Subject:	ARCH
Course Number:	253
Descriptive Title:	Drawing Construction Details
Division:	Industry and Technology
Department:	Architecture
Course Disciplines:	Architecture
Catalog Description:	The Drawing Construction Details course will teach students the process of developing descriptive drawings that illustrate how individual building parts and materials are connected. This aspect of construction documentation is a critical component to providing accuracy and precision when communicating a particular construction method. Detail Drawings highlight the sequence and fastening process that result in building assemblies. Through these drawings, students will demonstrate knowledge on how buildings are constructed with coordination and specificity.
Prerequisite:	Architecture 170 and Architecture 251 with a minimum grade of C.
Co-requisite:	
Recommended Preparation:	Architecture 171, Architecture 252
Enrollment Limitation:	
Hours Lecture (per week):	1
Hours Laboratory (per week):	3
Outside Study Hours:	2
Total Course Hours:	72
Course Units:	2
Grading Method:	Letter Grade only
Credit Status:	Credit, degree applicable
Transfer CSU:	Yes
Effective Date:	
Transfer UC:	No
Effective Date:	
General Education ECC:	
Term:	
Other:	
CSU GE:	
Term:	
Other:	
IGETC:	
Term:	
Other:	

Student Learning Outcomes:	**SLO #1 Building Technology** Given lecture information about materials, connectors and fasteners through class lecture, students will demonstrate their knowledge and ability to specify building assembly methods. **SLO #2 Graphic Techniques** Students will use typical construction drawing conventions, both by hand and digital, to complete exercises and assignments resulting in drawn construction details. **SLO #3 Communication Skills** Successful students tracking for graduation, transfer and employment in architecture will develop, refine and compose a set of drawings that can communicate the technical requirements in the field.
Course Objectives:	1. Use critical thinking to specify materials and determine the proper construction methods. 2. Determine layout, format, sequence and conventions of their drawing details. 3. Demonstrate the ability to simplify complex assembly that addresses multiple building trades. 4. Establish framework that relates detail drawings back to general arrangement drawings. 5. Utilize a visual hierarchy via line types, weights and call-outs to identify various materials and sizes.
Major Topics:	I. **Overview – the Devil is in the Details (2 hours, lecture)** A. Defining what a detail drawing is and its role in a document set B. Communicating using 2D and 3D detail drawings C. The role of detail drawings in the construction documentation process II. **Mechanics of Detail Drawing (3 hours, lecture)** A. Scale, order, labeling and drawing size B. Understanding esthetic vs. technical concerns C. Establishing drawing conventions to be used throughout a set of drawings III. **Defining Structural Hierarchy (3 hours, lecture)** A. Primary and secondary structural components B. Determining the detail drawing objective C. The role line weights and types IV. **Establishing the Detail Drawing Set (1 hour, lecture)** A. Determining number of drawings and overall layout B. Relying on precedents, manufacturer's specifications V. **Considerations in Developing a Detail (3 hours, lecture)**

	A. Standard vs. customized construction details B. The pitfalls of using pre-drawn details C. Materials, sizing, spacing, and installation VI. **Making Building Codes Visual (3 hours, lecture)** A. International Building Code (IBC) vs. California Building Code (CBC) B. Translating local codes to viable construction details C. Achieving the performance standards required by building regulations VII. **Preparing for Review and Budgeting (2 hours, lecture)** A. Consultants, building officials and general contractors B. Developing a common visual language to offer assembly information C. Coordination with general arrangement drawings VIII. **Redlining and Finalizing a Detail (1 hour, lecture)** A. Evaluating for accuracy and clarity B. Corrections and making revisions IX**. The "Learning by Doing" Principle** (**36 hours, lab)** A. Individual-centered Focus Tasks 1. Personal project development and evaluation 2. Instructor-to-student and peer-to-peer interactions 3. Instructor desk critiques 4. Exercise engagement based of lecture content 5. Content composition to explore visual narration X**. Peer Observation & Cooperation (18 hours, lab)** A. Group Collaboration Activity 1. Small group pin-ups 2. Developing/ testing of visual communication principals 3. Participation in group tasks and projects
Total Lecture Hours:	18
Total Laboratory Hours:	54
Total Hours:	72
Primary Method of Evaluation:	3) Skills demonstration
Typical Assignment Using Primary Method of Evaluation:	Compose a construction detail drawing that visually demonstrates building assembly knowledge, drawing acuity and visual communication ability. Submit construction detail drawing to the instructor.
Critical Thinking Assignment 1:	Develop a detail sketch demonstrating the ability to determine which components define a particular building assembly connection and translate into a finish drawing. Submit sketch to the instructor.

Critical Thinking Assignment 2:	Structure a construction detail drawing that uses knowledge of visual strategies, employs drawing standardization, and establishes coordination conventions for referencing to general arrangement drawings. Submit construction detail to the instructor.
Other Evaluation Methods:	Class Performance, Completion, Presentation
If Other:	
Instructional Methods:	Demonstration, Discussion, Lab, Lecture, Multimedia presentations
If other:	
Work Outside of Class:	Skill practice, Journal (done on a continuing basis throughout the semester), Other (specify), Problem solving activity
If Other:	Drawing presentation preparation
Up-To-Date Representative Texts:	Edward Allen and Patrick Rand*. Architectural Detailing: Function, Constructability, Aesthetics*. Wiley. 3rd Edition, 2016. (Discipline Standard)
Alternative Texts:	
Required Supplementary Readings:	
Other Required Materials:	Handouts prepared by instructor
Requisite	Prerequisite
Category	sequential
Requisite course:	Architecture 170 Architecture 251
Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).	**Experience in 2D drawing techniques.** ARCH 170 - Construct lines demonstrating different line weights and types ARCH 170 - Understand how to orthographically project the basic architectural drawing conventions (plan, section, and elevation) and apply their use in architectural presentation drawings. **Experience in construction documentation.** ARCH 251 - Evaluate building and zoning codes and determine how they affect the design of a building. ARCH 251 - Analyze the names and functions of framing members in wood frame construction. ARCH 251 - Create a series of construction documents using hand drafting, CAD and BIM.
Requisite Skill:	
Requisite Skill and Matching skill(s): Bold the requisite skill(s). if applicable	

Requisite course:	Architecture 171 Architecture 252
Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).	**Experience in 3D drawing techniques.** ARCH 171 - Construct the properties of a 30 degree isometric grid layout. ARCH 171 - Construct perspective drawing layout, both one point and two point perspective. ARCH 171 - Diagram shadows and reflections in perspective. **Experience in construction documentation.** ARCH 252 - Analyze and promote sustainable design and construction. ARCH 252 - Document architectural reference and knowledge with a photography project. ARCH 252 - Develop and apply sketching and computer drawing techniques for a series of construction documents.
Requisite Skill:	
Requisite Skill and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s). if applicable	
Enrollment Limitations and Category:	
Enrollment Limitations Impact:	
Course Created by:	Marc Yeber
Date:	11/06/2023
Original Board Approval Date:	03/21/2024
Effective Term:	FALL 2024