Alabama Department of Postsecondary Education

Representing the Alabama Community College System

STATEWIDE CAREER/TECHNICAL EDUCATION COURSE ARTICULATION REVIEW MINUTES

Articulation Agreement Identifier: CAR 112 & CAR 113 (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 112 Floors, Walls, and Site Prep & CAR 113 Floors, Walls, and Site Prep Lab

Secondary Education course(s) title and number: 431301/430030 - Carpentry I + 431302/430031 - Carpentry II **OR** 430111/410006 - Construction Site Preparation and Foundations + 430112/410007 - Construction Framing

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.**

Articulation Agreement Identifier: CAR 112 & CAR 113

Postsecondary Course Objectives	Secondary Courses and Location(s)	TEDAC Comments
Module A CAR 112 **Competency** Demonstrate knowledge of site preparation. **Objectives** • Describe the major responsibilities of the carpenter relative to site layout. • Explain how to convert measurements stated in feet and inches to equivalent measurements stated in decimal feet and vice versa. • Interpret site/plot drawings. • Explain how to identify building lines, set backs, and control points. • **Module A CAR 113** • Interpret a construction site/plot drawing and relate the man made and topographic features and other project information to the layout and topography of the actual site.	**Carpentry I, Unit 9-11, Reading Plans and Elevations Content Standard** 9. Describe the information found on drawings typically included in a set of construction plans. Examples: lines; architectural abbreviations; electrical, mechanical, and plumbing symbols 10. Interpret plans, elevations, schedules, sections, and details contained in basic construction drawings. 11. Produce a list of materials needed for a specific construction project. **Learning Objective** 1. Create blueprints and working drawings to scale. 2. Produce material specifications from blueprints. 3. Discuss plan components regarding floor plans, elevations, schedules, sections and detail plans. 4. Recognize and identify basic architectural symbols, terms, and drawing components. 5. Relate / transfer blueprint information and dimensions on drawings to actual live-work projects. 6. Identify various plan groups and types of drawing plans. 7. Interpret and use drawing dimensions and trade terms. **OR**	

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	Construction Site Preparation and Foundations Unit 8-9 Structure Location **Content Standard** 8. Identify positive characteristics of a building site. Examples: proper drainage, location, orientation 9. Explain the importance of conducting property surveys for structures, including the location of property and setback lines. **Learning Objective** 1. Discuss topographic features of a building site. 2. Identify components surveys and plot plans. 3. Explain the difference between setback lines and property lines.	
Module A CAR 112 • Explain how to use measuring equipment and procedures to make distance measurements and perform site layout tasks. • Describe how to use a builders level or transit, and differential leveling equipment and procedures to determine site and building elevations. • Explain how to establish and construct batter boards. • Describe how to check and or establish 90 degree angles using the 3/4/5 rule.	**Carpentry I, Unit 12-14, Site Layout – Distance Measuring and Leveling** **Content Standard** 12. Convert measurements state in feet and inches to equivalent measurements stated in decimal feet. • Converting decimal feet to feet and inches 13. Perform site layout tasks for a construction project according to specifications. 14. Use a builder's level and differential leveling techniques to determine site and building elevations. **Learning Objective**	

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Postsecondary Course Objectives	Secondary Courses and Location(s)	TEDAC Comments
Module A CAR 113 • Convert measurements given in feet and inches to equivalent decimal measurements stated in feet, tenths, and hundredths, and vice versa. • Properly use measurement equipment and procedures to determine distance and site layout measurements. • Set up, adjust and field test a leveling instrument. • Use a leveling instrument to determine site and building elevations. • Establish and construct batter boards. • Use leveling and distance measurement procedures to transfer elevations. • Check for square and/or establish 90 degree angles using the 3/4/5 rule.	1. Understand the metric system. 2. Comprehend conversion tables. 3. Explain building site layout process. 4. Demonstrate set-up, use, and care of builders level. 5. Convert measurements stated in feet and inches to equivalent measurements stated in decimal feet. 6. Converting decimal feet to feet and inches. 7. Perform site layout task for a construction project according to specifications. 8. Use a builders level and differential leveling techniques to determine site and building elevations. **OR** **Construction Site Preparation and Foundations, Unit 10, Structure Layout** **Content Standard** 10. Demonstrate building layout procedures for a specific structure. Examples: staking, squaring, constructing batter boards, leveling **Learning Objective** 1. Describe layout procedures for a specific structure. 2. Demonstrate proper staking, squaring, construction batter boards, and leveling.	

Articulation Agreement Identifier: CAR 112 & CAR 113

Postsecondary Course Objectives	Secondary Courses and Location(s)	TEDAC Comments
Module A CAR 112 • Explain how to establish footings and other foundation lines. **Module A CAR 113** **Competency** Perform distance measurement and leveling. **Objectives** • Establish footings and other foundation lines.	**Construction Site Preparation and Foundations, Unit 11-12, Foundations** **Content Standard** 11. Explain how to lay out and construct pier, edge, and footing forms. 12. Describe the use of concrete reinforcements in structures. **Learning Objective** 1. Explain how to lay out foundations. 2. Describe piers, edge, and footing forms. 3. Describe reinforcements in structures. **OR** **Carpentry I, Unit 12-14, Site Layout – Distance Measuring and Leveling** **Content Standard** 12. Convert measurements state in feet and inches to equivalent measurements stated in decimal feet. • Converting decimal feet to feet and inches 13. Perform site layout tasks for a construction project according to specifications. 14. Use a builder's level and differential leveling techniques to determine site and building elevations. **Learning Objective** 1. Understand the metric system. 2. Comprehend conversion tables. 3. Explain building site layout process. 4. Demonstrate set-up, use, and care of builders level. 5. Convert measurements stated in feet and inches to equivalent measurements stated in decimal feet.	

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	6. Converting decimal feet to feet and inches. 7. Perform site layout task for a construction project according to specifications. 8. Use a builders level and differential leveling techniques to determine site and building elevations.	
Competency Practice job site safety. **Objectives** • Describe the major factors that lead to job site mishaps.	**Construction Site Preparation and Foundations, Unit 2, Safety** **Content Standard** 2. Demonstrate job-site safety concepts required for site preparation and foundation construction. Examples: personal protection equipment, hand tool safety, power tool safety, electrical safety **Learning Objective** 1. Identify safety concepts for site preparation and foundation construction. 2. Discuss personal safety equipment.	
Module B CAR 112 **Competency**	**Construction Framing, Unit 5-6, Floor Systems** **Content Standard** 5. Compare advantages of concrete flooring systems and wood flooring systems.	

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Demonstrate knowledge of floor installation. **Objectives** • Identify the different types of flooring systems. • Read and understand drawings and specifications to determine floor system requirements. • Identify floor and sill framing and support members. • Describe the method used to fasten sills to the foundations. • Describe the various types of girders and their uses. • Given specific floor load and span data, select the proper joist size from a list of available joists. • Describe the different types of bridging. • Describe different types of flooring materials and describe where and when each would be used. • Explain the purpose of sub flooring and underlayment. • Match selected fasteners used in floor framing to their correct uses. **Module B CAR 113** **Competency** Install floor systems. **Objectives** • Lay out and construct a floor assembly. • Frame floor opening. • Install Bridging. • Install a sub floor using butt-joint plywood/OSB panels.	6. Design a floor framing system for a structure. • Describing the purpose of a sill used in structures • Demonstrating the layout of joist headers and floor joists used in structures • Contrasting various subfloor materials used in structures Examples: tongue and groove plywood, plywood, oriented strand board, shiplap boards • Demonstrating the installation of a subfloor for a structure **Learning Objective** 1. Identify different types of flooring systems. 2. Identify floor and sill framing and support members. 3. List different types of floor joists. 4. Explain the purposes of subflooring and underlayment. 5. Demonstrate the ability to layout and construct a floor assembly. 6. Demonstrate the ability to install a subfloor. **OR** **Carpentry I, Unit 15-18, Floor Systems Content Standard** 15. Interpret drawings and specifications to determine floor system requirements 16. Identify floor and sill framing support members 17. Select proper girder or beam size according to specific floor load and span data • Selecting the proper joist size according to specific	

Postsecondary Course Objectives	Secondary Courses and Location(s)	TEDAC Comments
• Install a single floor system using tongue and groove plywood/OSB panels. **Module C CAR 112** **Competency** Demonstrate knowledge of wall framing. **Objectives** • Explain the various types of wall framing. • Identify components of a wall layout. • Describe the procedure for laying out a wood frame wall, including plates, sills, corner posts, headers, door and window openings, partition Ts, bracing, and fire-stops.	floor load and span data 18. Construct floor system in accordance with drawings and specifications • Calculating an estimate for materials needed to frame a floor assembly **Learning Objective** • Identify various types of floor framing systems • Comprehend drawings and specifications regarding floor framing systems • Identify floor framing components • Determine types of floor / foundation anchors and fasteners • Understand load and span data tables • List purpose and types of floor system materials and underlayment • Estimate material quantities for various floor system designs **Carpentry II, Unit 5-10 Wall and Ceiling Framing Content Standard** 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. 8. Demonstrate wall framing techniques used in masonry construction. 9. Demonstrate the installation of ceiling joists on a wood frame building according to specifications.	

Postsecondary Course Objectives	Secondary Courses and Location(s)	TEDAC Comments
Competency Comprehend the installation of wall systems. **Objectives** • Describe the correct procedure for erecting an exterior wall. • Describe the correct procedure for erecting an interior wall. • Describe common materials and methods used for installing sheathing on walls. **Module C CAR 113** **Competency** Frame walls. **Objectives** • Lay out, assemble, and brace exterior walls for a frame building. • Lay out, assemble, and brace interior walls for a frame building. **Competency** Erect walls. **Objectives** Erect a complete wall, including corners, intersections, door and window openings.	10. Calculate an estimate of materials required to frame walls and ceilings. **Learning Objective** 1. Measure and layout dimensions for wall and ceiling frame components. 2. Identify and select correct materials and construction processes/methods for applying wall sheathing. 3. Construct and assemble exterior (load-bearing) walls per wood frame specifications. 4. Calculate dimensions for elevations and wall frame spacing on interior and exterior concrete block walls. 5. Measure, layout, and assemble ceiling joists according to drawings and specifications. 6. Calculate material quantities required for wall and ceiling frame systems using computer software, construction drawings, and specifications. **OR** **Construction Framing, Unit 7-9, Wall Framing Content Standard** 7. Design a wall framing system for a structure. • Comparing the use of wood and metal wall framing components • Describing the use of a sole plate in structures • Demonstrating the construction of corner posts with and without blocking • Demonstrating the use and installation of full, cripple, and trimmer studs	

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	• Demonstrating the installation of a double top plate in structures • Demonstrating the installation of rough openings for doors and windows, including headers • Demonstrating techniques for bracing a wall 8. Compare various wall sheathing materials for structures. Examples: foam board, oriented strand board, insulating board, plywood 9. Explain the importance of vapor barriers used in wall framing. • Comparing the advantages of using plastic and building felt as vapor barriers in walls **Learning Objective** 1. Describe the advantages of wood wall framing. 2. Describe the advantages of metal wall framing. 3. Describe the purpose of a sole plate in structures. 4. Construct corner posts with and without blocking. 5. Install full, cripple, and trimmer studs and explain their use. 6. Construct and install a double top plate. 7. Construct rough openings for doors and windows, including headers. 8. Demonstrate the proper method to brace a wall. 9. Identify and describe wall sheathing materials for structures. 10. Describe the importance of vapor barriers. 11. Discuss the differences in plastic and building felt as vapor barriers in walls.	