

DESE Model Curriculum

GRADE LEVEL/COURSE TITLE: Carpentry, Introductory Craft Skills –
Module 27106-06 Wall and Ceiling Framing

Course Code:

COURSE INTRODUCTION:

17003 Carpentry

Carpentry courses provide information related to the building of wooden structures, enabling students to gain an understanding of wood grades and construction methods and to learn skills such as laying sills and joists; erecting sills and rafters; applying sheathing, siding, and shingles; setting door jambs; and hanging doors. Carpentry courses may teach skills for rough construction, finish work, or both. Students learn to read blueprints, draft, use tools and machines properly and safely, erect buildings from construction lumber, perform finish work inside of buildings, and do limited cabinet work. Carpentry courses may also include career exploration, good work habits, and employability skills.

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| UNIT (#) TITLE: Carpentry, Introductory Craft Skills (27106-06) – Wall and Ceiling Framing [This module introduces the carpentry trainee to the materials and general procedures used in wall and ceiling framing.] | | | SUGGESTED UNIT TIMELINE: CLASS PERIOD (min.): | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------|----------------------------------------------------------------|----------------------------------------------------------------|----------|---------|
| ESSENTIAL QUESTIONS: 1. What structural features are required of wall and ceiling systems? 2. How can different construction methods work best for different types of walls and ceilings? | | | | | | |
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| ESSENTIAL MEASURABLE LEARNING OBJECTIVES | CCSS LEARNING GOALS (Anchor Standards/Clusters) | CROSSWALK TO STANDARDS | | | | |
| | | GLEs/CLEs | PS | CCSS | OTHER | DOK |
| 1. Identify the components of a wall and ceiling layout. | | | | RST 11-12.2, N-Q 1, N-Q 2, N-Q 3, G-CO 12 | 27106-06 | Level 1 |
| 2. Describe the procedure for laying out a wood frame wall, including plates, corner posts, door and window openings, partition Ts, bracing, and firestops. | | | | G-C0 2, G-CO 4, G-CO12, G-SRT 2, G-GMD 4, G-MG 3 | 27106-06 | Level 1 |
| 3. Describe the correct procedure for assembling and erecting an exterior wall. | | | | RST 11-12.3 | 27106-06 | Level 1 |
| 4. Identify the common materials and methods used for installing sheathing on walls. | | | | RST 11-12.3 | 27106-06 | Level 1 |
| 5. Lay out, assemble, erect, and brace exterior walls for a frame building. | | | | RST 11-12.3, G-C0 2, G-CO 4, G-CO 12, G-SRT 2, G-GMD 4, G-MG 3 | 27106-06 | Level 2 |
| 6. Describe wall-framing techniques used in masonry construction. | | | | RST 11-12.3, RST 11-12.3 | 27106-06 | Level 1 |
| 7. Explain the use of metal studs in wall framing. | | | | RST 11-12.3 | 27106-06 | Level 1 |
| 8. Describe the correct procedure for laying out ceiling joists. | | | | RST 11-12.3, G-C0 2, G-CO 4, G-CO 12, G-SRT 2, G-GMD 4, G-MG 3 | 27106-06 | Level 1 |

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| 9. Cut and install ceiling joists on a wood frame building. | | | | | 27106-06 | Level 2 |
| 10. Estimate the materials required to frame walls and ceilings | | | | WHST 11-12.6, A-CED 4, A-REI 1, S-ID 6c, S-ID 7 | 27106-06 | Level 2 |
| ASSESSMENT DESCRIPTIONS*: (Write a brief overview here. Identify Formative/Summative. Actual assessments will be accessed by a link to PDF file or Word doc.) | | | | | | |
| *Attach Unit Summative Assessment, including Scoring Guides/Scoring Keys/Alignment Codes and DOK Levels for all items. Label each assessment according to the unit descriptions above (i.e., Grade Level/Course Title/Course Code, Unit #). | | | | | | |
| Obj. # 1-10 | INSTRUCTIONAL STRATEGIES (research-based): (Teacher Methods) <input checked="" type="checkbox"/> Direct <input type="checkbox"/> Indirect <input type="checkbox"/> Experiential <input type="checkbox"/> Independent Study <input type="checkbox"/> Interactive Instruction | | | | | |
| Obj. # 1-10 | INSTRUCTIONAL ACTIVITIES: (What Students Do) 1. 2. 3. | | | | | |
| UNIT RESOURCES: (include Internet addresses for linking) (MCCE Resource) TE DVD ROM 10 Deconstruction: The Science of Building a House-Foundation to Roof Discovery Channel University LAWRENCEVILLE, NJ, SHOPWARE, 2004. DVD ROM This video highlights scientific aspects of concrete, steel, wood, and nails, and the forces that impact them. Experiments done on the building site and at materials testing labs investigate the strengths of concrete, rebar, and engineered lumber; the chemical properties of Portland cement and galvanized nails; and the effects of dead load and live load, torque and shear induced by wind and earthquakes, and Bernoulli's Principle as it relates to the effects of tornadoes on roofs. Microscope and infrared imaging plus animations give extra angles of insight. So do field trips to a concrete | | | | | | |

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batch plant, a tree farm to study silviculture, and a saw mill to see how computerized cutting and sorting are done. 50 minutes.

(MCCE Resource) T&I DVD ROM 10

Building Construction: Fundamentals

CEV Multimedia

LUBBOCK, TX, CEV MULTIMEDIA, 2003.

DVD ROM This presentation includes how to layout plates, make corners and tees, construct wall units, partitions, window and door units and headers. Step-by-step instructions are provided for cutting ceiling joists and rafters with demonstrations on proper techniques for some of the more exacting procedures (“lipping” a joist, cutting a “birdsmouth,” marking a ridgeboard and assembling the rafters) necessary for beginning builders. During completion of the 16’ X 10’ portable building, you will learn proper techniques for laying a roof with discussions and demonstrations of the following roof construction steps: laying the roof deck, attaching metal flashing along the edges, rolling out and laying the roofing felt, marking the felt to prepare it for the asbestos shingles, and cutting a nailing composition shingles in an effective method and pattern. 160 min, 4 sections, 1 printable resource and 17 Web resources.