

# SLO Presentation

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ARCH

Date: 09/11/2019

## TECHNOLOGY

### ARCH

#### Architectural Technology--AA

- Students describe the role and purpose of building codes and other legal requirements that protect the public's health, safety and welfare.
- Students design, develop, virtually construct and administrate multi-disciplinary projects using BIM (Building Information Modeling) technology.
- Students demonstrate the ability to produce competent construction documents for building projects utilizing manual and digital drafting techniques.
- Students explain the fundamentals of sustainable environmental design practices.
- Students explain the requirements to transfer to a university professional program in Architecture or related Environmental Design field.
- Students identify the historical and contemporary role of architects in the development of the built environment.
- Students utilize the creative design process to graphically/verbally communicate design ideas and concepts.

#### Architectural Technology--Cert

- Students demonstrate the ability to produce competent construction documents for building projects utilizing manual and digital drafting techniques.
- Students design, develop, virtually construct and administrate multi-disciplinary projects using BIM (Building Information Modeling) technology.
- Students identify notable architects, design concepts and significant buildings in architecture.
- Students identify the historical and contemporary role of architects in the development of the built environment.
- Students utilize the creative design process to graphically/verbally communicate design ideas and concepts.
- Students describe the role and purpose of building codes and other legal requirements that protect the public's health, safety and welfare.
- Students explain the requirements to transfer to a university professional program in Architecture or related Environmental Design field.

#### Architecture--Transfer

- Students identify notable architects, design concepts and significant buildings in architecture.
- Students explain the requirements to transfer to a university professional program in Architecture or related Environmental Design field.
- Students identify the historical and contemporary role of architects in the development of the built environment.
- Students utilize the creative design process to graphically/verbally communicate design ideas and concepts.

## CSLO

### ARCH110 - Introduction to Architecture and Environmental Design

- Students explain that an Architect must be able to visualize a project and explain it to a client.
- Students identify the primary reasons people choose or not choose architecture as a profession.
- Students identify the minimum requirements when applying to a professional school of architecture.
- Students identify the three steps required to become a licensed Architect.
- Students identify the consultants that work with an architect on a typical project.

### ARCH111 - Architectural Drafting and Design I

- Students determine the proper length of a drawn line using various scales found on an Architect's and Engineer's scale.
- Students identify various line types typically found on architectural drawings – and their proper usage.
- Students identify the proper location, size, and style of lettering in compliance with standard architectural lettering techniques.
- Students identify proper aligned dimensioning techniques, dimensioning line placement and spacing, and proper dimension numeral placement.
- Students identify the proper usage of architectural symbols typically used in floor plans.

### ARCH112 - History Of Architecture

- Students will identify Greek Classical architecture including the Parthenon, and the measures used to make the resource appear perfect to the eye.
- Students will identify Italian Renaissance architecture, and understand how it references Greek Classical and Ancient Roman architecture.
- Students will identify the design intentions of Modern architecture, and the meaning of "form follows function".
- Students will recognize Egyptian architecture as permanent and unchanging; know the Pyramids of Giza, and their various functions.
- Students will recognize Los Angeles architecture including the missions, architecture that integrates indoors and outdoors, and architecture catered to the automobile.

### ARCH113 - Building Codes

- Identify a building's International Building Code (IBC) occupancy classification based on its intended use.
- Given a building occupancy and type of construction, identify the basic allowable area, maximum building height in feet, and maximum number of building stories.
- Identify minimum widths for basic components of the means of egress system.
- Determine occupant loads for basic components of the means of egress system.
- Determine maximum travel distances for basic components of the means of egress system.

### ARCH114 - Green Architecture and LEED

- Students understand 'integrated Design' and how this approach differs from the typical, linear design approach.
- Students identify the potential materials or systems that can impact Indoor Environment Quality (IEQ).
- Students understand the concept of 'Greenhouse Effect' and how solar energy and the atmosphere effect climate change.
- Students understand the specific goals of 'Low Impact Design' (LID) and how it deals differently with storm water runoff.
- Students identify GREEN-washing and understand that materials and systems are never 'LEED-Certified,' only buildings are.

### ARCH121 - Architectural Drafting and Design II

- Students will prepare interior elevations detailing millwork for bathroom and kitchen cabinets given sketches and specifications.
- Students will prepare wall-roof-ceiling details given a rough sketch and detailed material and construction notes.
- Students will identify the basic components of a residential wall section including footing and roof connections.
- Students will determine minimum residential stair dimensions and draw the stair cross section given a floor-to-floor height.
- Students will identify the basic components of a fireplace section.

### ARCH122 - Architectural Delineation

- Students apply the basic principles of freehand descriptive sketching to create a realistic sketch of an object.
- Students generate the two-dimensional views of a building given a three-dimensional paraline view.
- Students generate a three-dimensional paraline view of a building given the two-dimensional orthographic views.
- Students construct a two-point perspective of a building given two-dimensional orthographic views.
- Students create aerial and elevation views of a multi-component shape delineating shades and shadows.

### ARCH123 - Introduction to 2D Computer Aided Drafting

- Students create a window schedule using table styles and manual data input.
- Students configure AutoCAD for architectural drafting and sketch a basic floor plan using available coordinate entry methods.
- Students create and locate basic architectural floor plan symbols using available object snap modes and editing commands.
- Students create a dimension style in compliance with industry standards and properly dimension a basic floor plan.
- Students create building elevations and delineate exterior finish materials and shades using the proper hatching patterns, sizing, and scale.

### ARCH212 - Architectural Design Theory I

- Create static and motion design projects based on the interaction between the foreground and background colors.
- Design an abstract composition delineating axial, radial and occult balance.
- Delineate smooth-to-rough gradation using line work, photographs and material samples.
- Determine the proper shades and shadows for a complex composition.

- Explain the functional organization, structural system, circulation patterns and building materials of a famous building.

### **ARCH213 - Introduction to 3-D Computer Aided Drafting**

- Students create a complex wireframe surface model using 3D primitives with faceted surfaces and polygon meshes.
- Students create the 3D modeling environment with multiple views and dynamically view-edit a 3D model.
- Students create a complex solid model using 3D solid primitives, region modeling techniques and Boolean operations.
- Students extract orthographic and sectional drawing views from a solid model.
- Students render a solid model after attaching materials, adding light sources, various effects, and choosing a viewpoint.

### **ARCH221 - AutoCAD Architecture**

- Students create a 3D building mass model using primitives, profile creation and extrusion.
- Students create a variety of 3D wall styles and generate a 3D floor plan using these styles given a basic layout plan.
- Students create a variety of 3D door and window styles and place them in a given 3D floor plan.
- Students extract a building section and elevation from a 3D building model and create one sheet for plotting both views.
- Students create and place door tags in a floor plan, then extract a door schedule from these tags.

### **ARCH222 - Architectural Design Theory II**

- Students to compare and contrast the most important works of modern architecture(i.e. post 1890) and select three personal favorites.
- Students research the building construction and design philosophy of an important work of modern architecture and explain why the building was selected as important.
- Students organize a team and determine each team member's responsibilities to further research a building's construction in order to prepare detailed design drawings and a building model.
- Students complete collaborate design projects as evaluated by student peers.
- Students complete building models and start a student design portfolio in preparation for university transfer.

### **ARCH223 - Revit Architecture**

- Students identify the basic principles of Building Information Modeling (BIM).
- Students create a three-dimensional massing model. Apply walls, doors, & windows to this model.
- Students create building sections and elevations from a building model.
- Students create an Architectural Working Drawing applying building model views and a standard title block.
- Students create a dimension style in compliance with industry standards and properly dimension a basic floor plan.