

**NORCO COLLEGE
SLO to PLO MATRIX**

Architecture

State Approved Degree Program 18+ Units

This program prepares individuals to apply technical knowledge to skills to develop working drawings and electronic simulations for architectural and related construction projects. This includes instruction in basic construction and structural design, architectural rendering, computer – aided drafting (CAD), layout and designs, architectural industrial print interpretation, building materials, and basic structural wire diagramming.

		PLOs	PLO 1:	PLO 2:	PLO 3:	PLO 4:
			An ability to apply and integrate computer technology in the design process exhibiting skills necessary for entry-level employment in the architecture profession	Knowledge of architecture theory, and practice in the solution of Architectural design problems related to industry;	An ability to work effectively in small and large group situations similar to those found in industry	The ability to apply the problem solving process to create and present design solutions;
PROGRAM: ARCHITECTURE						
COURSE: ARE – 24 Architectural Drafting						
SLO 1	Execute and complete a set of residential working drawings		X	X		X
SLO 2	Read a set of residential architectural plans.		X	X		
SLO 3	Identify all commonly used symbols on architectural plans		X	X		
SLO 4	Analyze various design considerations when developing a planning checklist		X	X		X
COURSE: ARE- 25 Advanced Architectural Drafting						
SLO 1	Demonstrate the entry level job skills necessary to enter the field of architectural drafting.		X	X	X	X
SLO 2	Demonstrate the techniques of advanced construction concepts as it serves the process of communication between the architect/designer and the builder/contractor.		X		X	
SLO 3	Analyze descriptions of building plans and sites, and provide written research of building codes and safety requirements.		X	X		X
SLO 4	Prepare complete working drawings for small masonry, steel and wood frame buildings.		X	X		X
SLO 5	Identify and execute critical details for construction documents.		X			X
COURSE: ARE- 26 Architectural Rendering						
SLO 1	To formulate drawings by applying a variety of fundamental drawing and sketching techniques and methods.		X	X		X
SLO 2	To produce graphic presentations drawings and applying the visual cues that supports the perceptions of three dimensional space and form.		X	X		X
SLO 3	To compose architectural and environmental design presentations in a variety of media.		X	X		X
SLO 4	To demonstrate the use of graphic design principles and apply graphic principles to new situations.		X	X		X
SLO 5	To construct and present compositions explaining the elements and visual cues using the correct graphic terms and		X	X		X

<p style="text-align: center;">NORCO COLLEGE SLO to PLO MATRIX</p> <p style="text-align: center;">Architecture State Approved Degree Program 18+ Units</p> <p style="text-align: center;">This program prepares individuals to apply technical knowledge to skills to develop working drawings and electronic simulations for architectural and related construction projects. This includes instruction in basic construction and structural design, architectural rendering, computer – aided drafting (CAD), layout and designs, architectural industrial print interpretation, building materials, and basic structural wire diagramming.</p>		PLOs			
	vocabulary.				
SLO 6	To synthesize and solve graphic presentation needs in an individual and group setting.	X		X	

<p style="text-align: center;">NORCO COLLEGE SLO to PLO MATRIX</p> <p style="text-align: center;">Architecture - Continued State Approved Degree Program 18+ Units</p>		PLOs			
		<p>PLO 1: An ability to apply and integrate computer technology in the design process exhibiting skills necessary for entry-level employment in the architecture profession</p>	<p>PLO 2: Knowledge of architecture theory, and practice in the solution of Architectural design problems related to industry;</p>	<p>PLO 3: An ability to work effectively in small and large group situations similar to those found in industry</p>	<p>PLO 4: The ability to apply the problem solving process to create and present design solutions;</p>

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COURSE: ARE 35 – History of Architecture – Beginnings through Gothic (or ARE 36)						
SLO 1	Understand and apply architectural terms appropriately and correctly when asked to communicate about architectural monuments	X	X			X
SLO 2	Recognize the principles of design and identify the aesthetic characteristics of style of a given monument.	X	X			
SLO 3	Distinguish the characteristics of multiple architectural images and categorize them by monument, period, style, designer and/or location;	X	X			
SLO 4	Analyze and describe the influences, conditions and impacts in the development of architectural styles and significant architectural works as applied to specific monuments.	X	X	X		X
COURSE: ARE 36- History of Architecture: Renaissance to Modern (or ARE 35)						
SLO 1	Understand and apply architectural terms appropriately and correctly when asked to communicate about architectural monuments	X	X			X
SLO 2	Recognize the principles of design and identify the aesthetic characteristics of style of a given monument.	X	X			
SLO 3	Distinguish the characteristics of multiple architectural images and categorize them by monument, period, style, designer and/or location;	X	X			
SLO 4	Analyze and describe the influences, conditions and impacts in the development of architectural styles and significant architectural works as applied to specific monuments.	X	X	X		X
COURSE: ARE 37 – Architectural Design I (or Basic Design ART 22)						
SLO 1	Present alternative design strategies to the ultimate solution of a problem	X	X			X
SLO 2	Discuss different procedures architects use in design development	X	X			X
SLO 3	Plan, carry out and reflect on a process for creating design solutions.	X	X			X
SLO 4	Generate a variety of solutions to defined two and three dimensional design problems.	X	X			X
SLO 5	Design abstract compositions and spaces that range from implied to explicit.	X	X			X
SLO 6	Understand a range of ways that basic design principles can be employed to create relationships between elements within a design or presentation.	X	X			X

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SLO 7	Analyze how basic design concepts have been used to create design solutions.	X	X		X
SLO 8	Understand the value of conscious applications of the basic design principles in the creation, development and communication of ideas.	X	X	X	X
SLO 9	Understand the difference between a design concept and a specific design.	X	X		X
SLO 10	Understand the concept of size in terms of measurement, scale and proportion	X	X		X
SLO 11	Understand and employ the basic design concepts to create relationships between elements within a design or presentation to enhance communication of an idea.	X	X		X
SLO 12	Have an awareness of architectural design concepts of approach, entry and arrival.	X	X		
SLO 13	Have an awareness of the architectural design concept of implied space versus explicit closed space.	X	X		
SLO 14	Construct and present designs with quality craftsmanship.	X	X		X
SLO 15	Design and execute two-dimensional presentations composed of drawings, images and text that support the intended communication.	X	X		X
SLO 16	Ability to speak and write effectively regarding the subject matter of basic design principles.	X	X	X	X
SLO 17	Demonstrate collaborative skills and demonstrate the ability to identify and assume diverse roles that maximize individual talents, and cooperate with other students when working as members of a team or group setting.	X		X	
SLO 1	ART – 22 Basic Design(or ARE 37)				
SLO 2	Identify and employ proper use of a variety of art materials.	X			
SLO 3	Identify, define, and properly use art and design terminology.	X			
SLO 4	Define and illustrate the elements of art.	X			
SLO 5	Demonstrate the principles of design as they relate to two dimensional art works.	X			
SLO 6	Demonstrate the successful solutions to specific problems regarding the use of color, balance, movement, spatial relationships, and other design concerns in a presentable portfolio.	X	X		X

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SLO 7	Review the basics of color theory (additive and subtractive)		X			
SLO 8	Participate in critical discussions and reviews. Assessing artworks, using appropriate terminology.		X		X	

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COURSE: ENG 21- Drafting					
SLO 1	Apply the basic principles of mechanical drawing to the solution of various drawing problems	X	X		X
SLO 2	Set up drawing parameters appropriate to various design problems	X	X		
SLO 3	Perform necessary geometric constructions to solve the shape description of typical drawing problems.	X	X		
SLO 4	Represent three-dimensional drawing problems through two-dimensional graphic communication	X	X		
SLO 5	Analyze and solve design problems using the principles of orthographic projection.	X	X		X
SLO 6	Demonstrate the technique of part dimensions (shape description).	X	X		
SLO 7	Two-dimensionally represent three dimensional industrial parts in isometric pictorials.	X	X		
SLO 8	Analyze industrial part drawings to determine if auxiliary views are necessary for graphic communication.	X	X		X
SLO 9	Prepare complete industrial part drawings required for the manufacturing process	X	X		
SLO 10	Recognize the symbols of Geometric Dimensioning and Tolerancing.	X	X		
COURSE: ENG – 30 Computer Aided Drafting (CAD)					
SLO 1	Demonstrate the technique of mechanical and architectural drawing using computer assistance	X			
SLO 2	Set up drawing parameters in order to create, store and retrieve drawings.	X	X		
SLO 3	Synthesize information and apply critical thinking skills to solve instructional problems typical of industry.	X			X
SLO 4	Apply the principles of two-dimensional CAD in the solution of various design problems	X	X		X
SLO 5	Demonstrate CAD skills and work habits that will lead to transfer and future employment	X			
COURSE: ENG – 60 Math for Engineering Technology					
SLO 1	Solve arithmetic problems dealing with addition, subtraction, multiplication and division that are typical to the industrial setting.	X			X
SLO 2	Solve formulas by using unknowns and apply this knowledge to solve problems encountered in technological areas and various fields of engineering.	X			X
SLO 3	Solve problems by use of a scientific calculator.	X			

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COURSE: ELECTIVE COURSE – Art 17						
SLO 1	Identify and employ proper use of a variety of drawing materials.		X			
SLO 2	Identify, define, and properly use art terminology.		X	X		
SLO 3	List, define and illustrate the elements of art.		X	X		
SLO 4	List, define and illustrate the principles of composition.		X	X		
SLO 5	Illustrate visually and verbally a basic understanding of linear and atmospheric perspective and related problem solving.		X			X
SLO 6	Demonstrate accurate visual perception working in an observational context.		X			
SLO 7	Articulate and demonstrate a variety of technical and creative skills in a variety of art materials.		X			
SLO 8	Participate in critical discussions and reviews, assessing artworks using appropriate terminology.		X		X	
COURSE: ELECTIVE COURSE – Art 23						
SLO 1	Identify and employ proper use of a variety of art materials.		X	X		
SLO 2	Identify, define, and properly use art and design terminology.		X	X		
SLO 3	List, define and review the elements of art.		X			
SLO 4	Demonstrate progressively refined solutions to specific problems regarding the use of color, balance, movement, spatial relationships, and other design concerns.		X	X		X
SLO 5	Review the basic and more complex ideas surrounding “color theory” (additive and subtractive) and successful application of them in portfolio designs.		X			
SLO 6	Demonstrate creative alternatives, explorations and solutions.		X	X	X	X
SLO 7	Present a portfolio of completed designs.		X			
SLO 8	Participate in critical discussions and reviews, assessing artworks using appropriate terminology.		X	X	X	
COURSE: ELECTIVE COURSE – Art 24						
SLO 1	Identify, define and properly use art materials and terminology.		X	X		
SLO 2	Execute projects with skill and craftsmanship and assess accordingly.		X	X		
SLO 3	List, define and illustrate the elements of art.		X	X		
SLO 4	Present successful solutions to specific problems regarding the use of color, balance, movement, spatial relationships, scale, proportions and other design concerns.		X	X		X
SLO 5	Define, describe and demonstrate various aspects of open and closed forms, positive and negative spaces,		X			

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SLO	Description					
	actual and illusionary possibilities, form and function.					
SLO 6	Participate in critical discussions and reviews and assess artworks using appropriate terminology,		X		X	
COURSE: ELECTIVE COURSE – CON-60						
SLO 1	Identify the essential steps that are associated with the preliminary planning and designing of a construction project.		X	X	X	
SLO 2	Explain the methods of construction and outline the overall construction process.		X	X		
SLO 3	Demonstrate a working knowledge of technical terminology.		X	X	X	
SLO 4	Ascertain the various career options available within this industry and identify the prerequisites for each.		X	X		
COURSE: ELECTIVE COURSE – CON-61						
SLO 1	Identify a variety of construction materials.		X	X		
SLO 2	Ascertain the properties and proper application of various construction materials.		X	X		
SLO 3	Determine whether a particular material will comply with the Building Code regulations for a particular usage.		X	X		X
COURSE: ELECTIVE COURSE – ENE- 26						
SLO 1	Students will demonstrate the techniques of topographic contour drafting as it serves the process of communication between the civil engineer and earthwork and roadway contractors.		X	X		
SLO 2	Set up drawing parameters appropriate to various design problems.		X	X		
SLO 3	Demonstrate/apply the principles and techniques of civil engineering drawing in the solution of various design problems typical of industry.		X	X		
SLO 4	Demonstrate civil drafting skills and work habits that will lead to transfer and future employment.		X	X		
COURSE: ELECTIVE COURSE – ENE-27 or ELE 27						
SLO 1	Define technical communications		X	X		
SLO 2	Recognize and identify characteristics of technical communications		X	X		
SLO 3	Identify the needs of a given audience		X	X	X	
SLO 4	Collect and organize information		X	X		
SLO 5	Create technical documents in accordance with conventional formats		X	X		

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SLO 6	Write descriptive and operational instructions for nontechnical users of technical information		X	X		
SLO 7	Properly integrate graphs, tables, and references into technical reports.		X	X		
SLO 8	Conduct and informal interview		X	X	X	
SLO 9	Assemble a personal data book; and		X			
SLO 10	Compose a personal resume with cover letter		X			
COURSE: ELECTIVE COURSE – ELE-27						
SLO 1	Define technical communications		X			
SLO 2	Recognize and identify characteristics of technical communications		X	X		
SLO 3	Identify the needs of a given audience		X	X	X	
SLO 4	Collect and organize information		X	X		
SLO 5	Create technical documents in accordance with conventional formats		X	X		
SLO 6	Write descriptive and operational instructions for nontechnical users of technical information		X	X		
SLO 7	Properly integrate graphs, tables, and references into technical reports.		X	X		
SLO 8	Conduct and informal interview		X	X	X	
SLO 9	Assemble a personal data book;		X			
SLO 10	and Compose a personal resume with cover letter		X			
COURSE: ELECTIVE COURSE – ENE-31						
SLO 1	Use all menus and operations of the CAD system needed to complete architectural and mechanical drawings that are typically found in industry.		X	X		
SLO 2	Create flexible and comprehensive templates that are used in industry specific disciplines.		X	X		
SLO 3	Analyze, draw and plot CAD drawing to an indicated scale using paper-space on different sheet sizes.		X	X		X
SLO 4	Create, store and retrieve library symbols that contain special attributes for use in multiple drawings.		X	X		
SLO 5	Use the CAD system's vector based graphics to solve complex design problems most commonly found in industry.		X	X		X