

**EL CAMINO COLLEGE  
COURSE OUTLINE OF RECORD - Approved**

<b>Subject:</b>	ARCH
<b>Course Number:</b>	149
<b>Descriptive Title:</b>	Studio 1 – Design Fundamentals and Principles
<b>Division:</b>	Industry and Technology
<b>Department:</b>	Architecture
<b>Course Disciplines:</b>	Architecture
<b>Catalog Description:</b>	In this beginning design course, students will learn how building expression is derived and can be understood through the analysis of primary shapes and geometry. The focus will be on the design process demonstrating the iterative means in developing architectural design solutions using models, drawings, and graphics to communicate the design solution.
<b>Prerequisite:</b>	ARCH 170 with a minimum grade of C or concurrent enrollment
<b>Course Length:</b>	Full Term
<b>Hours Lecture (per week):</b>	2
<b>Hours Laboratory (per week):</b>	4
<b>Outside Study Hours:</b>	4
<b>Total Course Hours:</b>	108
<b>Course Units:</b>	3
<b>Grading Method:</b>	Letter Grade only
<b>Credit Status:</b>	Credit, degree applicable
<b>Transfer CSU:</b>	Yes
<b>Effective Date:</b>	
<b>Transfer UC:</b>	Yes
<b>Effective Date:</b>	
<b>General Education ECC:</b>	
<b>Term:</b>	
<b>Other:</b>	
<b>CSU GE:</b>	
<b>Term:</b>	
<b>Other:</b>	
<b>IGETC:</b>	
<b>Term:</b>	
<b>Other:</b>	

<p><b>Student Learning Outcomes:</b></p>	<p><b>SLO #1 Abstractions and Analysis</b> Employ critical thinking skills through abstraction and analysis while interpreting the built environment from both the perspective of an artistic expression and a technical solution.</p> <p><b>SLO #2 Design Development</b> Demonstrate the iterative process to develop abstract ideas into a set of drawings that effectively conveys the design strategy.</p> <p><b>SLO #3 Project Communication</b> Communicate an architectural solution utilizing drawing conventions and visual vocabulary emphasizing the design’s meaning and performative framework.</p>
<p><b>Course Objectives:</b></p>	<ol style="list-style-type: none"> <li>1. Express the arrangement of shapes and evolution of form</li> <li>2. Understand design fundamentals as they relate to building and site geometry.</li> <li>3. Demonstrate knowledge of the relationship between the user and the space they occupy.</li> <li>4. Analyze various master architect's designs and formulate a philosophy based on their analysis.</li> <li>5. Critically think about proportions, scale and the relationship to the human form.</li> <li>6. Learn how to translate the role of context into the design development process.</li> <li>7. Collect and analyze data regarding environmental issues (sun, wind, topography, etc.) that influence the location and orientation of a building on a site.</li> <li>8. Compose presentation drawings that illustrate possible solutions to the problems presented.</li> </ol>
<p><b>Major Topics:</b></p>	<p><b>I. Overview of Design Fundamentals (4 hours, lecture)</b></p> <ol style="list-style-type: none"> <li>A. The Lens of an Architect</li> <li>B. The Tango of Science and Art</li> <li>C. Understanding Space</li> <li>D. Evolution of a Project</li> </ol> <p><b>II. Primary Elements (4 hours, lecture)</b></p> <ol style="list-style-type: none"> <li>A. Point/ Points</li> <li>B. Line</li> <li>C. Plane</li> <li>D. Volume</li> </ol> <p><b>III. Form and Their Arrangements (8 hours, lecture)</b></p> <ol style="list-style-type: none"> <li>A. Primary Shapes <ol style="list-style-type: none"> <li>1. Evolution of Form</li> <li>2. Operative Design/ Spatial Verbs</li> </ol> </li> <li>B. Arrangements <ol style="list-style-type: none"> <li>1. Central</li> <li>2. Linear</li> <li>3. Radial</li> <li>4. Clustered</li> <li>5. Grid</li> </ol> </li> </ol>

	<p><b>IV. Geometry of Design</b> ( 4 hours, lecture)</p> <ul style="list-style-type: none"> <li>A. History of Geometry in Design</li> <li>B. Geometry of Nature</li> <li>C. Architecture as Pattern</li> <li>D. Massing and Composition</li> </ul> <p><b>V. Form and Space</b> (8 hours, lecture)</p> <ul style="list-style-type: none"> <li>A. Defining Space <ul style="list-style-type: none"> <li>1. The Functions of Space</li> <li>2. Understanding User’s Needs</li> <li>3. Openings and Enclosure</li> </ul> </li> <li>B. Proportion and Scale <ul style="list-style-type: none"> <li>1. Measure of ‘Man’</li> <li>2. Understanding Spatial Needs (<i>quantitative</i>)</li> <li>3. Spatial and Volumetric Attributes (<i>qualitative</i>)</li> </ul> </li> </ul> <p><b>VI. The Role of Context</b> (2 hours, lecture)</p> <ul style="list-style-type: none"> <li>A. Community Pattern and Character</li> <li>B. Natural Systems and Ecological Factors</li> <li>C. Circulation and Approach</li> <li>D. Sensory Considerations</li> </ul> <p><b>VII. Understanding Conditions</b> (4 hours, lecture)</p> <ul style="list-style-type: none"> <li>A. Observing and Documenting</li> <li>B. Analysis and Evaluation</li> <li>C. Identifying Constraints and Opportunities</li> <li>D. Interpreting and Communicating via diagraming</li> </ul> <p><b>VIII. Looking to the Past</b> (2 hours, lecture)</p> <ul style="list-style-type: none"> <li>A. Understanding the Architectural Lineage</li> <li>B. Precedents and Context</li> <li>C. Inspiration</li> <li>D. Reference</li> </ul> <p><b>IX. The "Learning by Doing" Principle</b> (48 hours, lab)</p> <ul style="list-style-type: none"> <li>A. Individual-centered Focus Tasks <ul style="list-style-type: none"> <li>1. Personal project development and evaluation</li> <li>2. Instructor-to-student and peer-to-peer interactions</li> <li>3. Instructor desk critiques</li> <li>4. Exercise engagement based of lecture content</li> <li>5. Drawing/ sketching to explore idea</li> </ul> </li> </ul> <p><b>X. The "Learning by Doing" Principle</b> (24 hours, lab)</p> <ul style="list-style-type: none"> <li>A. Group Collaboration Activity <ul style="list-style-type: none"> <li>1. Small group pin-ups</li> <li>2. Developing/ testing of design principals</li> <li>3. Participation in group tasks and projects</li> </ul> </li> </ul>
<b>Total Lecture Hours:</b>	36

<b>Total Laboratory Hours:</b>	72
<b>Total Hours:</b>	108
<b>Primary Method of Evaluation:</b>	2) Problem solving demonstrations (computational or non-computational)
<b>Typical Assignment Using Primary Method of Evaluation:</b>	Observe/analyze/ design an interior or exterior space or building and submit images, diagrams, drawings and models to the instructor for review.
<b>Critical Thinking Assignment 1:</b>	1. Evaluate and graphically demonstrate, via a Compare-and-Contrast exercise, the scale and proportions of a user in relationship to a proposed space or enclosure. Using architectural graphic conventions, submit findings to the instructor.
<b>Critical Thinking Assignment 2:</b>	2. Upon analyzing the existing conditions, develop and design a public space or pavilion that responds to user's needs as well as ecological conditions. Submit design drawings and related content to the instructor.
<b>Other Evaluation Methods:</b>	Class Performance, Completion, Journal kept throughout course, Presentation
<b>If Other:</b>	
<b>Instructional Methods:</b>	Demonstration, Discussion, Field trips, Group Activities, Guest Speakers, Lab, Lecture, Multimedia presentations
<b>If other:</b>	Desk Critiques
<b>Work Outside of Class:</b>	Journal (done on a continuing basis throughout the semester), Problem solving activity, Skill practice
<b>If Other:</b>	
<b>Up-To-Date Representative Textbooks:</b>	Francis Ching, <u>Architecture: Form, Space, and Order</u> , 4 <sup>th</sup> Ed, John Wiley, 2015 (Discipline Standard)
<b>Alternative Textbooks:</b>	Anthony Di Mari and Nora Yoo, <u>Operative Design: A Catalog of Spatial Verbs</u> , 1 <sup>st</sup> ed, BIS Publishers, 2019 (Discipline Standard) Baires Raffaelli, <u>The Fast Guide to Architectural Form</u> , 1 <sup>st</sup> ed, BIS Publishers, 2018 (Discipline Standard)
<b>Required Supplementary Readings:</b>	
<b>Other Required Materials:</b>	Tools and supplies for architectural drawing, drafting and model-making
<b>Requisite</b>	Prerequisite
<b>Category</b>	sequential
<b>Requisite course:</b>	Architecture 170 or concurrent enrollment.
<b>Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).</b>	<b>Ability to freehand sketch an architectural drawing.</b> ARCH 170 - Develop and utilize all of your architectural skills to complete drawing projects using freehand sketches and drafting, CAD, mixed media and photo montage. ARCH 170 - Study of drawing composition and how it impacts project presentation.

	<p>ARCH 170 - Learn and develop freehand drawing techniques.  <b>Ability to create a concept diagram.</b>  ARCH 170 - Creation of concept diagrams; it's a unique graphic language and how it is used to convey the "big idea" of an architectural project will be discussed.</p>
<b>Requisite Skill:</b>	
<b>Requisite Skill and Matching skill(s): Bold the requisite skill(s), if applicable</b>	
<b>Requisite course:</b>	
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<b>Enrollment Limitations and Category:</b>	
<b>Enrollment Limitations Impact:</b>	
<b>Course Created by:</b>	Marc Yeber
<b>Date:</b>	10/19/2021
<b>Original Board Approval Date:</b>	01/18/2022