

ARCHITECTURE AND ENVIRONMENTAL DESIGN

The Architecture and Environmental Design program offers a foundational knowledge for designing sustainable spaces and communities. This area of study allows students to explore a number of fields and build on more specialized knowledge that includes sustainability, housing, material explorations and construction methods, urban planning and issues of environmental justice, and emerging trends in digital design and fabrication. A learning-by-doing approach is stressed in preparation for design-related careers or for transfer to a four-year university for further study in architecture, urban planning, landscape architecture, or civil engineering.

The **Associate of Science Degree** prepares students for a career in design-related disciplines and for transfer to professional degree programs at four-year institutions.

The **Certificate of Achievement** prepares students for entry-level positions in a wide range of design professions, and also serves as a foundation for specializing in a design-related focus.

Many of our students transfer onto a variety of top-tier universities offering accredited architecture programs such as USC and Cal Poly Pomona.

Contact Information

Division: Science (PS - 148)

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- 3D Modeling and Design Certificate of Achievement
 - Architecture and Environmental Design Associate of Science Degree
 - Building Information and 3D Modeling Certificate of Achievement
 - Building Information Management (BIM) Certificate of Achievement

ARCH 102 3 Units

Digital Design Media Level I

Lecture: 18 contact hours

Lab: 108 contact hours

This course introduces students to the fundamentals of representing architectural design. The class focuses on architectural drawing conventions, and uses standard architectural software to draft, document, and represent a three-dimensional design through two-dimensional drawings. Attention is drawn to the relationship between technical and presentation drawings, and the course explores and analyzes architectural presentation principles and techniques.

Associate Degree Applicable

Transfers to both UC/CSU

ARCH 103 3 Units

Architectural Rendering and Visual Communication

Lecture: 18 contact hours

Lab: 108 contact hours

This course serves as an introduction to three-dimensional digital modeling using three-dimensional software, and focuses on how to visually communicate design intent through a series of architectural drawings and diagrams. Different types of renderings and three-dimensional views are introduced, and resulting projects are presented using layout software.

Associate Degree Applicable

Transfers to both UC/CSU

ARCH 104 3 Units

The Built Environment: Culture, Profession, and Urbanization

Lecture: 18 contact hours

Lab: 108 contact hours

This course surveys the built environment throughout history and across different cultures and geographies worldwide. Emphasis is on the role of architecture, and allied disciplines such as urban design and planning, in enabling colonial expansion and domination of non-western cultures.

This historical survey ends with an assessment and understanding of contemporary architectural practice, along with licensing pathways and academic and professional trajectories.

Associate Degree Applicable

Transfers to both UC/CSU

ARCH 105 3 Units

Design Theories, Methods, and Visualizations

Lecture: 36 contact hours

Lab: 54 contact hours

This course introduces students to the process of architectural design, exploring the built environment through different media and activities that address distinct design approaches. It includes studies of various representation techniques, media, and processes to express different design philosophies, and an introduction to the tools, techniques, and methods relevant to the design process. The course introduces students to the various scales of architectural intervention, from the dimensions of the human body all the way to the territory of the city.

Associate Degree Applicable

Transfers to both UC/CSU

ARCH 106 3 Units

Sustainability in the Built Environment

Lecture: 54 contact hours

Advisory: ENGL 101 or ENGL 101H

This course provides an overview of key areas of sustainability theory and practice, with a focus on how they are expressed in the built environment. Since sustainability is a cross-disciplinary field of study, the course draws from an intellectual breadth of natural and social disciplines spanning the humanities and sciences. In this course we will study how sustainability principles have guided the built environment throughout history, and how sustainability strategies have been taken up by cultures from distinct eras, geographies, and climatic regions in different ways. We will also study how sustainability is measured, valued, and understood by non-Western societies, including Indigenous ones. Specific topics across this spectrum include energy, infrastructure, environmental economics and policy, ethics, and cultural history.

Associate Degree Applicable

Transfers to both UC/CSU

ARCH 112 4 Units**Design Studio I****Lecture:** 36 contact hours**Lab:** 108 contact hours**Prerequisite:** ARCH 105**Advisory:** ARCH 102

This introductory architecture design studio course focuses on design process, including the perceptual and physical study of space from conceptualization and form-making to visualization and presentation. Emphasis on design process includes site analysis of environmental, contextual, and cultural aspects of space, design, and the urban environment. Design investigations will focus on a small residential building for a single client that challenges students to consider the environmental and social impact of their design.

Associate Degree Applicable**Transfers to both UC/CSU****ARCH 113 4 Units****Design Studio II****Lecture:** 36 contact hours**Lab:** 108 contact hours**Prerequisite:** ARCH 112**Advisory:** ENGL 101 or ENGL 101H and ARCH 103

This is a second-level architectural design studio with a focus on site analysis, design conceptualization and form-making, program development, and deep considerations of environmental and cultural contexts. Emphasis is on critical thinking and problem-solving through design, integrating an understanding and articulation of the role of architecture in addressing environmental, social, and climatic inequalities. Design investigations will focus on a public/cultural institution and will utilize digital software to focus on overall design strategies, structural systems, materials, space, light, and a corresponding set of project representations and physical models.

Associate Degree Applicable**Transfers to both UC/CSU****ARCH 145 3 Units****History of Architecture: Early Design Through Gothic****Lecture:** 54 contact hours**Advisory:** ENGL 101 or ENGL 101H

This course is a survey of Western architectural history from the early Egyptians through the Gothic period, in addition to the eastern architecture of India, Japan and China. The course includes a comparative study of architecture and architects with emphasis on the people, locations, structures, materials, and methods of construction and additional influences on the built environment.

Associate Degree Applicable**Transfers to both UC/CSU****ARCH 145H 3 Units****History of Architecture: Early Design Through Gothic - Honors****Lecture:** 54 contact hours**Prerequisite:** ENGL 101 or ENGL 101H

This course is a survey of Western architectural history from the early Egyptians through the Gothic period, in addition to the eastern architecture of India, Japan and China. The course includes a comparative study of architecture and architects with emphasis on the people, locations, structures, materials, and methods of construction and additional influences on the built environment. This course is intended for students in the Honors Program, but is open to all students who desire more challenging course work.

Associate Degree Applicable**Transfers to both UC/CSU****ARCH 146 3 Units****History of Architecture: Renaissance Through Modern****Lecture:** 54 contact hours**Advisory:** ENGL 101 or ENGL 101H

This is a survey course that covers the indigenous architecture in the Pre-Columbian Americas and the Western architectural history Renaissance period to modern times. This course includes a comparative study of architecture and architects with an emphasis on people, locations, structures, materials, and methods of construction.

Associate Degree Applicable**Transfers to both UC/CSU****ARCH 146H 3 Units****Architecture History: Renaissance to Modern - Honors****Lecture:** 54 contact hours**Prerequisite:** ENGL 101 or ENGL 101H

This is a survey course that covers the indigenous architecture in the Pre-Columbian Americas and the Western architectural history Renaissance period to modern times. This course includes a comparative study of architecture and architects with an emphasis on people, locations, structures, materials, and methods of construction. This course is intended for students in the Honors Program, but is open to all students who desire more challenging course work.

Associate Degree Applicable**Transfers to both UC/CSU****ARCH 202 3 Units****Digital Design Media Level II****Lecture:** 18 contact hours**Lab:** 108 contact hours**Prerequisite:** ARCH 103

Building Information Modeling (BIM) is examined relative to Integrated Project Delivery methods as pertains to collaboration and communication in the design and construction of buildings and building systems. Building construction methods and materials are examined through case studies to explore the means and techniques applied to the material execution of buildings and BIM. Focus on an understanding of the organization of the design and construction process and awareness of building and zoning codes, material systems and types.

Associate Degree Applicable**Transfers to CSU only****ARCH 203 3 Units****Advanced Digital Media and Algorithmic Design****Lecture:** 18 contact hours**Lab:** 108 contact hours**Prerequisite:** ARCH 103

Tools that are available to model design parametrically will be introduced in this class to illustrate the construction of geometrical relationships among complex shapes. Focus is on hands-on techniques that can be applied to the design process, to extend the efficiency and productivity of design work. Using design mathematics and computational definitions, students will develop digital models that they will translated into physical models.

Associate Degree Applicable**Transfers to both UC/CSU**

ARCH 212 4 Units**Design Studio III****Lecture:** 36 contact hours**Lab:** 108 contact hours**Prerequisite/Corequisite:** ARCH 202**Prerequisite:** ARCH 113

This upper-level architectural design studio focuses on the principles and applications of environmental design in relationship to architecture, landscape architecture, and urban design and planning. The course emphasizes how sustainability and environmental considerations can be an integral part of the design process, and teaches the applicability and relevance of those considerations for questions of climate justice and equity. Design investigations will focus on a series of a multi-unit housing complex or mixed-use building on an urban site in the San Bernardino or Los Angeles region.

Associate Degree Applicable**Transfers to both UC/CSU****ARCH 213 4 Units****Design Studio IV****Lecture:** 36 contact hours**Lab:** 108 contact hours**Prerequisite/Corequisite:** ARCH 203**Prerequisite:** ARCH 212

This upper-level architectural design studio integrates regulatory, site, and social considerations into a sustainable design response that addresses/mitigates climate risks. The focus is on sustainability and energy-efficiency, with a reflection on the environmental and social impact of an architectural design proposal on a given site and surrounding context. Emphasis is on multiple scales of design, from the detailed wall section and building envelope to the structural, energy, and spatial organizational system guiding the design process. Investigations will stress logical organization, craftsmanship, technical skills, vocabulary, and physical object-making through the design of complex building types. Design investigations will focus on a public building complex in a given neighborhood in the Southern California region that is facing social, environmental, and climate risks.

Associate Degree Applicable**Transfers to CSU only**