



El Camino College
COURSE OUTLINE OF RECORD – Official

Course Acronym:	ARCH
Course Number:	171
Descriptive Title:	Graphic Communications II: 3D Drawings
Division:	Industry and Technology
Department:	Architecture
Course Disciplines:	Architecture
Catalog Description:	This course teaches drawing with an emphasis on communicating design ideas supported by illustration techniques. Students will learn how to communicate graphically via diagramming and three-dimensional pictorial drawings that will include paraline projections, one-, two- and three-point perspective illustrations. Drawing techniques and conventions will be demonstrated to convey effective graphic communications. Special attention will be given to identifying and differentiating the rationale for deploying one type of drawing over another.
Prerequisite:	Architecture 170 with a minimum grade C
Co-requisite:	
Recommended Preparation:	
Enrollment Limitation:	
Hours Lecture (per week):	2
Hours Laboratory (per week):	4
Outside Study Hours:	4
Total Course Hours:	108
Course Units:	3
Grading Method:	Letter Grade only
Credit Status:	Credit, degree applicable
Transfer CSU:	Yes
Effective Date:	Prior to July 1992
Transfer UC:	propose
Effective Date:	
General Education:	ECC
Term:	
Other:	
CSU GE:	

Term:	
Other:	
IGETC:	
Term:	
Other:	
Student Learning Outcomes:	<p>SLO #1 Three Dimensional Drawings</p> <p>Given lecture information, handouts and in-class discussion, students will be able to demonstrate the ability to draw and delineate numerous three dimensional drawings such as Isometrics, Axonometrics, Obliques, One, Two and Three Point Perspectives.</p> <p>SLO #2 Graphic Techniques</p> <p>Successful students, completing the Architecture Program, following instructions, supervised classroom practice using CADD system; will use proper graphic techniques to complete instructions.</p> <p>SLO #3 Spatial Organization</p> <p>Successful students tracking for graduation transfer, and or employment in the architecture field, will create design drawings and design models to show spatial organization.</p>
Course Objectives:	<ol style="list-style-type: none"> 1. Translate two dimensional drawings (plan, section, elevation) into various three dimensional drawing types. 2. Construct the properties of a 30 degree isometric grid layout. 3. Construct perspective drawing layout, both one point and two point perspective. 4. Compare and contrast the difference between the common and measuring point methods. 5. Diagram shadows and reflections in perspective. 6. Set up aerial perspectives.
Major Topics:	<p>I. Architectural three-dimensional overview (2 hours, lecture)</p> <p>A. Equipment/medium used in three-dimensional drawings B. Student projects C. Application of computer software</p> <p>II. Multi-view projection (6 hours, lecture)</p> <p>A. Isometric projection (drawing) B. Oblique projection C. Axonometric drawings</p> <p>III. Multi-view projection (14 hours, lab)</p> <p>A. Drawing an isometric of a building B. Drawing an oblique of a kitchen cabinet C. Drawing an exploded axonometric</p> <p>IV. Multi-vanishing points (2 hours, lecture)</p>

- A. Establishing vanishing points off the horizon line
- B. Creating vanishing points for roof slopes

C. Using the grid to establish various vanishing points

V. Fundamental principles of perspective setup (4 hours, lecture)

- A. Use of picture plane
- B. Physical limits
- C. Distortion
- D. Variations based on:
 - 1. Station point
 - 2. Picture plane
 - 3. Horizon line
 - 4. Angle of vision

VI. Fundamental principles of perspective setup (14 hours, lab)

- A. Laying out the parameters of a perspective drawing
- B. Locating the vanishing points
- C. Locating the measuring points

VII. One point perspective (6 hours, lecture)

- A. Common method
- B. Perspective plan method
- C. Direct projection method
- D. Circles and angles
- E. Measuring point method

VII. One point perspective (16 hours, lab)

- A. Drawing an office in one point perspective
- B. Drawing the measuring point

IX. Two point perspective (6 hours, lecture)

- A. Common method
- B. Measuring point method
- C. Grid method

X. Two point perspective (16 hours, lab)

- A. Drawing an office
- B. Drawing and measuring perspective of a building

XI. Other perspectives (4 hours, lecture)

- A. Three-point perspective
- B. Short cut methodologies
- C. Sketching freehand

XII. Shades and shadows (2 hours, lecture)

	<p>A. Sun B. Artificial light C. Shape of shadows</p> <p>XIII. Reflections (2 hours, lecture)</p> <p>A. Water B. Mirror C. Glass</p> <p>XIV. History of perspective drawing (2 hours, lecture)</p> <p>A. Filippo Brunalesche B. Michaelangelo and Da Vinci C. Computers and perspective D. Final presentations</p> <p>XV. Multi-view perspective (12 hours, lab)</p> <p>A. Finding the vanishing points of a roof on a house B. Creating a three-point perspective of a city with a block rotated 45% with a separate vanishing point in the middle</p>
Total Lecture Hours:	36
Total Laboratory Hours:	72
Total Hours:	108
Primary Method of Evaluation:	3) Skills demonstration
Typical Assignment Using Primary Method of Evaluation:	Draw a one-point perspective drawing, using the measuring point method, of a 1/4" = 1' - 0" floor plan at 3/4" = 1' - 0" scale. Submit drawing to the instructor.
Critical Thinking Assignment 1:	Construct a two-point perspective drawing of a floor plan design completed in a previous architectural drafting class. Submit drawing to the instructor.
Critical Thinking Assignment 2:	Calculate shade angles on an elevation drawing. Submit drawing to the instructor.
Other Evaluation Methods:	<p>Class Performance Other (specify):</p> <ol style="list-style-type: none"> 1. Work in lab 2. Drawing exams
Instructional Methods:	<p>Demonstration Guest Speakers Laboratory Lecture Multimedia presentations</p>
If other:	

Work Outside of Class:	Problem-solving activity Study
If Other:	
Up-To-Date Representative Textbooks:	Frank D. K. Ching. <u>Design Drawing</u> . 3 rd Edition. John Wiley and Sons, 2019
Alternative Textbooks:	Mark Baskinger & William Bardel. <u>Drawing Ideas: A Hand-Drawn Approach for Better Design</u> . 1 st Edition. Watson-Guptill, 2013. (Discipline Standard)
Required Supplementary Readings:	
Other Required Materials:	DRAFTING TOOLS: Lead holder Leads (2H, H, F) Eraser Erasing shield 30/60 degree triangle 45 degree triangle Adjustable triangle Architectural scale Engineering scale Brush 1/4" fixture template Pens, markers Paper, vellum and drafting film Flash drive
Requisite:	prerequisite
Category:	sequential
Requisite course(s): List both prerequisites and corequisites in this box.	ARCH 170 with a minimum grade of C
Requisite and Matching skill(s): Bold the requisite skill. List the corresponding	Ability to demonstrate line quality and weights.

course objective under each skill(s).	<p>ARCH 170 - In different drawing types, construct lines, shades and shadows that describe how light sources affect a building.</p> <p>Ability to interpret orthogonal drawings in order to convert to three-dimensional depictions.</p> <p>ARCH 170 - Understand how to orthographically project the basic architectural drawing conventions (plan, section, and elevation) and apply their use in architectural presentation drawings.</p> <p>Ability to convey depth through texture, shade and shadow.</p> <p>ARCH 170 - Assemble various textures that would commonly appear on floor and wall plans. In drawing types, construct lines, shades and shadows that describe how light sources affect a building.</p>
Requisite Skill:	
Requisite Skill and Matching Skill(s): Bold the requisite skill(s). If applicable	
Requisite course:	
Requisite and Matching skill(s):Bold the requisite skill. List the corresponding course objective under each skill(s).	
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Enrollment Limitations and Category:	
Enrollment Limitations Impact:	
Course Created by:	Albert Palmer
Date:	11/06/2015
Original Board Approval Date:	02/01/1982
Last Reviewed and/or Revised by:	Michael Stallings
Date:	11/06/2015

Last Board Approval Date:	1/17/2023
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