 History and Theory of Architecture I
**Prerequisites:** ARCH 2003.
**Description:** History and theory of the Pre-Enlightenment era of architecture in the Western world.
**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.
**Description:** 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.
**Credit hours:** 6
**Contact hours:** Lecture: 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
**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
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 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
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 third year.
Description: Problems in architectural design.
Credit hours: 6
Contact hours: Lab: 12 Contact: 12
Levels: Undergraduate
Schedule types: Lab
Department/School: Architecture

ARCH 3134 Architectural Science I: Thermal Systems and Life Safety
Prerequisites: MATH 1513 or MATH 1813 or MATH 2144.
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.
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 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 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 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 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: 3 Lab: 0 Contact: 3
Levels: Undergraduate
Schedule types: 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 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 3262 Design Communication II: Advanced Digital Applications
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 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 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 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 3264 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 Contact: 3
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Architecture
ARCH 3353 Advanced Graphics and Theory of Representation
Prerequisites: Admission to CEAT.
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 3462 Urban Design I
Credit hours: 2
Contact hours: Lecture: 2 Contact: 2
Levels: Undergraduate
Schedule types: Lecture
Department/School: Architecture
ARCH 3473 History and Theory of Structures in Architecture
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
ARCH 4022 Undergrad Seminar II
Credit hours: 2
Contact hours: Lecture: 2 Contact: 2
Levels: Undergraduate
Schedule types: Lecture
Department/School: Architecture

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 3262 Design Communication II: Advanced Digital Applications
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 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 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 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 3264 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 Contact: 3
Levels: Undergraduate
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Architecture
ARCH 3353 Advanced Graphics and Theory of Representation
Prerequisites: Admission to CEAT.
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 3462 Urban Design I
Credit hours: 2
Contact hours: Lecture: 2 Contact: 2
Levels: Undergraduate
Schedule types: Lecture
Department/School: Architecture
ARCH 3473 History and Theory of Structures in Architecture
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
ARCH 4022 Undergrad Seminar II
Credit hours: 2
Contact hours: Lecture: 2 Contact: 2
Levels: Undergraduate
Schedule types: Lecture
Department/School: Architecture
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 3223.
Description: Analysis and design applications in architectural problems using concrete structures.
Credit hours: 3
Contact hours: Lecture: 3 Lab: 0 Contact: 3
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 4134 Architectural Science I: Thermal Systems and Life Safety for Architectural Engineers
Prerequisites: ENSC 2213 or concurrent enrollment.
Description: Engineering 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.
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 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 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 4203 Experimental Design Lab
Credit hours: 3
Contact hours: Lab: 6 Contact: 6
Levels: Undergraduate
Schedule types: 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
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Description</th>
<th>Credit hours</th>
<th>Contact hours</th>
<th>Levels</th>
<th>Schedule types</th>
<th>Department/School</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 4224</td>
<td>Structures: Concrete II</td>
<td>Grades of 'C' or better in ARCH 3442, ARCH 4123, and ARCH 4143.</td>
<td>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.</td>
<td>4</td>
<td>3 Lab: 2</td>
<td>Undergraduate</td>
<td>Lab, Lecture, Combined lecture and lab</td>
<td>Architecture</td>
</tr>
<tr>
<td>ARCH 4233</td>
<td>Sustainable Design in Architecture</td>
<td>Grade of 'C' or better in ARCH 3134.</td>
<td>Sustainability topics and their application to architecture.</td>
<td>3</td>
<td>3 Contact: 3</td>
<td>Undergraduate</td>
<td>Lecture</td>
<td>Architecture</td>
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<tr>
<td>ARCH 4263</td>
<td>Architecture Seminar</td>
<td>Co-requisite enrollment in ARCH 4216 or ARCH 5226, or permission of instructor.</td>
<td>Topics in architecture and architectural engineering. May not be used for degree credit with ARCH 5263.</td>
<td>3</td>
<td>3 Contact: 3</td>
<td>Undergraduate</td>
<td>Lecture</td>
<td>Architecture</td>
</tr>
<tr>
<td>ARCH 4273</td>
<td>History and Theory of Islamic Architecture</td>
<td>ARCH 2003, Grade of 'C' or better. Or ARCH 2183, Grade of 'C' or better.</td>
<td>Architecture of the Islamic World.</td>
<td>3</td>
<td>3 Contact: 3</td>
<td>Undergraduate</td>
<td>Lecture</td>
<td>Architecture</td>
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<tr>
<td>ARCH 4293</td>
<td>The Ethics of the Built Environment (H)</td>
<td>Admission to the professional program or consent of instructor.</td>
<td>Analysis of basic values that determine the form of the built environment.</td>
<td>3</td>
<td>3 Contact: 3</td>
<td>Undergraduate</td>
<td>Lecture</td>
<td>Architecture</td>
</tr>
<tr>
<td>ARCH 4353</td>
<td>Computational Foundations</td>
<td></td>
<td>The use of advanced 3D digital design tools for architectural applications.</td>
<td>3</td>
<td>3 Contact: 3</td>
<td>Undergraduate</td>
<td>Lecture</td>
<td>Architecture</td>
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<tr>
<td>ARCH 4373</td>
<td>Field Study in Europe I</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>3</td>
<td>3 Contact: 3</td>
<td>Undergraduate</td>
<td>Lecture</td>
<td>Architecture</td>
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<tr>
<td>ARCH 4374</td>
<td>International Field Study (HI)</td>
<td>Admission to Professional Program in Architecture or Architectural Engineering or approval of instructor and head of school.</td>
<td>On-site analysis and study of international architecture, culture and urban design.</td>
<td>3</td>
<td>3 Contact: 3</td>
<td>Undergraduate</td>
<td>Lecture</td>
<td>Architecture</td>
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<tr>
<td>ARCH 4383</td>
<td>History and Theory of Modern Architecture in Italy</td>
<td>ARCH 2003, Grade of 'C' or better. Or ARCH 2283, Grade of 'C' or better.</td>
<td>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.</td>
<td>3</td>
<td>3 Contact: 3</td>
<td>Undergraduate</td>
<td>Lecture</td>
<td>Architecture</td>
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<tr>
<td>ARCH 4433</td>
<td>Architectural Science II: Acoustics, Lighting, and Service Systems for Architectural Engineers</td>
<td>ENSC 2613, Grade of 'C' or better.</td>
<td>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.</td>
<td>3</td>
<td>2 Lab: 2</td>
<td>Undergraduate</td>
<td>Lab, Lecture, Combined lecture and lab</td>
<td>Architecture</td>
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<tr>
<td>ARCH 4444</td>
<td>Structures: Analysis II</td>
<td>Grade of 'C' or better in ARCH 3143 and ENGR 1412.</td>
<td>Mathematical formulation of architectural structural behavior. Matrix applications, finite element, finite differences, stability considerations, and three dimensional structural modeling.</td>
<td>4</td>
<td>3 Contact: 5</td>
<td>Undergraduate</td>
<td>Lab, Lecture, Combined lecture and lab</td>
<td>Architecture</td>
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</table>
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 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 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. 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 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

ARCH 5143 Structures: Special Loadings
Prerequisites: Grade of 'C' or better in ARCH 4444.
Credit hours: 3
Contact hours: Lecture: 2 Lab: 2 Contact: 4
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 Contact: 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 Contact: 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: Lab: 16 Contact: 16
Levels: Graduate, Undergraduate
Schedule types: Lab
Department/School: Architecture
ARCH 5263 Advanced Architecture Technology Seminar
Prerequisites: Concurrent enrollment in ARCH 4216 or ARCH 5226, or permission of instructor.
Description: Advanced topics in technology related to the disciplines of architecture and architectural engineering. May not be used for degree credit with ARCH 4263.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 3
Levels: Graduate
Schedule types: Lecture
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 Contact: 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 Contact: 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: Contact: 1-15 Other: 1-15
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 Contact: 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 Contact: 3
Levels: Graduate
Schedule types: Lecture
Department/School: Architecture

ARCH 6203 Creative Component in Architectural Engineering
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: 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 supporting 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.
Description: Plastic analysis and design of structural steel frames utilizing load and resistance factor design.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 3
Levels: Graduate, Undergraduate
Schedule types: Lecture
Department/School: Architecture
ARCH 6500 Arch Engineering Probl
Credit hours: 1-24
Contact hours: Contact: 1-24 Other: 1-24
Levels: Graduate
Schedule types: Independent Study
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