



Alabama Department of Postsecondary Education

Representing the Alabama Community College System

STATEWIDE CAREER/TECHNICAL EDUCATION COURSE ARTICULATION REVIEW MINUTES

Articulation Agreement Identifier: CAR 131 & CAR 133 (2006-1) Identifier is the postsecondary course prefix followed by Plan-of-Instruction version number (e.g.; INT 100 (2005-1)).

Applicable CIP code(s): 46.0201

Postsecondary course prefix, number, and title: CAR 131 Roof and Ceiling Systems & CAR 133 Roof and Ceiling Systems Lab

Secondary Education course(s) title and number: 430112/410007 - Construction Framing OR 431306/430035 - Carpentry for Residential Exteriors + 431302/430031 - Carpentry II

Initial Review: January 21, 2010 Annual DPE Review: February 9, 2012

Effective date: **Fall Semester 2011.**

Course Content Analysis (all postsecondary course objectives must be sufficiently addressed in the secondary courses):

Notes:

- 1 Skills and knowledge contained in the postsecondary course objectives must be present in the corresponding secondary objectives for a “match” to occur.**
- 2. Postsecondary and Secondary objectives must reflect similar content and performance levels before the course articulation agreement will be recommended to the TEDAC Oversight Committee.**
- 3. More than one Secondary course may be used in order to articulate to a Postsecondary course.**

Postsecondary Course Objectives	Secondary Courses and Location(s)	TEDAC Comments
<p><u>Module A CAR 131</u></p> <p>Competency Comprehend the process for framing a ceiling.</p> <p>Objective</p> <ul style="list-style-type: none"> • Identify the components of a basic ceiling layout. • Describe the correct procedure for laying out a basic ceiling. • Identify the different types of basic ceiling framing. • Explain how to cut and install ceiling joists. • Identify the various types of special ceiling framing. <p><u>Module A CAR 133</u></p> <p>Competency Frame and install ceilings.</p> <p>Objectives</p> <ul style="list-style-type: none"> • Perform a basic ceiling layout. • Frame and install a basic ceiling. • Cut and install ceiling joists. • Perform a layout for special ceilings. • Frame and install a special ceiling. 	<p><u>Construction Framing, Unit 10, Ceiling Framing Content Standard</u></p> <p>10. Design a ceiling framing system for a structure.</p> <ul style="list-style-type: none"> • Demonstrating the installation of ceiling joists • Explaining the use of headers in two-story structures • Demonstrating the installation of rough openings for stairs, attic access, and chimneys <p><u>Learning Objective</u></p> <ol style="list-style-type: none"> 1. Layout and design a ceiling framing system. 2. Identify the components of a ceiling layout. 3. Describe the correct procedure for laying out ceiling joists. 4. Layout, cut, and installs ceiling joists on a wood frame building. 5. Install rough openings for stairs, attic access, and chimneys. <p><u>OR</u></p> <p><u>Carpentry II, Unit 5-10, Wall & Ceiling Framing Content Standard</u></p> <ol style="list-style-type: none"> 5. Identify components of a wall and ceiling layout. 6. Identify common materials and methods used for installing sheathing on walls. 7. Construct exterior walls for a frame building, including laying out, assembling, erecting, and bracing to specifications. 	

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	<p>8. Demonstrate wall framing techniques used in masonry construction.</p> <p>9. Demonstrate the installation of ceiling joists on a wood frame building according to specifications.</p> <p>10. Calculate an estimate of materials required to frame walls and ceilings.</p> <p><u>Learning Objectives</u></p> <p>1. Measure and layout dimensions for wall and ceiling frame components.</p> <p>2. Identify and select correct materials and construction processes/methods for applying wall sheathing.</p> <p>3. Construct and assemble exterior (load-bearing) walls per wood frame specifications.</p> <p>4. Calculate dimensions for elevations and wall frame spacing on interior and exterior concrete block walls.</p> <p>5. Measure, layout, and assemble ceiling joists according to drawings and specifications.</p> <p>6. Calculate material quantities required for wall and ceiling frame systems using computer software, construction drawings, and specifications.</p>	

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<p><u>Module B CAR 131</u></p> <p>Competency Comprehend the process for framing a roof.</p> <p>Objective</p> <ul style="list-style-type: none"> • Understand the terms associated with roof framing. • Identify the different types of roofs used in roof framing. • Identify and describe various tools essential for roof layout and framing. • Describe the basic procedures for laying out and framing a roof. • Identify the roof framing components used in basic roofs. • Describe how to layout and frame a gable roof. • Describe how to layout and frame a hip roof. • Describe the framing process for a metal roof. • Describe how to layout and frame hips and valleys. • Identify and calculate the length of a rafter using various methods. • Describe how to install rafters. • Identify the various types of trusses used in roof framing. • Explain how to install a truss. • Explain the construction of Dormers. • Describe how to frame different roof openings. • Explain the use of roof projections and their construction. • Describe roof decking installation and preparation. 	<p><u>Carpentry II, Unit 11-16, Roof Framing</u> <u>Content Standard</u></p> <ol style="list-style-type: none"> 11. Demonstrate methods used to calculate the length of a rafter. 12. Identify various types of trusses used in roof framing. 13. Construct framing for a gable roof with vent openings according to specifications. 14. Construct framing for a roof opening according to specifications. 15. Use trusses to erect a gable roof according to specifications. 16. Estimate materials used in framing and sheathing a roof. <p><u>Learning Objective</u></p> <ol style="list-style-type: none"> 1. Explain terms associated with roof framing systems. 2. Identify roof framing components. 3. Describe methods used to determine rafter lengths. 4. Identify various types of roof systems. 5. Estimate material quantities for roof framing members and sheathing. <p><u>OR</u></p> <p><u>Construction Framing, Unit 14-16, Roof Framing</u> <u>Content Standard</u></p> <ol style="list-style-type: none"> 14. Identify types of roofs used on structures. Examples: hip, gable, gambrel, shed 15. Compare conventional and truss roof systems for structures. • Laying out common, hip, and valley rafters 	

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<p><u>Module B CAR 133</u></p> <p>Competency Frame and install roofs.</p> <p>Objectives</p> <ul style="list-style-type: none"> • Demonstrate use of various roofing tools. • Perform a layout for various roofs. • Perform framing for various types of roofs. • Demonstrate installation of trusses. • Install roof openings and roof projections. • Demonstrate installation of roof decking. 	<ul style="list-style-type: none"> • Laying out a truss using a framing square • Demonstrating the installation of rough openings for vents, skylights, and chimneys <p>16. Compare various decking materials for roof systems. Examples: tongue and groove plywood, plywood, oriented strand board</p> <p><u>Learning Objective</u></p> <ol style="list-style-type: none"> 1. Identify and describe roof types. 2. Describe the difference between truss and stick framing roof structures. 3. Demonstrate methods for laying out hip and valley rafters. 4. Layout a truss using a framing square. 5. Install rough openings for vents, skylights, and chimneys. 6. Identify various decking materials for roof systems. 	
<p><u>Module C CAR 131</u></p> <p>Competency Comprehend the process for installing roofing applications.</p> <p>Objective</p> <ul style="list-style-type: none"> • Identify various types of flashing. • Describe the process of flashing installation. • Describe the process of installing ridge caps. 	<p><u>Carpentry for Residential Exteriors, Unit 9-18, Roofing Applications Content Standard</u></p> <ol style="list-style-type: none"> 9. Identify materials and methods used in roofing. <ul style="list-style-type: none"> • Illustrating various roofing methods 10. Explain safety requirements for roof applications. 11. Demonstrate the installation of fiberglass shingles on 	

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<ul style="list-style-type: none"> • Explain the process for installing crickets and saddles. • Describe the process of applying asphalt and/or fiberglass shingles to various roofs. • Explain the process of applying metal finishes to various roofs. • Explain the process of applying other roofing finishes such as wood shakes, slate, and tile. <p>Module C CAR 133</p> <p>Competency Install roofing applications.</p> <p>Objectives</p> <ul style="list-style-type: none"> • Install flashing. • Install ridge caps. • Demonstrate installation of crickets and saddles. • Install various roofing finishes. 	<p>gable and hip roofs.</p> <ol style="list-style-type: none"> 12. Demonstrate closing valley using fiberglass shingles. 13. Demonstrate procedures used to make roof projections watertight, including fiberglass shingles and wood shingles. 14. Demonstrate the installation of the main and hip ridge caps using fiberglass shingles. 15. Demonstrate the layout, cutting, and installation of a cricket or saddle. 16. Install wood shingles and shakes on roofs. 17. Describe how to close a valley using wood shingles and shakes. 18. Demonstrate the installation of the main and hip ridge caps using wood shakes or shingles. <p><u>Learning Objective</u></p> <ol style="list-style-type: none"> 1. Determine proper materials and methods for different types of roof systems. 2. Assemble various types of roof applications using different methods. 3. Produce OSHA safety fact sheets regarding roof construction safety requirements. 4. Construct a fiberglass roofing system for gable and hip roofs. 5. Demonstrate the proper method for valley closing on fiberglass shingles. 6. Layout, cut, and constructs a cricket on a roofing system. 7. Layout, cut, and constructs a saddle on a roofing system. 	

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	<p>8. Demonstrate proper installation of wood shingles and shakes on a roofing system. 9. Properly close a valley using wood shingles and shakes. 10. Install main and hip ridge caps using wood shakes and shingles.</p> <p><u>OR</u></p> <p><u>Construction Framing, Unit 17-18, Roofing Materials Content Standard</u></p> <p>17. Describe types of materials used for roof systems. Examples: felt, shingles, metal roofing, roll roofing 18. Demonstrate the installation of roofing materials.</p> <p><u>Learning Objective</u></p> <p>1. Identify different types of materials used for roof systems. 2. Install fiberglass shingles. 3. Install wood shingles and shakes. 4. Describe water-proofing methods used on a variety of roof projections.</p>	