Course Acronym:	ARCH
Course Number:	252
Descriptive Title:	Construction Documentation II
Division:	Industry and Technology
Department:	Architecture
Course Disciplines:	Architecture
Catalog Description:	This course is an advanced-level construction document development class. Students will explore current planning and building codes to understand the design impact on project design including Green Building Codes and Net Zero. Sketching and drawing techniques, and Computer Aided Design (CAD) skills will be developed to learn to create construction documents.
Prerequisite:	Architecture 251 (formerly Architecture 150A) with a minimum grade of C
Co-requisite:	
Recommended Preparation:	Architecture 119 or equivalent architectural AutoCAD skills
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:	No
Effective Date:	
General Education: ECC	
Term:	
Other:	
CSU GE:	
Term:	
Other:	

IGETC:	
Term:	
Other:	
Student Learning Outcomes:	**SLO #1 Two-Story House** Upon completion of this advanced course, the student will be able to draw all of the construction documents for a two story house on AutoCAD software. **SLO #2 Model** Upon completion of this class, a student will be able to build a massing model from the drawings they create. **SLO #3 Stair Design** Upon completion of this course a student will be able to design, calculate and draw a stairway for a pre-described area of space given to them. They will meet all current Building Codes related to stair design.
Course Objectives:	1. Analyze and promote sustainable design and construction. 2. Document architectural reference and knowledge with a photography project. 3. Develop and apply sketching and computer drawing techniques for a series of construction documents. 4. Understand and demonstrate the use of zoning codes and building codes to design structures of various uses. 5. Create site design drawings from property survey, including topographic lines, rerouting lines and site sections. 6. Distinguish between basic roof styles, terminology and code requirements for roof design. 7. Design and delineate stair layout in plan and section views. Express in graphic and written form an understanding of code requirements for stair design. 8. Analyze and calculate structural framing members in light frame construction. 9. Draw and understand typical structural concepts, structural detail, lateral bracing systems and construction materials and methods.
Major Topics:	**I. SUSTAINABLE THINKING (4 hours, lecture)** A. Daily living B. Design ideas C. Construction ideas **II. PHOTOGRAPHY RESEARCH PROJECT (2 hours, lecture)** A. Two story houses B. Site information C. Roof information D. Exterior information

E. Interior information

F. Materials and methods information

III. SITE DESIGN PROJECT (4 hours, lecture)

A. Building orientation

B. Planning code requirements

C. Building code requirements

D. Sketching and drafting

E. CAD drawing

IV. TOPOGRAPHIC DESIGN (4 hours, lecture)

A. Route and re-route topographic lines

B. Site slopes

C. Site cross sections

V. HOUSE DESIGN PROJECT (10 hours, lecture)

A. Building code application

B. Roof design

C. Stair design

VI. STRUCTURAL DESIGN PROJECT (12 hours, lecture)

A. Framing design

B. Foundation design

C. Lateral design

VII. SEMESTER PROJECTS (72 hours, lab)

A. Sustainable thinking project

B. Photography research project

C. Site design project

D. Topographic design project

	E. House design project
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:	Given an area of a floor plan for a proposed stair, calculate total rise and run, number and size of risers and treads, stairwell opening, and landing location and size. Draw stair plan and section view at specified scale, and identify the structural components. Submit stair plan and stair section view to the instructor.
Critical Thinking Assignment 1:	Given a two-story floor plan, create a roof plan with a gable roof and design four exterior elevations. Submit roof plan with four elevations to the instructor.
Critical Thinking Assignment 2:	Given a two-story floor plan, design the vertical structure and lateral bracing systems for a proposed building. Submit framing plan to the instructor.
Other Evaluation Methods:	Performance exams Oral exams Quizzes Field work Class performance Homework problems Completion Other (specify): Model building and drawings Presentation
Instructional Methods:	Demonstration Laboratory Lecture Multimedia presentations
If other:	Model building and drafting
Work Outside of Class:	Study Skill practice Required reading Problem solving activities
If Other:	

Up-To-Date Representative Textbooks:	Francis D. K. Ching. BUILDING CONSTRUCTION ILLUSTRATED. Sixth Edition. John Wiley, 2020.
Alternative Textbooks:	
Required Supplementary Readings:	
Other Required Materials:	Mechanical pencil Lead holders Color pencils Architects scale and engineers scale Drafting triangles OTHER TOOLS Camera Calculator Lap top computer
Requisite:	Prerequisite
Category:	sequential
Requisite course(s): List both prerequisites and corequisites in this box.	Architecture 251 or Architecture 150A
Requisite and Matching skill(s):Bold the requisite skill. List the corresponding course objective under each skill(s).	**Knowledge of framing members and understanding of their function in construction of a house.** ARCH 251/ARCH 150A - Analyze the names and functions of framing members in wood frame construction **Architectural drafting techniques for composing construction documents for the purpose of building a house.** ARCH 251/ARCH 150A - 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-119
Requisite and Matching skill(s):Bold the requisite skill. List	**Layout an architectural drawing on AutoCAD software.**

the corresponding course objective under each skill(s).	ARCH 119 - Create architectural construction documents using the commands in AutoCAD. **Plot a drawing using AutoCAD software.** ARCH 119 - Create architectural construction documents using the commands in AutoCAD. **Orthographically project views using AutoCAD.** ARCH 119 - Create architectural construction documents using the commands in AutoCAD.
Requisite Skill:	or equivalent architectural AutoCAD skills
Requisite Skill and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s). If applicable	If students have not taken Architecture 119 but have taken a similar course at another college or have architectural AutoCAD experience, they will have the recommended skills to enroll in this course. It is recommended that students possess basic computer aided architectural drafting skills to enhance success in this course.
Enrollment Limitations and Category:	
Enrollment Limitations Impact:	
Course Created by:	Robert Codey
Date:	11/06/1986
Original Board Approval Date:	09/01/1986
Last Reviewed and/or Revised by:	Dan Richardson
Date:	05/29/2022
Last Board Approval Date:	12/19/2022