

## COURSE SYLLABUS

<b>LAST REVIEW</b>	Fall 2022
<b>COURSE TITLE</b>	Roof Framing
<b>COURSE NUMBER</b>	CONS 0111
<b>DIVISION</b>	Career and Technical Education
<b>DEPARTMENT</b>	CONS
<b>CIP CODE</b>	46.0201
<b>CREDIT HOURS</b>	3
<b>CONTACT HOURS/WEEK</b>	Class: 1      Lab: 4      Clinical:
<b>PREREQUISITES</b>	KBOR approved Core Curriculum. OSHA 10, Math Level 3 Recommended

### COURSE DESCRIPTION

This course is the basic carpentry course. It is in alignment with NCCER and the Kansas Board of Regents. It is (in part) a component of the Core Curriculum for the KCKCC Construction Technology program and the KCKCC Building and Property Maintenance program. The course topics include: Environmental sustainability, Hand and Power Tools, Roof Framing, and Roofing Applications.

### PROGRAM LEARNING OUTCOMES

1. Demonstrate appropriate safety practices and procedures.
2. Demonstrate proper methods for building a structure using provided blueprints.
3. Demonstrate proper installation of windows, doors, and stairs.

### TEXTBOOKS

<http://kckccbookstore.com/>

### METHODS OF INSTRUCTION

A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

### COURSE OUTLINE

- I. Hand and Power Tools (Core)
  - A. Hand tools.
  - B. Safety.
  - C. General safety rules.
  - D. General rules for properly maintaining power tools.
  - E. Portable power tools.
  - F. Using power tools in a safe manner.

## II. Roof Framing (Core)

- A. Terms associated with roof framing.
- B. Roof framing members.
- C. Calculate length of a rafter.
- D. Types of trusses.
- E. Rafter framing square, speed square, and calculator.
- F. Types of sheathing.
- G. Gable roofs.
- H. Roof openings.
- I. Gable roofs using trusses.
- J. Materials used in framing.

## III. Roofing Applications

- A. Materials and methods used in roofing.
- B. Safety requirements.
- C. Fiberglass shingles.
- D. Closing up a valley.
- E. Making roof projections watertight.
- F. Installing main and hip ridge caps.
- G. Crickets and saddles.
- H. Wood shingles and shakes.
- I. Closing up a valley using wood shingles.
- J. Making roof projections watertight using wood.
- K. Main and hip ridge caps.
- L. Other types of roofing.

## IV. Environmental Sustainability

- A. Environmentally safe waste disposal.
- B. Life cycle analysis.
- C. Recycled material.
- D. Low VOC emissions.
- E. New "green" materials.
- F. New "green" methods and practices.
- G. "Low impact" designs.

## **COURSE LEARNING OUTCOMES AND COMPETENCIES**

Upon successful completion of this course, the student will:

- A. Identify and describe the types of hand and power tools, safety, and tool usage.
  - 1. Identify the hand tools commonly used by carpenters and describe their uses.
  - 2. Use hand tools in a safe and appropriate manner.
  - 3. State the general safety rules for operating all power tools, regardless of type.
  - 4. State the general rules for properly maintaining all power tools, regardless of type.
  - 5. Identify the portable power tools commonly used by carpenters and describe their uses.
  - 6. Use portable power tools in a safe and appropriate manner.
- B. Identify and describe the types of roof framing, trusses, gables, and materials.
  - 7. Understand the terms associated with roof framing.

8. Identify the roof framing members used in gable and hip roofs.
  9. Identify the methods used to calculate the length of a rafter.
  10. Identify the various types of trusses used in roof framing.
  11. Use a rafter framing square, speed square, and calculator in laying out a roof.
  12. Identify various types of sheathing used in roof construction.
  13. Frame a gable roof with vent openings.
  14. Frame a roof opening.
  15. Erect a gable roof using trusses.
  16. Estimate the materials used in framing and sheathing a roof.
- C. Identify and describe the types of materials, safety, installation, and methods.
17. Identify the materials and methods used in roofing.
  18. Explain the safety requirements for roof jobs.
  19. Install fiberglass shingles on gable and hip roofs.
  20. Close up a valley using fiberglass shingles.
  21. Explain how to make various roof projections watertight when using fiberglass shingles.
  22. Complete the proper cuts and install the main and hip ridge caps using fiberglass shingles.
  23. Lay out, cut, and install a cricket or saddle.
  24. Install wood shingles and shakes on roofs.
  25. Describe how to close up a valley using wood shingles and shakes.
  26. Explain how to make roof projections watertight when using wood shakes and shingles.
  27. Complete the cuts and install the main and hip ridge caps using wood shakes/shingles.
  28. Demonstrate the techniques for installing other selected types of roofing materials.
- D. Identify and describe sound environmental practices for carpentry including waste disposal, life cycle analysis, green practices and low impact.
29. Describe waste disposal methods for this industry according to EPA and industry guidelines.
  30. Describe the process of life cycle analysis in this industry based on industry guidelines.
  31. Identify recycled materials by label and industry practice.
  32. Define “low emission” and give two examples.
  33. Identify new “green” materials now being introduced or currently used in this industry.
  34. Describe new “green” practices and methods being instituted or currently employed within this industry.
  35. Identify and explain the term “low Impact” as it relates to the environment.

### **ASSESSMENT OF COURSE LEARNING OUTCOMES AND COMPETENCIES**

Student progress is evaluated through both formative and summative assessment methods. Specific details may be found in the instructor’s course information document.

### **COLLEGE POLICIES AND PROCEDURES**

*Student Handbook*

<https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-of-conduct.pdf>

*College Catalog*

<https://www.kckcc.edu/academics/catalog/index.html>

*College Policies and Statements*

<https://www.kckcc.edu/about/policies-statements/index.html>

*Accessibility and Accommodations*

<https://www.kckcc.edu/academics/resources/student-accessibility-support-services/index.html>.