Course Acronym:	CTEC
Course Number:	122
Descriptive Title:	Rough Framing
Division:	Industry and Technology
Department:	Construction Technology
Course Disciplines:	Construction Technology
Catalog Description:	This is an advanced course in construction technology covering rough framing. Topics of instruction include materials and methods of residential rough frame construction, rough lumber estimating and California Building Code (CBC) requirements. Practical instruction is given in the use of tools and materials through construction laboratory work.
Prerequisite:	Construction Technology 100 or Construction Technology 110 with a minimum grade of C in prerequisite or equivalent
Co-requisite:	
Recommended Preparation:	
Enrollment Limitation:	
Hours Lecture (per week):	2.5
Hours Laboratory (per week):	5
Outside Study Hours:	5
Total Course Hours:	135
Course Units:	4
Grading Method:	Letter Grade only
Credit Status:	Credit, degree applicable
Transfer CSU:	Yes
Effective Date:	Spring 2002
Transfer UC:	No
Effective Date:	
General Education: ECC	
Term:	
Other:	
CSU GE:	
Term:	
Other:	

IGETC:	
Term:	
Other:	
Student Learning Outcomes:	**SLO #1 Rough Framing Materials and Methods** Students will be able to demonstrate a basic application of materials and methods commonly used in residential construction. **SLO #2 Hold-Down Alignment** Students will be able to align a "hold-down" for use in a sheer wall assembly. **SLO #3 Framing Lumber** Students be able to crown and mark framing lumber.
Course Objectives:	1. Describe the standard materials, methods, dimensions, CBC and procedures associated with the installation of a residential raised floor system. 2. Calculate the quantities and prepare estimates, from working drawings and written descriptions, for raised floor framing members. 3. Construct a raised floor system as per CBC requirements. 4. Describe the standard materials, methods, dimensions, CBC requirements and procedures associated with the construction of platform framed and rake walls. 5. Calculate the quantities and prepare estimates for wall framing members using working drawings and written descriptions. 6. Layout and construct a single story framed structure to industry standards following plans and specifications.
Major Topics:	**I. OVERVIEW OF ROUGH FRAMING (5 hours, lecture)** A. Safety instructions B. Project requirements **II. OVERVIEW OF ROUGH FRAMING (10 hours, lab)** A. Safety test B. Tour of lab 1. Material storage 2. Building sites 3. Safety equipment 4. Large tool storage C. Toolroom **III. FLOOR SYSTEM (15 hours, lecture)** A. CBC requirements B. Conventional floor system framing C. Estimating materials D. Layout and construction processes **IV. FLOOR SYSTEM (20 hours, lab)**

A. CBC requirements
B. Conventional floor system framing
C. Estimating materials
D. Layout and construction processes

V. PLATFORM WALL FRAMING (15 hours, lecture)

A. CBC requirements
B. Floor plan, door and window schedules
C. Methods of wall framing
D. Layout and construction process for platform framing
E. Special framing:
1. Sizing headers for two story residential structures
2. Backing for cabinets and special items
3. Framing around plumbing fixtures and pipes, shear panels and arches
4. Estimating materials

VI. PLATFORM WALL FRAMING (30 hours, lab)

A. CBC requirements
B. Floor plan, door and window schedules
C. Methods of wall framing
D. Layout and construction process for platform framing
E. Special framing:
1. Sizing headers for two story residential structures
2. Backing for cabinets and special items
3. Framing around plumbing fixtures and pipes, shear panels and arches
4. Estimating materials

VII. RAKE AND WALL FRAMING (5 hours, lecture)

A. Layout: chalk line method versus mathematical method
B. Construction process

VIII. RAKE AND WALL FRAMING (20 hours, lab)

A. Layout: chalk line method versus mathematical method
B. Construction process

IX. CEILING SYSTEM (5 hours, lecture)

A. CBC requirements
B. Layout and construction
C. Estimating materials

X. CEILING SYSTEM (10 hours, lab)

A. CBC requirements
B. Layout and construction
C. Estimating materials

Total Lecture Hours:	45
Total Laboratory Hours:	90
Total Hours:	135
Primary Method of Evaluation:	3) Skills demonstration
Typical Assignment Using Primary Method of Evaluation:	Completely layout and frame a rake wall to CBC requirements. Consult instructor for evaluation.
Critical Thinking Assignment 1:	Given a set of working drawings, prepare a complete one-page cutting list for the items listed below: a. Headers b. Rough sills c. Upper cripple studs d. Lower cripple studs e. Trimmers Submit cutting list to the instructor.
Critical Thinking Assignment 2:	Given a set of working drawings, create a one-page estimate documenting the quantity, size, and length of materials to order for each of the following: a. Plates b. Studs c. Headers d. Wall braces Submit list to the instructor.
Other Evaluation Methods:	Performance exams Written homework Class Performance Multiple Choice Completion Matching Items True/False

Instructional Methods:	Demonstration Discussion Group Activities Guest Speakers Internet Presentation/Resources Laboratory Lecture Multimedia presentations Other (please specify) STUDENT RESEARCH ROUGH FRAMING PRESENTATIONS
If other:	
Work Outside of Class:	Study Required reading Problem solving activities Written work
If Other:	
Up-To-Date Representative Texts:	Leonard Koel. CARPENTRY. American Technical Publishers. 7th edition. 2021
Alternative Texts:	
Required Supplementary Readings:	
Other Required Materials:	Pocket calculator Architectural scale Safety glasses Carpenter's nailing apron Appropriate shoes and attire for construction work
Requisite:	Prerequisite
Category:	sequential
Requisite course(s): List both prerequisites	Construction Technology 100 or Construction Technology 110

and corequisites in this box.	
Requisite and Matching skill(s):Bold the requisite skill. List the corresponding course objective under each skill(s).	**Ability to use hand tools and hand-held power tools in residential construction work.** CTEC 100 - Construct a standard height wall including doors and windows. CTEC 100 - Step-off rafter lengths using a framing square. CTEC 100 - Identify and use hand tools common to the construction industry. CTEC 100 - Identify and use hand held power tools common to the construction industry CTEC 110 - Frame a standard height wall. CTEC 110 - Mix, place and finish a concrete slab. CTEC 110 - Identify and use hand tools and handheld power tools common to the construction industry. **Command of construction nomenclature.** CTEC 100 - Calculate header and cripple lengths for standard doors and windows. CTEC 100 - Identify components in a structural Type V residential. CTEC 100 - Compute rafter lengths. CTEC 100 - Step-off rafter lengths using a framing square. CTEC 100 - Identify and define a list of construction terms. CTEC 100 - Identify and use hand tools common to the construction industry. CTEC 100 - Identify and use hand held power tools common to the construction industry. CTEC 110 - Determine quantities of concrete needed for various concrete pours. CTEC 110 - Identify structural framing members. CTEC 110 - Identify and define a list of construction terms. CTEC 110 - Identify and use hand tools and handheld power tools common to the construction industry. CTEC 110 - Interpret architectural blueprints. CTEC 110 - Identify and analyze the procedures for submission of a building permit application. **Knowledge of construction materials and methods.** CTEC 100 - Calculate header and cripple lengths for standard doors and windows.

	CTEC 100 - Identify components in a structural Type V residential. CTEC 100 - Construct a standard height wall including doors and windows. CTEC 100 - Compute rafter lengths. CTEC 100 - Step-off rafter lengths using a framing square. CTEC 100 - Construct a gable roof structure. CTEC 100 - Identify and define a list of construction terms. CTEC 100 - Identify and use hand tools common to the construction industry. CTEC 100 - Identify and use hand held power tools common to the construction industry. CTEC 110 - Mix, place and finish a concrete slab. CTEC 110 - Determine quantities of concrete needed for various concrete pours. CTEC 110 - Identify structural framing members. CTEC 110 - Identify and define a list of construction terms. CTEC 110 - Identify and use hand tools and handheld power tools common to the construction industry. CTEC 110 - Prepare and dimension a floor plan. CTEC 110 - Identify and analyze the procedures for submission of a building permit application. CTEC 110 - Frame a standard height wall.
Requisite Skill:	or equivalent
Requisite Skill and Matching Skill(s): Bold the requisite skill(s). If applicable	If a student has taken Construction Technology 100 or 110 at another college or has experience in building fundamentals or additions and remodeling, they will be prepared to enroll in this course. If students do not have some form of construction building experience, they will not succeed in this course.
Requisite course:	
Requisite and Matching skill(s):Bold the requisite skill. List the corresponding course objective under each skill(s).	
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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:	Tim Meza
Date:	09/01/2001
Original Board Approval Date:	04/16/2001
Last Reviewed and/or Revised by:	Ross Durand
Date:	05/01/2025
Last Board Approval Date:	06/26/2025
Effective Term:	FA 2026