

COURSE SYLLABUS

LAST REVIEW	Fall 2022
COURSE TITLE	Carpentry (Level 2)
COURSE NUMBER	CONS 0208
DIVISION	Career and Technical Education
DEPARTMENT	CONS
CIP CODE	46.0201
CREDIT HOURS	3
CONTACT HOURS/WEEK	Class: 1 Lab: 4 Clinical: X
PREREQUISITES	KBOR approved Core Curriculum. OSHA 10, Math Level 3 Recommended

COURSE DESCRIPTION

This is the advanced course in Carpentry. It is aligned with NCCER and the Kansas Board of Regents. The course topics include: Environmental sustainability, Commercial Drawings, Roofing Applications, Thermal and Moisture Protection, Exterior Finishing, Cold-Formed Steel Framing, Drywall Installation, Drywall Finishing, Doors and Door Hardware, Suspended Ceilings, Window - Door - Floor and Ceiling Trim, Cabinet Installation, and Cabinet Fabrication.

PROGRAM LEARNING OUTCOMES

1. Demonstrate appropriate safety practices and procedures.
2. Demonstrate proper methods for completion of interior finishes.
3. Demonstrate proper methods for mechanical installation

TEXTBOOKS

<http://kckccbbookstore.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. Commercial Drawings
 - A. Commercial and residential construction drawings.
 - B. Keys, abbreviations, and other references.
 - C. Reading commercial drawings.
 - D. Document specific items.
 - E. Construction details and concepts.
 - F. Calculate floor area.
- II. Roofing Applications

- A. Materials used in roofing.
 - B. Safety requirements.
 - C. Fiberglass shingles.
 - D. Valley closing.
 - E. Watertight projections.
 - F. Main and hip ridge caps.
 - G. Crickets and saddles.
 - H. Wood shingles.
 - I. Closing a valley using wood shingles.
 - J. Watertight projections using wood shingles.
 - K. Main and hip ridge caps using shingles.
 - L. Selected types of roofing materials.
- III. Thermal and Moisture Protection
- A. Insulation.
 - B. Types of insulation.
 - C. Required insulation.
 - D. Selected insulation materials.
 - E. Moisture control.
 - F. Vapor barriers.
 - G. Methods of waterproofing.
 - H. Air infiltration.
 - I. Building wraps.
- IV. Exterior Finishing
- A. Wall insulation and flashing.
 - B. Common cornices.
 - C. Lap and panel siding.
 - D. Common wood siding.
 - E. Fiber-cement siding.
 - F. Types of vinyl and metal siding.
 - G. Types of stucco and masonry veneer finishes.
 - H. Types of special exterior finish.
 - I. Types of siding commonly used in your area.
- V. Cold-Formed Steel Framing
- A. Steel framing.
 - B. Tools and fasteners.
 - C. Applications for steel framing.
 - D. Back-to-back, box, and L-headers.
 - E. Steel stud structural walls.
 - F. Steel stud non-structural walls.
- VI. Drywall Installation
- A. Types of drywall.
 - B. Thickness of drywall.
 - C. Fasteners for drywall.
 - D. Fastener schedules.
 - E. Single-layer and multi-layer drywall installation including:
 - 1. Nails
 - 2. Drywall screws
 - 3. Adhesives

- F. Gypsum drywall.
- G. Soundproofing.
- H. Material estimating.
- VII. Drywall Finishing
 - A. Levels of finish.
 - B. Hand tools.
 - C. Automatic tools.
 - D. Materials used including:
 - 1. Compounds
 - 2. Joint reinforcing tapes
 - 3. Trim material
 - 4. Textures and coatings
 - E. Finishing drywall.
 - F. Types of problems.
 - G. Damaged drywall.
- VIII. Doors and Door Hardware
 - A. Types of door jambs and frames.
 - B. Types of interior doors.
 - C. Types of interior door hardware.
 - D. Safe use of the hand and power tools.
 - E. Typical door schedule.
 - F. Hanging a door.
- IX. Suspended Ceilings
 - A. Level line.
 - B. Terms related to sound waves.
 - C. Types of suspended ceilings.
 - D. Ceiling layout.
 - E. Suspended ceilings.
 - F. Material takeoffs.
 - G. Installing suspended ceilings.
- X. Window, Door, Floor, and Ceiling Trim
 - A. Types of standard moldings.
 - B. Square and miter cuts.
 - C. Coped joints.
 - D. Fasteners to install trim.
 - E. Interior trim, including:
 - 1. Door trim
 - 2. Window trim
 - 3. Base trim
 - 4. Ceiling trim
 - F. Materials estimating.
- XI. Cabinet Installation
 - A. Typical base and wall kitchen cabinets.
 - B. Cabinet components and hardware.
 - C. Factory-made cabinets.
 - D. Installation of an island base.
- XII. Cabinet Fabrication
 - A. Types of woods.

- B. Stationary power tools.
 - C. Types of joints used in cabinetmaking.
 - D. Cabinet drawings.
 - E. Plastic laminate.
- XIII. 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 commercial drawings, abbreviations, and calculate floor area.
 1. Identify and describe the difference between commercial and residential construction drawings.
 2. Identify the basic keys, abbreviations, and other references contained in a set of commercial drawings.
 3. Identify and describe and accurately read a set of commercial drawings.
 4. Identify and document specific items from a door and window schedule.
 5. Identify and explain basic construction details and concepts employed in commercial construction.
 6. Identify and calculate the floor area of each room in a floor plan.

- B. Identify and describe types of materials, safety, types of roofing applications.
 7. Identify the materials and methods used in roofing.
 8. Explain the safety requirements for roof jobs.
 9. Install fiberglass shingles on gable and hip roofs.
 10. Close up a valley using fiberglass shingles.
 11. Explain how to make various roof projections watertight when using fiberglass shingles.
 12. Complete the proper cuts and install the main and hip ridge caps using fiberglass shingles.
 13. Lay out, cut, and install a cricket or saddle.
 14. Install wood shingles and shakes on roofs.
 15. Describe how to close up a valley using wood shingles and shakes.
 16. Explain how to make roof projections watertight when using wood shakes and shingles.
 17. Complete the cuts and install the main and hip ridge caps using wood shakes/shingles.
 18. Demonstrate the techniques for installing other selected types of roofing materials.

- C. Identify and describe the types of insulation, vapor barriers, thermal and moisture protection wraps.
 19. Describe the requirements for insulation.
 20. Describe the characteristics of various types of insulation material.
 21. Calculate the required amounts of insulation for a structure.
 22. Install selected insulation materials.
 23. Describe the requirements for moisture control and ventilation.

24. Install selected vapor barriers.
 25. Describe various methods of waterproofing.
 26. Describe air infiltration control requirements.
 27. Install selected building wraps.
- D. Identify and describe types of exterior finishing, and siding.
28. Describe the purpose of wall insulation and flashing.
 29. Install selected common cornices.
 30. Demonstrate lap and panel siding estimating methods.
 31. Describe the types and applications of common wood siding.
 32. Describe fiber-cement siding and its uses.
 33. Describe the types and styles of vinyl and metal siding.
 34. Describe the types and applications of stucco and masonry veneer finishes.
 35. Describe the types and applications of special exterior finish systems.
 36. Install three types of siding commonly used in your area.
- E. Identify and describe the types of cold-formed steel framing, tools, and walls.
37. Identify the components of a steel framing system.
 38. Identify and select the tools and fasteners used in a steel framing system.
 39. Identify applications for steel framing systems.
 40. Demonstrate the ability to build back-to-back, box, and L-headers.
 41. Lay out and install a steel stud structural wall with openings to include bracing and blocking.
 42. Lay out and install a steel stud non-structural wall with openings to include blocking and bracing.
- F. Identify and describe the types of drywall, installation, and fasteners.
43. Identify the different types of drywall and their uses.
 44. Select the type and thickness of drywall required for specific installations.
 45. Select fasteners for drywall installation.
 46. Explain the fastener schedules for different types of drywall installations.
 47. Perform single-layer and multi-layer drywall installations using different types of fastening systems, including:
 - Nails
 - Drywall screws
 - Adhesives
 48. Install gypsum drywall on steel studs.
 49. Explain how soundproofing is achieved in drywall installations.
 50. Estimate material quantities for a drywall installation.
- G. Identify and describe the levels of drywall finishing, problems and damage.
51. State the differences between the six levels of finish established by industry standards and distinguish a finish level by observation.
 52. Identify the hand tools used in drywall finishing and demonstrate the ability to use these tools.
 53. Identify the automatic tools used in drywall finishing.
 54. Identify the materials used in drywall finishing and state the purpose and use of each type of material, including:

Compounds

Joint reinforcing tapes

Trim material

Textures and coatings

55. Properly finish drywall using hand tools.
 56. Recognize various types of problems that occur in drywall finishes; identify the causes and correct methods for solving each type of problem.
 57. Patch damaged drywall.
- H. Identify and describe the types of doors and door hardware, tools and hang a door.
58. Identify various types of door jambs and frames and demonstrate the installation procedures for placing selected door jambs and frames in different types of interior partitions.
 59. Identify different types of interior doors.
 60. Identify different types of interior door hardware and demonstrate the installation procedures for selected types.
 61. Demonstrate the correct and safe use of the hand and power tools described in this module.
 62. List and identify specific items included on a typical door schedule.
 63. Demonstrate the procedure for placing and hanging a selected door.
- I. Identify and describe terms used in suspended ceilings, layout, and materials.
64. Establish a level line.
 65. Explain the common terms related to sound waves and acoustical ceiling materials.
 66. Identify the different types of suspended ceilings.
 67. Interpret plans related to ceiling layout.
 68. Sketch the ceiling layout for a basic suspended ceiling.
 69. Perform a material takeoff for a suspended ceiling.
 70. Install selected suspended ceilings.
- J. Identify and describe types of window, door, floor, and ceiling trim, fasteners, and materials.
71. Identify the different types of standard moldings and describe their uses.
 72. Make square and miter cuts using a miter box or power miter saw.
 73. Make coped joint cuts using a coping saw.
 74. Select and properly use fasteners to install trim. Install interior trim, including:
 - Door trim
 - Window trim
 - Base trim
 - Ceiling trim
 75. Estimate the quantities of different trim materials required for selected rooms.
- K. Identify and describe the types of cabinets, installation, and hardware.
76. State the classes and sizes of typical base and wall kitchen cabinets.
 77. Identify the cabinet components and hardware and describe their purposes.
 78. Lay out factory-made cabinets, countertops, and backsplashes.
 79. Explain the installation of an island base.
- L. Identify and describe types of cabinets, fabrication, and drawings.

80. Recognize the common types of woods used to make cabinets.
 81. Correctly and safely use stationary power tools.
 82. Identify and cut the various types of joints used in cabinetmaking.
 83. Build a cabinet from a set of drawings.
 84. Install plastic laminate on a countertop core.
- M. Identify and describe sound environmental practices for carpentry, including waste disposal, life cycle analysis, green practices and low impact.
85. Describe waste disposal methods for this industry according to EPA and industry guidelines.
 86. Describe the process of life cycle analysis in this industry based on industry guidelines.
 87. Identify recycled materials by label and industry practice.
 88. Define “low emission” and give two examples.
 89. Identify new “green” materials now being introduced or currently used in this industry.
 90. Describe new “green” practices and methods being instituted or currently employed within this industry.
 91. 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>.