



## BCCM 2010

**Division:** Career and Technical Education

**Department:** Construction Technology

**Course:** BCCM 2010

**Title:** Framing Methods

**Catalog Description:**

This course provides practical hands-on learning experiences in layout procedures and erection of floor, wall, ceiling, stairs, and roof construction of a residential house. The course includes a study of the various kinds of insulations and their applications on the project house.

**General Education Requirements:** N/A

**Semesters Offered:** Fall

**Credit/Time Requirement:** Credit: 7; Lecture: 4; Lab: 6

**Clock/Hour Requirements:** 150

**Offered for Non-Credit:** Yes

**Prerequisites:** N/A

**Corequisites:** N/A

**Justification:**

Plainly, the construction industry is a vital part of the nation's work force and economy. Framing methods are a large part of the construction phase. As such, the course is necessary for training students in Building Construction.

**Student Learning Outcomes:**

Upon successful completion of this course, students will:

- learn lumber sizes, grades, species, and plywood grades
- learn framing theory and procedures to construct a floor
- learn framing procedures and theory to construct exterior and interior walls
- learn layout and construction of various types and styles of stairs
- construct a flight of stairs and stairs with a landing for a building
- learn framing procedures and theory to construct a ceiling
- learn framing construction for layout and assembly of a roof and roofing materials
- study various types of insulations and specifications of insulations.

**Content:**

Course objectives will be accomplished by providing students with learning experiences in the following subject areas:

- Lumber and building materials
  - Lumber
    - Wood structure
    - Kinds of wood
    - Moisture and shrinkage
    - Cutting methods
    - Sizes and grades
  - Plywood
  - Fasteners
    - Nails
    - Adhesives
    - Power-driven fastening systems
  - Floor Framing
    - Sill Plate
    - Floor framing
      - Beams and girders
      - Types of joists
        - Solid
        - Truss joists
        - Wood "I" Beams
  - Bridging
  - Span calculations
  - Openings
  - Flooring
  - Estimating
  - Wall Framing
    - Parts of a wall
    - Corners
    - Wall intersections
    - Rough openings/header spans
    - Layout
    - Estimating
    - Bracing
  - Stairs
    - Types of stairs
    - Stair parts and terms
    - Stair design
    - Stair calculations
    - Stair layout
    - Stair construction
    - Material estimating
  - Ceiling framing
    - Span calculations
    - Layout

- Estimating
- Roof Framing
  - Common, hip, valley, and jack rafter layout
  - Truss design, construction, and installation
  - Roof coverings and application
- Insulation
  - Heat transmission
  - Thermal properties
  - Types of insulation
  - Vapor barriers and condensation
  - Placement of insulation
  - Estimating materials.

### **General Education Outcomes:**

### **Applied Education Outcomes:**

- 1) Students will acquire entry-level skills specific to and appropriate for employment in their chosen field of study.

A basic entry level knowledge of framing a residential home will be required by each student.

- 2) Students will become aware of industry specific certification and develop skills sufficient to acquire the same.

All students will know of existing potential jobs in the community and what steps will have to be taken in order to work in this industry and what skills will need to be learned to become a framer.

- 3) Students will demonstrate safe practices and awareness of potential hazards in their field of expertise.

Each student will know all of the proper handling of tools and equipment while framing, and the importance of a clean job site and eye protectants.

- 4) Students will demonstrate interpersonal skills specific to the skills and environment inherent in their field.

Each student will know how to speak to potential customers and co-workers using respect and ambition about framing a residential home.

### **Key Performance Indicators:**

Student Learning Outcomes will be assessed by one or more of the following Key Performance Indicators:

- exams/quizzes (written or oral)
- demonstrations of skills
- performance on house project

- attendance
- attitude.

**Representative Text and/or Supplies:**

- Vogt, Floyd, *Carpentry*, current edition, Thomson Delmar Learning.
- Vogt, Floyd, *Carpentry Workbook*, current edition, Thomson Delmar Learning.

**Optimum Class Size: 15**

**Maximum Class Size: 20**

**Signatures:**

I hereby submit this course syllabus:

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Marlin Christensen, M. Ed., Instructor

I hereby find this course consistent with the goals and resources of the Construction Technology Department:

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Marlin Christensen, M. Ed., Instructor, Chair

I hereby find this course consistent with the goals and resources of the Career and Technical Education Division:

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Michael P. Medley, MBA, Assistant Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

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Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

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Michelle Olsen, MLS, Campus Librarian (Richfield Campus)