

COURSE SYLLABUS

LAST REVIEW	Fall 2022
COURSE TITLE	Carpentry Basics
COURSE NUMBER	BEMT 0108
DIVISION	Career and Technical Education
DEPARTMENT	BEMT
CIP CODE	46.0401
CREDIT HOURS	4
CONTACT HOURS/WEEK	Class: 1.5 Lab: 5
PREREQUISITES	BEMT 0101

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 Engineering and Maintenance Technology program. The course topics include: Environmental sustainability, Orientation to the Trade, Building Materials, Fasteners, and Adhesives, Hand and Power Tools, Reading Plans and Elevations, and Commercial Drawings.

PROGRAM LEARNING OUTCOMES

Students will demonstrate an adherence to safety standards and proficiency in the skills necessary for carpentry basics, and both the construction of new or evaluation/repair of existing framing structures, floors, walls, dry wall, painting, windows, doors, stairs, wood joints, and moldings.

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. Orientation to the Trade (Core)
 - A. History of carpentry.
 - B. Aptitudes, behaviors, and skills.
 - C. Training opportunities.

- D. Career opportunities.
- E. Responsibilities.
- F. Personal characteristics.
- G. Importance of safety.
- II. Building Materials, Fasteners, and Adhesives (Core)
 - A. Types of building materials.
 - B. Types of hardwoods and softwoods.
 - C. Grades and markings of wood.
 - D. Safety precautions.
 - E. Storing and handling.
 - F. Types of engineered lumber.
 - G. Quantities of lumber.
 - H. Fasteners, anchors, and adhesives.
- III. 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.
- IV. Reading Plans and Elevations (Core)
 - A. Types of drawings.
 - B. Types of lines used on construction drawings.
 - C. Architectural symbols.
 - D. Electrical, mechanical, and plumbing symbols.
 - E. Abbreviations commonly used.
 - F. Interpret plans, elevations, schedules, sections, and details.
 - G. Written specifications.
 - H. Parts of a specification.
 - I. Quantity takeoff for materials.
- V. Introduction to Concrete, Reinforcing Materials, and Forms (Core)
 - A. Properties of cement.
 - B. Composition of concrete.
 - C. Volume estimates.
 - D. Types of concrete reinforcement.
 - E. Types of footings.
 - F. Types of forms.
 - G. Safety procedures.
 - H. Plumb and brace.
- VI. Commercial Drawings
 - A. Commercial and residential drawings.
 - B. Keys, abbreviations, and other references.
 - C. Commercial drawings.
 - D. Door and window schedules.

- E. Basic construction details in commercial construction.
- F. Floor area.

VII. 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 history of the trade, responsibilities, safety, skills needed, training and careers.
 - 1. Describe the history of the carpentry trade.
 - 2. Identify the aptitudes, behaviors, and skills needed to be a successful carpenter.
 - 3. Identify the training opportunities within the carpentry trade.
 - 4. Identify the career and entrepreneurial opportunities within the carpentry trade.
 - 5. Identify the responsibilities of a person working in the construction industry.
 - 6. State the personal characteristics of a professional.
 - 7. Explain the importance of safety in the construction industry.
- B. Identify and describe the types of materials, safety, storage, and fasteners.
 - 8. Identify various types of building materials and their uses.
 - 9. State the uses of various types of hardwoods and softwoods.
 - 10. Identify the different grades and markings of wood building materials.
 - 11. Identify the safety precautions associated with building materials.
 - 12. Describe the proper method of storing and handling building materials.
 - 13. State the uses of various types of engineered lumber.
 - 14. Calculate the quantities of lumber and wood products using industry-standard methods.
 - 15. Describe the fasteners, anchors, and adhesives used in construction work and explain their uses.
- C. Identify and describe the types of hand and power tools, safety, and tool usage.
 - 16. Identify the hand tools commonly used by carpenters and describe their uses.
 - 17. Use hand tools in a safe and appropriate manner.
 - 18. State the general safety rules for operating all power tools, regardless of type.
 - 19. State the general rules for properly maintaining all power tools, regardless of type.
 - 20. Identify the portable power tools commonly used by carpenters and describe their uses.
 - 21. Use portable power tools in a safe and appropriate manner.

- D. Identify and describe the types of drawings, reading plans and elevations, symbols, plans, and materials.
22. Describe the types of drawings usually included in a set of plans and list the information found on each type.
 23. Identify the different types of lines used on construction drawings.
 24. Identify selected architectural symbols commonly used to represent materials on plans.
 25. Identify selected electrical, mechanical, and plumbing symbols commonly used on plans.
 26. Identify selected abbreviations commonly used on plans.
 27. Read and interpret plans, elevations, schedules, sections, and details contained in basic construction drawings.
 28. State the purpose of written specifications.
 29. Identify and describe the parts of a specification.
 30. Demonstrate or describe how to perform a quantity takeoff for materials.
- E. Identify and describe properties of concrete, reinforcing materials, safety and forms.
31. Identify the properties of cement.
 32. Describe the composition of concrete.
 33. Perform volume estimates for concrete quantity requirements.
 34. Identify types of concrete reinforcement materials and describe their uses.
 35. Identify various types of footings and explain their uses
- F. Identify and describe the types of drawings, schedules, and floor area.
36. Recognize the difference between commercial and residential construction drawings.
 37. Identify the basic keys, abbreviations, and other references contained in a set of commercial drawings.
 38. Accurately read a set of commercial drawings.
 39. Identify and document specific items from a door and window schedule.
 40. Explain basic construction details and concepts employed in commercial construction.
 41. Calculate the floor area of each room in a floor plan.
- G. Identify and describe sound environmental practices for carpentry including waste disposal, life cycle analysis, green practices and low impact.
42. Describe waste disposal methods for this industry according to EPA and industry guidelines.
 43. Describe the process of life cycle analysis in this industry based on industry guidelines.
 44. Identify recycled materials by label and industry practice.
 45. Define “low emission” and give two examples.

46. Identify new “green” materials now being introduced or currently used in this industry.
47. Describe new “green” practices and methods being instituted or currently employed within this industry.
48. 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>.