



Alabama Department of Postsecondary Education

Representing the Alabama Community College System

STATEWIDE CAREER/TECHNICAL EDUCATION COURSE ARTICULATION REVIEW MINUTES

Articulation Agreement Identifier: BUC 110 (2007-1) Identifier is the postsecondary course prefix followed by Plan-of-Instruction version number (e.g.; INT 100 (2007-1)).

Applicable CIP code(s): 46.0499

Postsecondary course prefix, number, and title: BUC 110 Basic Construction Tools and Materials

Secondary Education course(s) title and number: 430901/430004 - Architecture, Construction & Manufacturing + 431301/430030 - Carpentry I OR 430901/430004 - Architecture, Construction & Manufacturing + 430112/410007 - Construction Framing

Initial Review: February 25, 2010 Annual DPE Review: January 30, 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 Objectives and Location(s)	TEDAC Comments
<p>A1.0 Explain and use basic safety principles in the work environment.</p> <p>A1.1 This competency is measured cognitively.</p> <p>A1.2 Properly inspect and don personal protective equipment (PPE).</p> <p>A1.1.1 Explain the importance of safety and its role in the construction industry.</p> <p>A1.1.2 Describe what job site and shop safety means.</p> <p>A1.1.3 Explain the appropriate safety precautions around common job site hazards.</p> <p>A1.1.4 Describe safe behavior around ditches and open trenches.</p> <p>A1.1.5 Explain appropriate shoring methods.</p> <p>A1.1.6 Discuss appropriate ventilation precautions when working in confined spaces.</p> <p>A1.1.7 Explain the importance of HAZCOM and MSDSs.</p> <p>A1.1.8 Identify specified information on an MSDS.</p> <p>A1.1.9 Describe safe behavior on and around ladders and scaffolds.</p> <p>A1.1.10 Describe fire prevention and fire safety.</p> <p>A1.1.11 Explain safe work procedures around electrical hazards.</p> <p>A1.1.12 Describe how to safely lift specified equipment and materials.</p> <p>A1.2.1 Identify common personal protective equipment.</p> <p>A1.2.2 Describe various personal protective equipment uses.</p>	<p><u>Architecture, Construction, and Manufacturing, Unit 5, Workplace Safety and OSHA Content Standard</u></p> <p>5. Practice safety standards in the work environment.</p> <p><u>Learning Objectives</u></p> <p>1. Discuss the history of OSHA.</p> <p>2. Discuss the importance of OSHA in the workplace.</p> <p><u>Architecture, Construction, and Manufacturing, Unit 11, Occupational Safety and Health Administration 10-Hour Credential Content Standard</u></p> <p>11. Explain the role that safety plays in the architecture, construction, and manufacturing industries, including completing requirements for the Occupational Safety and Health Administration 10-hour construction course credential.</p> <p><u>Learning Objectives</u></p> <p>1. Explain the role that safety plays in the construction crafts.</p> <p>2. Describe the meaning of job-site safety.</p> <p>3. Describe the characteristics of a competent person and a qualified person.</p> <p>4. Explain the appropriate safety precautions to take around common job-site hazards.</p> <p>5. Demonstrate the use and care of appropriate personal protective equipment (PPE).</p> <p>6. Properly don and remove personal protective equipment (safety goggles, hard hat, and personal fall protection).</p> <p>7. Follow the safety procedures required for lifting heavy objects.</p> <p>8. Describe safe behavior on and around ladders and scaffolds.</p> <p>9. Explain the importance of Hazard Communications (HazCom) and material safety data sheets (MSDSs).</p>	

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<p>B1.0 Explain the uses of and use Hand and Power Tools.</p> <p>B1.1 Demonstrate the safe and appropriate use of various hand tools.</p> <p>B1.2 Demonstrate safe and appropriate use of various power tools.</p> <p>B1.1.1 Identify the hand tools commonly used on a construction site and describe their uses.</p> <p>B1.1.2 Describe the safe and appropriate use and maintenance of various hand tools.</p> <p>B1.2.1 State the general safety rules for operating all power tools, regardless of type.</p> <p>B1.2.2 Identify the portable power tools commonly used by construction trades and describe their uses.</p> <p>B1.2.3 Identify the stationary power tools commonly used by construction trades and describe their uses.</p> <p>B1.2.4 Describe the safe and appropriate use and maintenance of various portable power tools.</p> <p>B1.2.5 Explain the safe and appropriate use and maintenance of various stationary power tools.</p>	<p>10. Describe fire prevention and firefighting techniques. 11. Define safe work procedures to use around electrical hazards.</p> <p><u>Architecture, Construction, and Manufacturing, Unit 13, Hand Tools & Power Tools</u></p> <p><u>Content Standard</u></p> <p>13. Demonstrate correct use of hand tools and power tools utilized in the architecture, construction, and manufacturing industry.</p> <p><u>Learning Objectives</u></p> <p>1. Recognize and identify some of the basic hand tools used in the construction trade. 2. Use hand tools safely. 3. Describe the basic procedures for taking care of hand tools. 4. Identify power tools commonly used in the construction trades. 5. Use power tools safely. 6. Explain how to maintain power tools properly. 7. Visually inspect the following tools to determine if they are safe to use:</p> <ul style="list-style-type: none"> • Hammer • Screwdriver • Saw <p>8. Make a straight square cut using a crosscut saw. 9. Safely and properly use the following tools:</p> <ul style="list-style-type: none"> • Hammer and cat's paw (to drive and pull nails) 	

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	<ul style="list-style-type: none"> • Screwdriver (slotted and Phillips) • Adjustable wrench • Channellock® pliers • Spirit level • Carpenter's square and steel tape • Saw • Assorted pliers • Open and closed end wrenches <p>10. Safely and properly operate an electric drill. 11. Safely and properly operate a circular saw. 12. Safely and properly operate a bench grinder. 13. Safely and properly operate a portable belt sander. 14. Safely and properly operate a pneumatic power nailer.</p> <p><u>OR</u></p> <p><u>Carpentry I, Unit 2, Hand & Power Tools</u></p> <p><u>Content Standard</u></p> <p>2. Demonstrate the proper use of hand and power tools used in carpentry.</p> <p><u>Learning Objectives</u></p> <p>1. Obtain safe operation skills regarding tools and equipment. 2. Identify hand and power tool functions and applications. 3. Inspect and maintain tools and equipment for safe operation. 4. Accomplish safe hands-on use of tools and equipment. 5. Demonstrate the safe and appropriate use and maintenance of various portable power tools. 6. Demonstrate the safe and appropriate use and maintenance of various stationary power tools. 7. Demonstrate the safe and appropriate use and</p>	

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<p>C1.0 Explain the uses of and use various building materials.</p> <p>C1.1 These objectives are measured cognitively.</p> <p>C1.2 Given a selection of building materials, identify a particular material and demonstrate its use.</p> <p>C1.1.1 Describe the proper safety precautions used with various building materials.</p> <p>C1.1.2 Explain the various terms commonly used in construction.</p> <p>C1.1.3 State the uses of various types of construction materials.</p> <p>C1.1.4 Explain how lumber is graded.</p> <p>C1.1.5 Explain how plywood is manufactured, graded, and used.</p> <p>C1.1.6 Identify various types of building boards and identify their uses.</p> <p>C1.1.7 State the uses of various types of engineered lumber.</p> <p>C1.1.8 Describe the proper method of caring for lumber and wood products on the job site.</p> <p>C1.1.9 Calculate the quantities of lumber and wood products needed using industry-standard methods.</p>	<p>maintenance of various pneumatic power tools. 8. Demonstrate the safe and appropriate use and maintenance of various powder actuated power tools.</p> <p><u>Construction Framing, Unit 3, Grades and Types of Lumber</u> <u>Content Standard</u></p> <p>3. Compare applications of hardwood and softwood lumber used in framing structures.</p> <ul style="list-style-type: none"> • Identifying grades of lumber Examples: appearance grade, timber grade, dimension grade • Identifying defects that affect lumber grade Examples: knot, wane, split, check, warp <p><u>Learning Objective</u></p> <ol style="list-style-type: none"> 1. Describe the uses of various types of hardwoods and softwoods. 2. Identify the different grades and markings of wood building materials. 3. Describe the proper method of storing and handling building materials. 4. Identify and describe defects. <p><u>OR</u></p> <p><u>Carpentry I, Unit 3 & 4, Building Materials, Fasteners, and Adhesives</u> <u>Content Standard</u></p>	

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<p>D1.0 Explain various functions of fasteners and adhesives and use them appropriately.</p> <p>D1.1 Select and demonstrate the appropriate use of fasteners for various applications.</p> <p>D1.2 Select and demonstrate the appropriate use of adhesives for various applications.</p> <p>D1.1.1 Explain the safety precautions used for various types of fasteners and adhesives.</p> <p>D1.1.2 Identify the various types of fasteners used in construction work.</p> <p>D1.1.3 Explain the use of various types of fasteners and their application.</p> <p>D1.2.1 Identify the various types of adhesives used in construction work.</p> <p>D1.2.2 Explain the use of various types of adhesives and their application.</p> <p>D1.2.3 Describe appropriate precautions when working with adhesives.</p>	<p>3. Calculate quantities of lumber and wood products using industry-standard methods.</p> <p>4. Install fasteners, anchors, and adhesives used in carpentry.</p> <p><u>Learning Objectives</u></p> <p>1. Calculate / Estimate material quantities of materials from prints or working drawings.</p> <p>2. Read and interpret plans.</p> <p>3. Determine Material Specifications.</p> <p>4. Assemble, fabricate, install, and construct using fasteners, anchors, and adhesives in accordance with drawings.</p> <p><u>Construction Framing, Unit 5&6, Floor Framing Content Standard</u></p> <p>5. Compare advantages of concrete flooring systems and wood flooring systems.</p> <p>6. Design a floor framing system for a structure.</p> <ul style="list-style-type: none"> • 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 <p>Examples: tongue and groove plywood, plywood, oriented strand board, shiplap boards</p> <ul style="list-style-type: none"> • Demonstrating the installation of a subfloor for a structure <p><u>Learning Objectives</u></p>	

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	<p>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.</p> <p><u>Construction Framing, Unit 7&8, Wall Framing Content Standard</u></p> <p>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 • 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</p> <p>8. Compare various wall sheathing materials for structures.</p> <p>Examples: foam board, oriented strand board, insulating board, plywood</p> <p><u>Learning Objective</u></p> <p>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.</p>	

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	<p>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.</p> <p><u>OR</u></p> <p><u>Carpentry I, Unit 3 & 4,</u> <u>Building Materials, Fasteners, and Adhesives</u> <u>Content Standard</u></p> <p>3. Calculate quantities of lumber and wood products using industry-standard methods. 4. Install fasteners, anchors, and adhesives used in carpentry.</p> <p><u>Learning Objectives</u></p> <p>1. Calculate / Estimate material quantities of materials from prints or working drawings. 2. Read and interpret plans. 3. Determine Material Specifications. 4. Assemble, fabricate, install, and construct using fasteners, anchors, and adhesives in accordance with drawings.</p>	