Multiple Category Scope and Sequence: Scope and Sequence Report For Course Standards and Objectives, Content, Skills, Vocabulary

Wednesday, August 20, 2014, 1:50PM

	Unit	Course Standards and Objectives	Content	Skills	Vocabulary
District Basic **Carpentry 1 (46.0201) (District)** 2014-2015 **Collaboration**	**Orientation** (Week 1, 1 Week)		Students will discover what opportunities await them and how this could direct their career choices.	Explain the different careers in Construction Evaluate the levels of pay and responsibility involved in the hierarchy of job levels.	Trades Carpentry General Contracting Skills Applied Math
	power tools and hand tools (Week 1, 1 Week)	UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Carpentry 2 Standard 03 Students will be able to understand and demonstrate the safe use of hand and power tools. ▪ Objective 0301 Identify the hand tools commonly used by carpenters and describe their uses. ▪ Objective 0302 Use hand tools in a safe and appropriate manner. ▪ Objective 0303 State the general safety rules for operating all power tools, regardless of type. ▪ Objective 0304 State the general rules for properly maintaining all power tools, regardless of type. ▪ Objective 0305 Identify the portable power tools commonly used by carpenters and describe the uses. ▪ Objective 0306 Use potable power tools in a safe and appropriate manner.	HOW TO SAFELY AND EFFECTIVELY USE THESE HAND TOOLS: HAND TOOLS ▪ HAMMER ▪ UTILITY KNIFE ▪ SPEED SQUARE ▪ CATS PAW(NAIL PULLER) ▪ PRY BARS ▪ CARPENTERS SQUARE ▪ Safety comes first. Safe use of tools, jobsite safety. POWER TOOLS ▪ CIRCULAR SAW ▪ MITRE SAW ▪ RECIPROCATING SAW ▪ CORDLESS AND CORDED DRILLS ▪ ELECTRICAL CORDS ▪	Effectively and safely use tools.	All tool names, and parts Drill Saw Powder-actuated tools miter saw circular saw reciprocating saw framing nailer finish nailer router stapler
	safety (Week 1, 1 Week)	UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Carpentry 1 Standard 3	Clothing	Demonstrate and explain	Angle of repose

	Students will be able to understand and demonstrate the safe use of hand and power tools. ▪ Objective 1 Identify the hand tools commonly used by carpenters and describe their uses. a. Hammer, screwdrivers, pliers, chisels, levels, squares, planes, clamps, saws. b. Circular saw, table saw, power miter saws, reciprocating saws, portable sanders, portable drills and screwguns, pneumatic/cordless nailers and staplers, powder-actuated fastening tools ▪ Objective 2 Use hand tools in a safe and appropriate manner. a. Follow all safety precautions in the manufacturer' s instruction manual. b. Always wear safety glasses and other appropriate safety equipment when working with hand and power tools. ▪ Objective 3 State the general safety rules for operating all power tools, regardless of type. ▪ Objective 4 State the general rules for properly maintaining all power tools, regardless of type. ▪ Objective 5 Identify the portable power tools commonly used by carpenters and describe the uses. ▪ Objective 6 Use potable power tools in a safe and appropriate manner.	Personal Protective Equipment Hand tools Power tools Good Housekeeping Decks and floors Excavations Scaffolds and Ladders Falling objects Handling Hazardous Materials Lifting and Carrying Fire Protection First Aid	job safety. Develop a safety plan for our classroom.	Dust Mask Hard hat Pressure treated wood Safety factor Safety glasses
Lot layout and Excavation (Week 1, 2 Weeks)		**Pythagorean Theorem** Plot plans Builders level	Use Pythagorean theorem to find 90 degree corners Find and establish property boundaries and	pythagorean theorem Bench mark building lines

		Elevations Utilities connections	building lines Use a builders level to find elevations	grade leveling laserplane level-transit line of sight plot plan property line
Footings and foundations (Week 2, 2 Weeks)	UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Carpentry 1 Standard 4 Students will be able to understand and demonstrate the uses of concrete and reinforcing materials. ▪ Objective 1 Perform volume estimates for concrete quantity requirements. a. Calculate cubic feet. b. Calculate cubic yards. ▪ Objective 2 Identify types of concrete reinforcement bars and anchors and describe their use. a. Rebar b. Anchor bolt ▪ Objective 3 Identify types of reinforcement bar supports and describe their use. ▪ Objective 4 Recognize four kinds of footings: a. Continuous or spread b. Stepped c. Pier d. Grade beam ▪ Objective 5 Identify the parts of footing forms and explain their purpose. ▪ Objective 6 Identify the parts of pier forms and explain their purpose. ▪ Objective 11 Identify the various types of concrete forms. ▪ Objective 12 Identify the components of each	1 Perform volume estimates for concrete quantity requirements. ▪ a. Calculate cubic feet. ▪ b. Calculate cubic yards. 2 Identify types of concrete reinforcement bars and anchors and describe their use. a. Rebar b. Anchor bolt 3 Identify types of reinforcement bar supports and describe their use. 4 Recognize four kinds of footings: a. Continuous or spread b. Stepped c. Pier d. Grade beam 5 Identify the parts of footing forms and explain their purpose. 6 Identify the parts of pier forms and explain their purpose. 7 Identify the various types of concrete forms. 8 Identify the components of each type of form. 9 Explain the safety procedures associated with using concrete forms. 10 Erect, plumb, and brace selected concrete forms, including: a. Basic wall form with walers and strongbacks	1. Identify the properties of cement. 2. Describe the composition of concrete. 3. Perform volume estimates for concrete quantity requirements. 4. Identify types of concrete reinforcement materials and describe their uses. 5. Identify various types of footings and explain their uses. 6. Identify the parts of various types of forms. 7. Explain the safety procedures associated with the construction and use of concrete forms. 8. Erect, plumb, and brace a simple concrete form with reinforcement.	Admixtures Aggregate Anchor bolts Backfilling Batter Boards Cement Chairs Closure block Concrete blocks Control point Corbel block Course pole Floating Ground supported slab Hydration Ledger boards

	type of form. ▪ Objective 13 Explain the safety procedures associated with using concrete forms. ▪ Objective 14 Erect, plumb, and brace selected concrete forms, including: a. Basic wall form with walers and strongbacks b. Ganged wall form c. Radius wall form d. Column form e. Beam form and shoring f. Stair form	b. Ganged wall form c. Radius wall form d. Column form e. Beam form and shoring f. Stair form		Lintel Mason's line Monolithic concrete Mortar Nailing strips Pilaster Plain footings Reinforced footings Screeding 'Spread foundations Stepped footing Structurally supported slab Troweling Wales
Sub-rough plumbing (Week 3, 2 Weeks)	UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Plumbing 1 Standard 08 Students will be able to understand drain, waste and vent (DWV) Systems. ▪ Objective 0801 Explain how waste moves from a fixture through the drain system to the environment. ▪ Objective 0802 Identify the major components of a drainage system and describe their functions. ▪ Objective 0803 Identify types and parts of traps and explain the importance of traps, and how traps lose their seals.	How the drain lines work in a house.	dig out trenches for the plumbing to grade construct a subrough plumbing system	ABS pipe grade abs glue pipe cutter drainage cleanout

	▪ Objective 0804 Identify the various types of DWV fittings and describe their application.			
Concrete Rienforcement and Forms (Week 4, 2 Weeks)	UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Carpentry 1 Standard 4 Students will be able to understand and demonstrate the uses of concrete and reinforcing materials. ▪ Objective 1 Perform volume estimates for concrete quantity requirements. a. Calculate cubic feet. b. Calculate cubic yards. ▪ Objective 7 Recognize types of concrete pours that require the construction of edge forms: a. Slabs with or without a foundation b. Driveways c. Sidewalks d. Approaches ▪ Objective 9 Explain the purpose of a screed and identify the different types of screeds. ▪ Objective 10 Demonstrate the ability to set screeds on grade. ▪ Objective 12 Identify the components of each type of form.	List ingredient of concrete. What proportions of each ingredient are used? How does concrete benefit you?	Form footings Form flatwork Describe the sequence of placing a concrete slab Describe the sequence of forming a footer Describe the sequence of form a vertical wall, what materials and tools are needed	Form Screed Stakes Flat Work Aggregate Sand Concrete Cement slab
Floor Framing (Week 5, 3 Weeks)	UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Carpentry 1 Standard 5 Students will be able to understand and demonstrate framing of flooring systems, wall and ceilings and roofing systems. ▪ Objective 1 Read and understand drawings and specifications to determine floor system requirements. ▪ Objective 2 Identify floor and sill framing and support members.	How to effectively frame a floor system with current modern methods and materials.	Use Pythagorean theorem to make sure the sill plates are square. By referring to the plans, be able to determine which joists go where on the house. Measure, cut, and install floor joists. Create and build a solid	I-joist sill plate pressure treated wood Squash blocking foundation washers anchor bolts

	▪ Objective 3 Name the methods used to fasten sills to the foundation. ▪ Objective 4 List and recognize different types of floor joists ▪ Objective 5 List and recognize different types of flooring materials. ▪ Objective 6 Explain the purposes of subflooring and underlayment. ▪ Objective 7 Match selected fasteners used in floor framing to their correct uses. ▪ Objective 8 Demonstrate the ability to: a. Layout and construct a floor assembly b. Install joists for a cantilever floor c. Install a single floor system using tongue and groove plywood/OSB panels		tight subfloor on top of the joists.	solid blocking tongue and groove subfloor construction adhesive
Wall Framing (Week 7, 4 Weeks)	UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Carpentry 1 Standard 5 Students will be able to understand and demonstrate framing of flooring systems, wall and ceilings and roofing systems. ▪ Objective 9 Identify the components of a wall and ceiling layout. ▪ Objective 10 Describe the procedure for laying out a wood frame wall, including plates, corner posts, door and window openings, partition T's. bracing, and firestops. ▪ Objective 11 Describe the correct procedure for assembling and erecting an exterior wall. ▪ Objective 12 Describe the common materials and methods used for installing sheathing on walls. ▪ Objective 13 Layout, assemble, erect, and brace exterior walls for a frame	Components of a wall: ▪ bottom plate ▪ top plate ▪ double top plate ▪ stud ▪ king stud ▪ cripple stud ▪ window sill ▪ header(door or window) ▪ trimmer stud ▪ california corner ▪ bearing points ▪ Correct procedure or order for building a wall: ▪ Read plans and determine wall locations ▪ measure plates ▪ lay out plates ▪ determine openings and lay out....doors and windows ▪ proper methods for cutting and fitting	Students will construct a wall with window and door openings Students will be able to describe how a wall is built and the order of construction. Students will be able to install wall sheathing(OSB) and show and describe proper nailing patterns.	▪ bottom plate ▪ top plate ▪ double top plate ▪ stud ▪ king stud ▪ cripple stud ▪ window sill ▪ header(door or window) ▪ trimmer stud ▪ sheathing ▪ osb-Oriented Strand board ▪ 8 penny nails ▪ 16d nails ▪ california corner ▪ shear ▪ bracing

	building.	wood components of a wall Proper use of tools		
Stair Construction (Week 8, 1 Week)	UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Carpentry 1 Standard 5 Students will be able to understand and demonstrate framing of flooring systems, wall and ceilings and roofing systems. ▪ Objective 21 Understand the members and installation of stair.	How to calculate total rise and run, and how to divide it into individual rise and run	Measure total rise and total run lengths. Determine the unit rise and unit run for the appropriate stair section. Use a carpenters square to layout a stair stringer	Stair Stringer Riser Tread Rise Run Unit Rise Unit Run Platform Landing Headroom total rise total run
Roof Framing (Week 10, 4 Weeks)	UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Carpentry 1 Standard 5 Students will be able to understand and demonstrate framing of flooring systems, wall and ceilings and roofing systems. ▪ Objective 14 Understand the terms associated with roof framing. ▪ Objective 15 Identify the roof framing members used in gable and hip roofs. ▪ Objective 16 Identify the various types of trusses used in roof framing. ▪ Objective 17 Use a rafter framing square, speed square, and calculator in laying out a roof. ▪ Objective 18 Identify various types of sheathing used in roof	Roof types ▪ Gabel roof ▪ Hip roof ▪ Gambrel roof ▪ Flat roof ▪ Shed roof ▪ Mansard roof Systems of framing ▪ stick built rafters ▪ Truss rafter What supports the roof ▪ Outside walls ▪ Ceiling Joists ▪ Interior bearing walls	Lay out a common rafter Erect a gable roof Explain the difference between stick built vs truss built. Explain what materials are need for different types of roofs Estimate the materials need for roof construction. Identify roof structures.	Birds mouth Blade Carpenters Square Common rafter Cripple jack Dormer Eave Extended rake Fascia

construction.

- Objective 19
  Erect a gable roof using trusses.
- Objective 20
  Understand the use and installation of roofing members.

Parts of the Roof frame

- Common Rafters
- Hip rafters
- Valley rafters
- Jack rafter

Layout Terms and Principles

- base,altitude,hypotenuse
- Slope and Pitch
- Framing square: tables, blade, tongue, rafter table
- Standard unit of rise
- Framing plans
- Sizing of rafters

Roof Truss Construction

- Advantages
- Where they are build
- how they are built
- Bracing required
- engineering

Roof Sheathing

- sizes
- Installation
- Panel clips

Estimating materials

- building size
- overhang
- Total Run
- Rise

Flat roof

Framing Square

Gable roof

Gambrel roof

Hip jack rafter

Hip rafter

Hip roof

Lookouts

Pitch

Purlin

Rafters

Ridge

Rise

Roof trusses

Run

Shed roof

Slope

Speed square

Symmetrical

Tongue

Truss

Units

				Valley jack rafter valley cripple jack valley rafter
windows and doors (Week 11, 1 Week)	UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Carpentry 1 Standard 6 Students will be able to understand and demonstrate installation of windows and exterior doors. ▪ Objective 1 Identify various types of fixed, sliding, and swinging windows. ▪ Objective 2 Identify the parts of a window installation. ▪ Objective 3 State the requirements for a proper window installation. ▪ Objective 4 Install a pre-hung window ▪ Objective 5 Identify the common types of exterior doors and windows and explain how they are constructed. ▪ Objective 6 Identify the types of thresholds used with exterior doors. ▪ Objective 7 Install a pre-hung exterior door with weatherstripping. ▪ Objective 8 Identify the various types of locksets used on exterior doors and explain how they are installed. ▪ Objective 9 Install a lockset.	Types, sizes, and installation of doors and windows.	Correctly install a window correctly install a door Install locksets	Casement window single-hung window glazing fixed window sliding window vinyl aluminum Door jamb brick moulding pre-hung door
Sheetrock (Week 14, 5 Weeks)	UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Carpentry 1 Standard 7 Students will be able to understand and demonstrate drywall installation and finishing. ▪ Objective 1 Identify the different types of	Identify types and sizes of drywall. How to cut and install drywall How to tape joints and finish coat drywall.	Create a finished wall surface by correctly and efficiently cutting and installing drywall.	Backing board drywall Moisture resistant board Corner bead

	gypsum wallboard (drywall) and their uses. ▪ Objective 2 Select the type and thickness of drywall required for specific installations. ▪ Objective 3 Select fasteners for drywall installation. ▪ Objective 4 Explain the fastener schedules for different types of drywall installations. ▪ Objective 5 Perform single-layer and multi-layer drywall installations using different types of fastening systems, including: a. Nails b. Drywall screws c. Adhesives ▪ Objective 6 Identify the hand tools used in drywall finishing and demonstrate the ability to use these tools. ▪ Objective 7 Identify the automatic tools used in drywall finishing. ▪ Objective 8 Identify the materials used in drywall finishing and state the purpose and use of each type of material, including: a. Compounds b. Joint reinforcing tapes c. Trim materials d. Textures and coatings			Drywall screwgun Taping knife Trowel Hawk Pan bazooka reinforcing tape T-square floor panel lift Tapered edge butt joint
Finish Carpentry (Week 19, 7 Weeks)	UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Carpentry 1 Standard 8 Students will be able to understand and demonstrate interior finishing. ▪ Objective 1 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.	identification of mouldings, doors, and tools involved in finish work The importance of measuring more accurately at this stage of the construction of the home.	Measure accurately Develop an eye for precision Create a finished moulding project correctly Correctly hang an interior door	baseboard base shoe casing dead bolt door frame door stop

	▪ Objective 2 Identify different types of interior doors. ▪ Objective 3 List and identify specific items included on a typical door schedule. ▪ Objective 4 Demonstrate the procedure for placing and hanging a selected door. ▪ Objective 5 Identify the different types of standard moldings and describe their uses. ▪ Objective 6 Make square and miter cuts using a miter box or power miter saw. ▪ Objective 7 Make coped joint cuts using a coping saw. ▪ Objective 8 Install interior trim, including: a. Door trim b. Window trim c. Base trim d. Ceiling trim			head jamb moldings miter cut panel door pre-hung door unit threshold
Tile (Week 26, 4 Weeks)	UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Carpentry 1 Standard 5 Students will be able to understand and demonstrate framing of flooring systems, wall and ceilings and roofing systems. ▪ Objective 1 Read and understand drawings and specifications to determine floor system requirements. ▪ Objective 5 List and recognize different types of flooring materials. ▪ Objective 6 Explain the purposes of subflooring and underlayment.	What makes a good solid well constructed tile floor. How to properly prepare the floor for tile How to install tile and grout the floor to industry standards.	Cut and staple wire mesh to strengthen the floor. Spread thin set to create a smooth workable surface to lay tile on. lay tile correctly Cut and fit smaller tile pieces. Grout and later seal the grout joints.	Lath Vapor barrier thinset Subfloor Cement Board Stone Porcelin Ceramic Grout Grout Joints

Exterior Finishes (Week 29, 4 Weeks)	UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Carpentry 2 Standard 05 Students will be able to understand and demonstrate framing of flooring systems, wall and ceilings and roofing systems. ▪ Objective 0510 Describe the procedure for laying out a wood frame wall, including plates, corner posts, door and window openings, partition T's. bracing, and firestops. ▪ Objective 0512 Describe the common materials and methods used for installing sheathing on walls.	How to use aluminum products to create a finished soffitt and fascia.	Efficiently and correctly cut and install soffitt and fascia.	Soffitt Fascia J-channel Staple gun Backing Vented Drip Edge
Handrail (Week 30, 3 Weeks)	UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Carpentry 1 Standard 2 Students will be able to understand and demonstrate the use of wood building materials, fasteners and adhesives. ▪ Objective 9 Identify the different types of anchors and their uses. a. Masonry and hollow-wall b. Allow something to be securely fastened to masonry or drywall. Standard 5 Students will be able to understand and demonstrate framing of flooring systems, wall and ceilings and roofing systems. ▪ Objective 21 Understand the members and installation of stair. UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Carpentry 2 Standard 08 Students will be able to understand and demonstrate interior finishing. ▪ Objective 0805 Identify the different types of standard moldings and describe	Safety, function, and beauty come together to create a beautiful guardrail and handrail.	Develop a plan for the stair railing Create, cut, and install a finished guardrail and handrail	baluster balustrade newel post handrail brackets shoe rosette

	their uses. ▪ Objective 0806 Make square and miter cuts using a miter box or power miter saw.			
Stucco and Rock (Week 32, 2 Weeks)		How building wraps waterproof the exterior walls. What are the various types of exterior surfaces available in residential construction. Creating a rock veneer on the front of the home.	Develop a plan for the layout of rock on the exterior wall. Effectively mix the mortar for adhering the rock to the wall. Cut and install rock on the exterior wall.	Siding Base coat Plaster Color coat Cultured stone Mortar mix Trowel Brick Masonry
Exterior Concrete driveways walkways and stairs (Week 33, 2 Weeks)	UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Carpentry 2 Standard 04 Students will be able to understand and demonstrate the uses of concrete and reinforcing materials. ▪ Objective 0401 Perform volume estimates for concrete quantity requirements. ▪ Objective 0402 Identify types of concrete reinforcement bars and describe their use. ▪ Objective 0403 Identify types of reinforcement bar supports and describe their use. ▪ Objective 0404 Recognize four kinds of footings: a. Continuous or spread b. Stepped c. Pier d. Grade beam ▪ Objective 0405 Identify the parts of footing forms	Creating forms for the concrete. Frost levels and concrete. Components of concrete. Finishing concrete.	Build and construct forms to hold the concrete. Figure cubic yards and order concrete. Lay and finish concrete.	Admixtures Aggregate cement screeds forms trowel bull float

	and explain their purpose. ▪ Objective 0406 Identify the parts of pier forms and explain their purpose. ▪ Objective 0407 Recognize types of concrete pours that require the construction of edge forms: a. Slabs with or without a foundation b. Driveways c. Sidewalks d. Approaches ▪ Objective 0408 Identify the parts of edge forms and explain their purpose. ▪ Objective 0409 Explain the purpose of a screed and identify the different types of screeds. ▪ Objective 0410 Demonstrate the ability to set screeds on grade. ▪ Objective 0411 Identify the various types of concrete forms. ▪ Objective 0412 Identify the components of each type of form. ▪ Objective 0413 Explain the safety procedures associated with using concrete forms.			
Home Show (Week 35, 2 Weeks)	UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Carpentry 2 Standard 09 The student will understand the need for professional development. ▪ Objective 0902 Set and meet goals. ▪ Objective 0905 Manage time Standard 10 The student will understand the need for leadership skills. ▪ Objective 1005	Participating in the class project of finishing the home will bring a great deal of satisfaction and recognition for the work done and information learned.	Students will finish creating and building the home.	cookies drinks shoe covers excitement Finalized project recognition accomplishment

	Participate in a school project			
State Skills Test (Week 37, 1 Week)	UT: CTE: Skilled and Technical Sciences, UT: Grades 9-12, Carpentry 1 Standard 1 Students will receive an orientation to the carpentry trade. ▪ Objective 1 Explain the importance of safety in the construction industry. Standard 2 Students will be able to understand and demonstrate the use of wood building materials, fasteners and adhesives. ▪ Objective 1 Explain the terms commonly used in discussing wood and lumber. ▪ Objective 2 Identify various types of imperfections that are found in lumber. a. Holes b. Knots c. Pitch d. Decay ▪ Objective 3 Interpret grade markings on lumber and plywood. a. The trademark indicates agency quality supervision. b. Mill identification – firm name, brand, or assigned mill number. c. Grade designation – grade name, number, or abbreviation. d. Species identification – indicates species individually or in combination. e. Condition of seasoning at time of surfacing: - S-Dry – 19% maximum moisture content - MC15 – 15% maximum moisture content - S-GRN – over 19% moisture content (unseasoned) ▪ Objective 4 Identify the uses of pressure-	Culmination of the year.	Pass the State Skills Test	All Vocabulary from all units.

treated lumber.
a. Landscape timbers
b. Sill plates
c. Foundations
d. Decks
e. Porches
f. Docks

- Objective 5
  Identify the safety precautions associated with pressure-treated lumber.
  a. When cutting pressure-treated lumber, always wear eye protection and a dust mask.
  b. Wash any skin that is exposed while cutting or handling the lumber.
  c. Wash clothing that is exposed to sawdust separately from other clothing
  d. Do not burn pressure-treated lumber as the ash poses a health hazard.
  e. Be sure to read and follow the manufacturer' s safety instruction.
- Objective 6
  Describe the proper method of caring for lumber and wood building materials at the job site.
- Objective 7
  State the uses of various types of engineered lumber.
  a. Columns
  b. Ridge beams
  c. Girders
  d. Headers
  e. Floor joists
- Objective 8
  List the basic nail and staple types and their uses.
  a. Nails: Common, box, finish, casing, doublehead, T-nail, drywall, masonry, cut, roofing.
  b. Staples: Chisel, crosscut chisel, outside chisel, inside chisel, divergent, outside chisel divergent, spear.
- Objective 9
  Identify the different types of anchors and their uses.
  a. Masonry and hollow-wall

b. Allow something to be securely fastened to masonry or drywall.

- Objective 10
  Describe the common types of adhesives used in construction work and explain their uses.

Standard 3
Students will be able to understand and demonstrate the safe use of hand and power tools.

- Objective 1
  Identify the hand tools commonly used by carpenters and describe their uses.
  a. Hammer, screwdrivers, pliers, chisels, levels, squares, planes, clamps, saws.
  b. Circular saw, table saw, power miter saws, reciprocating saws, portable sanders, portable drills and screwguns, pneumatic/cordless nailers and staplers, powder-actuated fastening tools
- Objective 2
  Use hand tools in a safe and appropriate manner.
  a. Follow all safety precautions in the manufacturer' s instruction manual.
  b. Always wear safety glasses and other appropriate safety equipment when working with hand and power tools.
- Objective 3
  State the general safety rules for operating all power tools, regardless of type.
- Objective 4
  State the general rules for properly maintaining all power tools, regardless of type.
- Objective 5
  Identify the portable power tools commonly used by carpenters and describe the uses.
- Objective 6
  Use potable power tools in a safe

and appropriate manner.

Standard 4
Students will be able to understand and demonstrate the uses of concrete and reinforcing materials.

- Objective 1
  Perform volume estimates for concrete quantity requirements.
  a. Calculate cubic feet.
  b. Calculate cubic yards.
- Objective 2
  Identify types of concrete reinforcement bars and anchors and describe their use.
  a. Rebar
  b. Anchor bolt
- Objective 3
  Identify types of reinforcement bar supports and describe their use.
- Objective 4
  Recognize four kinds of footings:
  a. Continuous or spread
  b. Stepped
  c. Pier
  d. Grade beam
- Objective 5
  Identify the parts of footing forms and explain their purpose.
- Objective 6
  Identify the parts of pier forms and explain their purpose.
- Objective 7
  Recognize types of concrete pours that require the construction of edge forms:
  a. Slabs with or without a foundation
  b. Driveways
  c. Sidewalks
  d. Approaches
- Objective 8
  Identify the parts of edge forms and explain their purpose.
- Objective 9
  Explain the purpose of a screed and identify the different types of screeds.
- Objective 10

Demonstrate the ability to set screeds on grade.

- Objective 11
  Identify the various types of concrete forms.
- Objective 12
  Identify the components of each type of form.
- Objective 13
  Explain the safety procedures associated with using concrete forms.
- Objective 14
  Erect, plumb, and brace selected concrete forms, including:
  a. Basic wall form with walers and strongbacks
  b. Ganged wall form
  c. Radius wall form
  d. Column form
  e. Beam form and shoring
  f. Stair form

Standard 5
Students will be able to understand and demonstrate framing of flooring systems, wall and ceilings and roofing systems.

- Objective 1
  Read and understand drawings and specifications to determine floor system requirements.
- Objective 2
  Identify floor and sill framing and support members.
- Objective 3
  Name the methods used to fasten sills to the foundation.
- Objective 4
  List and recognize different types of floor joists
- Objective 5
  List and recognize different types of flooring materials.
- Objective 6
  Explain the purposes of subflooring and underlayment.
- Objective 7
  Match selected fasteners used in floor framing to their correct uses.
- Objective 8

Demonstrate the ability to:
a. Layout and construct a floor assembly
b. Install joists for a cantilever floor
c. Install a single floor system using tongue and groove plywood/OSB panels

- Objective 9
  Identify the components of a wall and ceiling layout.
- Objective 10
  Describe the procedure for laying out a wood frame wall, including plates, corner posts, door and window openings, partition T's. bracing, and firestops.
- Objective 11
  Describe the correct procedure for assembling and erecting an exterior wall.
- Objective 12
  Describe the common materials and methods used for installing sheathing on walls.
- Objective 13
  Layout, assemble, erect, and brace exterior walls for a frame building.
- Objective 14
  Understand the terms associated with roof framing.
- Objective 15
  Identify the roof framing members used in gable and hip roofs.
- Objective 16
  Identify the various types of trusses used in roof framing.
- Objective 17
  Use a rafter framing square, speed square, and calculator in laying out a roof.
- Objective 18
  Identify various types of sheathing used in roof construction.
- Objective 19
  Erect a gable roof using trusses.
- Objective 20
  Understand the use and installation of roofing members.
- Objective 21

Understand the members and installation of stair.

Standard 6
Students will be able to understand and demonstrate installation of windows and exterior doors.

- Objective 1
  Identify various types of fixed, sliding, and swinging windows.
- Objective 2
  Identify the parts of a window installation.
- Objective 3
  State the requirements for a proper window installation.
- Objective 4
  Install a pre-hung window
- Objective 5
  Identify the common types of exterior doors and windows and explain how they are constructed.
- Objective 6
  Identify the types of thresholds used with exterior doors.
- Objective 7
  Install a pre-hung exterior door with weatherstripping.
- Objective 8
  Identify the various types of locksets used on exterior doors and explain how they are installed.
- Objective 9
  Install a lockset.

Standard 7
Students will be able to understand and demonstrate drywall installation and finishing.

- Objective 1
  Identify the different types of gypsum wallboard (drywall) and their uses.
- Objective 2
  Select the type and thickness of drywall required for specific installations.

- Objective 3
  Select fasteners for drywall installation.
- Objective 4
  Explain the fastener schedules for different types of drywall installations.
- Objective 5
  Perform single-layer and multi-layer drywall installations using different types of fastening systems, including:
  a. Nails
  b. Drywall screws
  c. Adhesives
- Objective 6
  Identify the hand tools used in drywall finishing and demonstrate the ability to use these tools.
- Objective 7
  Identify the automatic tools used in drywall finishing.
- Objective 8
  Identify the materials used in drywall finishing and state the purpose and use of each type of material, including:
  a. Compounds
  b. Joint reinforcing tapes
  c. Trim materials
  d. Textures and coatings

Standard 8
Students will be able to understand and demonstrate interior finishing.

- Objective 1
  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.
- Objective 2
  Identify different types of interior doors.
- Objective 3
  List and identify specific items included on a typical door schedule.

- Objective 4
  Demonstrate the procedure for placing and hanging a selected door.
- Objective 5
  Identify the different types of standard moldings and describe their uses.
- Objective 6
  Make square and miter cuts using a miter box or power miter saw.
- Objective 7
  Make coped joint cuts using a coping saw.
- Objective 8
  Install interior trim, including:
  a. Door trim
  b. Window trim
  c. Base trim
  d. Ceiling trim

Standard 9
Students will gain an understanding of Building Trades as a profession and will develop professional skills for the workplace.

- Objective 2
  Understand the use of drawings in architectural design and how those drawings relate to career opportunities.