

## CARPENTRY II

### COURSE DESCRIPTION

*Carpentry II* is a course in which students will extend their skills and knowledge related to residential and commercial carpentry. Topics covered include stairs, installation and trim of windows and doors, installation and repair of gypsum wallboard, advanced site layout, exterior finish work, thermal and moisture protection, and an introduction to welding. This course gives students a substantial skill and knowledge foundation typically required for apprentice carpenters.

*It is strongly recommended that administration and guidance follow the scope and sequence and course recommendations as listed.*

**Recommended:** Construction Core, Carpentry I, Algebra I, Geometry, Principles of Technology I or Physical Science

**Recommended Credits:** 2

**Recommended Grade Level(s):** 11<sup>th</sup> and 12<sup>th</sup>

**Number of Competencies in Course:** 83

## CARPENTRY II

### STANDARDS

- 1.0** Students will demonstrate leadership, citizenship, and teamwork skills required for success in the school, community, and workplace.
- 2.0** Students will assume responsibility for the safety of themselves, their coworkers, and bystanders.
- 3.0** Students will interpret, layout, and fabricate in conformance to construction drawings and written specifications.
- 4.0** Roofing applications: materials and method of roofing applications.
- 5.0** Thermal and moisture protection: Insulation materials and methods.
- 6.0** Exterior finishing: Insulation and flashing, cornices, siding estimating, various types of siding materials and methods of application.
- 7.0** Cold-formed steel framing: Identify the components of steel framing, tools and fasteners, applications of cold-formed steel framing.
- 8.0** Drywall installation: Identify different types of drywall, fasteners for drywall, and correct installation of drywall.
- 9.0** Drywall finishing: State the differences between the six levels of drywall finishes, identify toll required, materials used in finishing drywall.
- 10.0** Doors and door hardware: Identify the various types of door jambs and frames, types of interior doors, interior door hardware, procedure for hanging a door.
- 11.0** Suspended ceilings: Explaining types of suspended ceilings, proper installation, measurement and layout of suspended ceilings.
- 12.0** Window, door, floor, and ceiling trim: Different types of moldings and their uses, square and mitered cuts, coping cuts, estimate quantities of moldings required for selected rooms.
- 13.0** Cabinet installation: State the classes and sizes of typical base and wall kitchen cabinets, hardware; layout cabinets countertops and backsplashes.
- 14.0** Cabinet fabrication: Recognize types of wood, recognize and cut various types of joints used in cabinetmaking.

## **CARPENTRY II**

### **STANDARD 1.0**

Students will demonstrate leadership, citizenship, and teamwork skills required for success in the school, community, and workplace.

### **LEARNING EXPECTATIONS**

The student will:

- 1.1** Demonstrate leadership skills.
- 1.2** Use problem-solving techniques to address and propose solutions to school, community, and workplace problems.
- 1.3** Demonstrate the ability to work professionally with others.
- 1.4** Participate in SkillsUSA as an integral part of instruction.
- 1.5** Exhibit integrity and pride in the practice and quality of work.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student:

- 1.1A** Uses critical-thinking and consensus building skills in group deliberations.
- 1.1B** Keeps group work focused on task.
- 1.2A** Determines the root causes of observed conflicts or problems.
- 1.2B** Mediates disputes between parties.
- 1.3A** Participates in a job shadowing experience.
- 1.3B** Assembles a student team to solve an assigned problem.
- 1.4** Attends and participates in periodic meetings of SkillsUSA or similar organization.
- 1.5** Exhibits integrity and pride in artisanship.

### **SAMPLE PERFORMANCE TASKS**

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Prepare a resume.
- Participate in various SkillsUSA or similar programs and/or competitive events.
- Attend a professional organization meeting, such as local Chamber of Commerce meeting.
- Participate in the American Spirit Award competition with SkillsUSA.
- Participate in job shadowing or internship program with local business or industry.
- Take an active role in a group project assigned by the instructor.
- Identify and detail a problem area in the school, community, or workplace and propose solutions. If possible, and with appropriate approvals, implement or facilitate the solution.

### **INTEGRATION LINKAGES**

SkillsUSA, *Professional Development Program*, SkillsUSA, Communications and Writing Skills, Teambuilding Skills, Research, Language Arts, Sociology, Psychology, Math, English, Social Studies, Problem Solving, Interpersonal Skills, Employability Skills, Critical-Thinking Skills, SCANS (Secretary's Commission on Achieving Necessary Skills), MAVCC, Chamber of Commerce, Colleges, Universities, Technology Centers, Associated Builders and Contractors, National Center For Construction Research and Education (NCCER)



## **CARPENTRY II**

### **STANDARD 2.0**

Students will assume responsibility for the safety of themselves, their coworkers, and bystanders.

### **LEARNING EXPECTATIONS**

The student will:

- 2.1** Exhibit and encourage in others a positive attitude regarding safety practices and issues.
- 2.2** Habitually inspect and use appropriate personal protective equipment for assigned tasks.
- 2.3** Inspect, maintain, and employ safe operating procedures with tools and equipment, such as scaffolding, lifting equipment, and air-powered drivers.
- 2.4** Exhibit a well-developed awareness of potential hazards to self and others.
- 2.5** Carry out responsibilities under HazCom (Hazard Communication) regulations.
- 2.6** Take action to protect coworkers and bystanders from hazards as required by regulations and Occupational Safety and Health Administration (OSHA) policies.
- 2.7** Report accidents and observed hazards and execute emergency response procedures as required by regulations and Occupational Safety and Health Administration (OSHA) policies.
- 2.8** Demonstrate appropriate construction-related safety procedures.
- 2.9** Pass with 100 % accuracy a written examination relating to carpentry and construction safety issues
- 2.10** Pass with 100% accuracy a performance examination relating to carpentry and construction safety.
- 2.11** Maintain a portfolio record of written safety examinations and equipment examinations for which the student has passed an operational checkout by the instructor.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student:

- 2.1A** Includes safety procedures in activity plans.
- 2.1B** Exhibits an awareness of proper safety procedures by coworkers.
- 2.1C** Responds positively to instruction, advice, and correction regarding safety issues.
- 2.1D** Reports to school or work physically ready to perform to professional standards, such as rested or not impaired by medications, drugs, or alcohol.
- 2.2** Selects, inspects, and uses the correct personal protective equipment for the assigned task.
- 2.3A** Checks scaffolding for stability, bracing, walk boards, and guard rails prior to use.
- 2.3B** Inspects extension cords for the presence of a functional ground connection prior to use.
- 2.4A** Is observant of personnel and activities in the vicinity of the work area.
- 2.4B** Warns nearby personnel prior to starting potentially hazardous actions.
- 2.5A** Applies information from material safety data sheet (MSDS) to protect self and others from the health hazards associated with assigned tasks.
- 2.5B** Reports hazards found on the job site to the supervisor and remedies the hazard as instructed.
- 2.6A** Warns and protects workers and bystanders of overhead loads in transit.
- 2.6B** Provides and activates adequate ventilation equipment as required by the task.
- 2.7A** Reports all injuries and observed unguarded hazards to the immediate supervisor.
- 2.7B** Executes assigned tasks as described in emergency response procedures.

- 2.8A** Is observant of safety issues and concerns relevant to the construction industry
- 2.8B** Complies with all safety guidelines and regulations set forth by industry and OSHA.
- 2.9** Passes with 100 % accuracy a written examination relating to carpentry and construction safety issues.
- 2.10** Passes with 100% accuracy a performance examination relating to carpentry and construction safety.
- 2.11** Maintains a portfolio record of written safety examinations and equipment examinations for which the student has passed an operational checkout by the instructor.

### **SAMPLE PERFORMANCE TASKS**

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Prior to assigning a task using power tools, the instructor removes some required safety items and instructs students to perform an inspection of tools.
- Instruct a visitor to obviously approach the vicinity of a student conducting a hazardous activity and note the level of awareness demonstrated by the student.
- In a project requiring solvents or adhesives, introduce a new brand or type and require students to retrieve the MSDS and identify possible health hazards.

### **INTEGRATION/LINKAGES**

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Power Tool Institute (PTI), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

## **CARPENTRY II**

### **STANDARD 3.0**

Students will interpret, lay out, and fabricate in conformance to construction drawings and written specifications.

### **LEARNING EXPECTATIONS**

The student will:

- 3.1** Recognize the difference between commercial and residential construction drawing.
- 3.2** Identify the basic keys, abbreviations, and other references contained in a set of commercial drawings
- 3.3** Accurately read a set of commercial drawings.
- 3.4** Identify and document specific items from a door and window schedule.
- 3.5** Explain basic construction details and concepts employed in commercial construction.
- 3.6** Calculate the floor area of each room in a floor plan.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student:

- 3.1** Locate 10 items contained in a set of commercial drawings (instructor's choice).
- 3.4** Using a door and window schedule, identify the hardware, ratings, and finishing for each door and window.
- 3.6** Calculate the floor area in a floor plan.

### **SAMPLE PERFORMANCE TASKS**

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Given a set of plans and specifications for a residential or commercial structure, make a complete material take-off of cabinetry.
- Given a set of plans and specifications for a residential or commercial structure, determine the location of cabinetry not explicitly dimensioned.
- Given a set of plans and specifications for a residential or commercial structure, make a complete take-off.
- Given a set of plans and specifications for a residential or commercial structure, determine the location of elements not explicitly dimensioned.

### **INTEGRATION/LINKAGES**

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

## **CARPENTRY II**

### **STANDARD 4.0**

The student will explore roofing applications: materials and method of roofing applications.

### **LEARNING EXPECTATIONS**

The student will:

- 4.1 Identify the materials and methods used in roofing.
- 4.2 Explain the safety requirements for roof jobs.
- 4.3 Install fiberglass shingles on gable and hip roofs.
- 4.4 Close up a valley using fiberglass shingles.
- 4.5 Explain how to make various roof projections watertight when using fiberglass shingles.
- 4.6 Complete the proper cuts and install the main and hip ridge caps using fiberglass shingles.
- 4.7 Layout, cut, and install a cricket or saddle.
- 4.8 Install wood shingles and shakes on roofs.
- 4.9 Describe how to close up a valley using wood shakes and shingles.
- 4.10 Explain how to make roof projections watertight when using wood shakes and shingles.
- 4.11 Complete the cuts and install the main and hip ridge caps using wood shakes and shingles.
- 4.12 Demonstrate the techniques for installing other selected types of roofing materials.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student:

- 4.1 Installs fiberglass shingles on a gable and hip roof.
- 4.4 Closes up a valley using fiberglass shingles.
- 4.6 Completes the proper cuts and installs the main and hip ridge caps using fiberglass shingles.
- 4.7 Lays out, cuts, and installs a cricket or saddle.
- 4.8 Installs wood shingles and shakes.
- 4.11 Completes the cuts and installs the main and hip ridge caps using shakes/shingles.
- 4.12 Demonstrates the techniques for installing other selected types of roofing materials.

### **SAMPLE PERFORMANCE TASKS**

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Jobsite field trips can be used to show students different types of roofing applications.
- Have Carpentry 1 students build the structures for use by the carpentry 11 students.
- Have local roofing contractor come to classroom and demonstrate techniques of installing roofing.

### **INTEGRATION/LINKAGES**

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, SCANS, SkillsUSA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), United States Department of Labor, Tennessee Department of Labor and Workforce Development

## **CARPENTRY II**

### **STANDARD 5.0**

Students will explore thermal and moisture protection.

### **LEARNING EXPECTATIONS**

The student will:

- 5.1** Describe the requirements for insulation.
- 5.2** Describe the characteristics of various types of insulation material
- 5.3** Calculate the required amounts of insulation for a structure.
- 5.4** Install selected insulation materials
- 5.5** Describe the requirements for moisture control and ventilation.
- 5.6** Install selected vapor barriers.
- 5.7** Describe various methods of waterproofing.
- 5.8** Describe air infiltration control requirements.
- 5.9** Install selected building wraps.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student:

- 5.4** Installs blanket insulation in a wall.
- 5.6** Installs a vapor barrier.
- 5.9** Installs selected building wraps.

### **SAMPLE PERFORMANCE TASKS**

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- There are no sample performance tasks for this module as it is self explanatory. Instructors may use their discretion.

### **INTEGRATION/LINKAGES**

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

## **CARPENTRY II**

### **STANDARD 6.0**

Exterior finishing: Insulation and flashing, cornices, siding estimating, various types of siding materials and methods of application.

### **LEARNING EXPECTATIONS**

The student will:

- 6.1** Describe the purpose of wall insulation and flashing
- 6.2** Install selected common cornices.
- 6.3** Demonstrate lap and panel siding estimating methods.
- 6.4** Describe the types and applications of common wood siding.
- 6.5** Describe fiber-cement siding and its uses.
- 6.6** Describe the types and styles of vinyl and metal siding.
- 6.7** Describe the types and applications of stucco and masonry veneer finishes.
- 6.8** Describe the types and applications of special exterior finish systems.
- 6.9** Install three types of siding commonly used in your area.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student:

- 6.2** Installs a selected cornice or box cornice using the proper safety precautions.
- 6.3** Estimates the amount of lap or panel siding required for a structure.
- 6.9** Installs three of the most common siding types in your area.

### **SAMPLE PERFORMANCE TASKS**

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- A small shed is the perfect project to accomplish all your performance indicators. You can then put the shed up for sale, making money for your program.
- Take students to a job site and identify various types of external finishes.
- Bring in local contractors who can demonstrate finishing techniques to you students.

### **INTEGRATION/LINKAGES**

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), United States Department of Labor, Tennessee Department of Labor and Workforce Development

## **CARPENTRY II**

### **STANDARD 7.0**

Cold-formed steel framing: Identify the components of steel framing, tools and fasteners, applications of cold-formed steel framing.

### **LEARNING EXPECTATIONS**

The student will:

- 7.1** Identify the components of a steel framing system.
- 7.2** Identify and select the tools and fasteners used in a steel framing system.
- 7.3** Identify applications for steel framing systems.
- 7.4** Demonstrate the ability to build back to back, box, and headers.
- 7.5** Lay out and install a steel stud structural wall with openings to include bracing and blocking.
- 7.6** Lay out and install a steel stud non-structural wall with openings to include blocking and bracing.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student:

- 7.4** Demonstrates the ability to build headers (back-to-back, box, and L-header).
- 7.5** Lays out and installs a steel stud structural wall with openings to include bracing and blocking.
- 7.6** Lays out and installs a steel stud non-structural wall with openings to include blocking and bracing.

### **SAMPLE PERFORMANCE TASKS**

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Lay out a steel wall and perform the necessary tasks.

### **INTEGRATION/LINKAGES**

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development.

## **CARPENTRY II**

### **STANDARD 8.0**

Drywall installation: Identify different types of drywall, fasteners for drywall, and correct installation of drywall.

### **LEARNING EXPECTATIONS**

The student will:

- 8.1** Identify the different types of drywall and their uses
- 8.2** Select the type and thickness of drywall required for a specific installations.
- 8.3** Select fasteners for drywall installation.
- 8.4** Explain the fastener schedules for different types of drywall installations.
- 8.5** Perform single-layer and multi-layer drywall installations using different types of fastening systems, including nails, drywall screws, and adhesives.
- 8.6** Install gypsum drywall on steel studs.
- 8.7** Explain how soundproofing is achieved in drywall installations.
- 8.8** Estimate material quantities for drywall installation.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student:

- 8.1** Instals gypsum drywall panels on stud walls and ceilings using different types of fastening systems including nails, drywall screws, and adhesives.
- 8.6** Installs gypsum drywall panels on a steel wall.
- 8.8** Selects the type and thickness of drywall required for specific installations and estimate material quantities for the installation.

### **SAMPLE PERFORMANCE TASKS**

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion

- Have local drywall installation come to the classroom and demonstrate.
- Take students to a job site and observe drywall crew as they work.

### **INTEGRATION/LINKAGES**

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

## **CARPENTRY II**

### **STANDARD 9.0**

Drywall finishing: State the differences between the six levels of drywall finishes, identify toll required, materials used in finishing drywall.

### **LEARNING EXPECTATIONS**

The student will:

- 9.1** State the differences between the six levels of finish established by industry standards and distinguish a finish level by observation.
- 9.2** Identify the hand tools used in drywall finishing and demonstrate the ability to use these tools.
- 9.3** Identify the automatic tools used in drywall finishing.
- 9.4** Identify the materials used in drywall finishing and state the purpose and use of each type of material, including compounds, joint reinforcing tapes, trim materials, textures, and coatings.
- 9.5** Properly finish drywall using hand tools.
- 9.6** Recognize various types of problems that occur in drywall finishes; identify the causes and correct methods for solving each type of problem.
- 9.7** Patch damaged drywall.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student:

- 9.1** States the differences between the six levels of finish established by industry standards and distinguish a finish level by observation.
- 9.4** Properly prepares the following compounds for use; taping compound, topping compound, premix, quickset compound.
- 9.5** Selects the proper hand tools and performs the following; joint tapping and finishing, fastener spotting, corner finishing, and sanding.
- 9.7** Patches damaged drywall.

### **SAMPLE PERFORMANCE TASKS**

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- After a field trip to observe drywall work in progress, students write a report.
- Perform all drywall techniques.

### **INTEGRATION/LINKAGES**

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency.

## **CARPENTRY II**

### **STANDARD 10.0**

Doors and door hardware: Identify the various types of door jambs and frames, types of interior doors, interior door hardware, procedure for hanging a door.

### **LEARNING EXPECTATIONS**

The student will:

- 10.1** 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.
- 10.2** Identify different types of interior doors.
- 10.3** Identify types of interior door hardware and demonstrate the installation procedures for selected types.
- 10.4** Demonstrate the correct and safe use of the hand and power tools described in this module.
- 10.5** List and identify specific items included on a typical door schedule.
- 10.6** Demonstrate the procedure for placing and hanging a selected door.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student:

- 10.1** Installs a selected metal frame door using proper safety precautions.
- 10.2** Installs a pre-hung door unit or door hanging system using the proper safety precautions.
- 10.3** Lays out and cuts hinges in a wooden door.
- 10.4** Installs a lockset and door closer using the proper safety precautions.
- 10.5** Installs a bifold door using the proper safety precautions.

### **SAMPLE PERFORMANCE TASKS**

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Take students to a local home store and have them show students types of doors.
- Go to a job site and have student observe workers install doors and door hardware.

### **INTEGRATION/LINKAGES**

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development.

## **CARPENTRY II**

### **STANDARD 11.0**

Suspended ceilings: Explaining types of suspended ceilings, proper installation, measurement and layout of suspended ceilings.

### **LEARNING EXPECTATIONS**

The student will:

- 11.1** Establish a level line.
- 11.2** Explain the common terms related to sound waves and acoustical ceiling materials.
- 11.3** Identify the different types of suspended ceilings.
- 11.4** Interpret plans related to ceiling layout.
- 11.5** Sketch the ceiling layout for a basic suspended ceiling.
- 11.6** Perform a material takeoff for a suspended ceiling.
- 11.7** Install selected suspended ceilings.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student:

- 11.1** Uses a water level and/or establishes a level line at ceiling level such as required when installing the wall angle for a suspended ceiling.
- 11.3** Lays out and installs selected suspended ceiling systems according to specific plan.
  - Exposed grid ceiling
  - Metal pan ceiling system
  - Direct-hung concealed grid system
  - Drywall furring ceiling system
- 11.6** Draws a ceiling plan/sketch for a typical room, then uses the plan/sketch to estimate the quantities of materials needed to install an exposed grid ceiling system in a room.

### **SAMPLE PERFORMANCE TASKS**

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Use Local Ceiling installation companies to come in and demonstrate techniques.

### **INTEGRATION LINKAGES**

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Algebra, Geometry, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, SkillsUSA *Professional Development Program* (PDP), Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education Research (NCCER), Occupation Safety and Health Administration (OSHA), Power Tool Institute (PTI), National Fire Protection Association (NFPA), Environmental Protection Agency (EPA), United States Department of Labor, Tennessee Department of Labor and Workforce Development

## CARPENTRY II

### **STANDARD 12.0**

Window, door, floor, and ceiling trim: Different types of moldings and their uses, square and mitered cuts, coping cuts, estimate quantities of moldings required for selected rooms.

### **LEARNING EXPECTATIONS**

The student will:

**12.1** Identify the different types of standard moldings and describe their uses.

**12.2** Make a square and miter cuts using a miter box or power miter saw.

**12.3** Make coped joint cuts using a coping saw.

**12.4** Select and properly use fasteners to install trim.

**12.5** Install interior trim, including the following:

Door trim

Window trim

Base trim

Ceiling trim

**12.6** Estimate the quantities of different trim materials required for selected rooms.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student:

**12.2A** Makes square and miter cuts to selected moldings using a metal/wooden miter box.

**12.2B** Make square and miter cuts to selected moldings using a power miter/compound miter saw.

**12.3** Makes a coped joint using a coping saw

**12.5** Installs interior trim, including the following:

Door trim

Window trim

Base trim

Ceiling trim

**12.6** Estimates the quantities of different trim materials required for selected rooms.

### **SAMPLE PERFORMANCE TASKS**

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Take students to a home supply store and walk through and identify various types of trim and molding explaining its proper location in a home.

### **INTEGRATION LINKAGES**

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Algebra, Geometry, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, SkillsUSA *Professional Development Program* (PDP), Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education Research (NCCER), Occupation Safety and Health Administration (OSHA), Power Tool Institute (PTI), National Fire Protection

Association (NFPA), Environmental Protection Agency (EPA), United States Department of Labor, Tennessee Department of Labor and Workforce Development

## CARPENTRY II

### **STANDARDS 13.0**

Cabinet installation: State the classes and sizes of typical base and wall kitchen cabinets, hardware; layout cabinets countertops and backsplashes.

### **LEARNING EXPECTATIONS**

The student will:

- 13.1** State the classes and sizes of typical base and wall kitchen cabinets.
- 13.2** Identify the cabinet components and hardware and describe their purposes.
- 13.3** Lay out factory-made cabinets, countertops and backsplashes.
- 13.4** Explain the installation of an island base.

### **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student:

- 13.1** Lays out and identifies various types of base and wall units following a specific layout scheme.
- 13.2** OPTIONAL: Installs and assembles various types of factory-built base and wall units following a specific layout scheme.

### **SAMPLE PERFORMANCE TASKS**

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Because of the complexity of this module it would be best to demonstrate each technique. And a written test will show competency.

### **INTEGRATION LINKAGES**

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Algebra, Geometry, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, SkillsUSA *Professional Development Program* (PDP), Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education Research (NCCER), Occupation Safety and Health Administration (OSHA), Power Tool Institute (PTI), National Fire Protection Association (NFPA), Environmental Protection Agency (EPA), United States Department of Labor, Tennessee Department of Labor and Workforce Development

## CARPENTRY II

## **STANDARDS 14.0**

Cabinet fabrication: Recognize types of wood, recognize and cut various types of joints used in cabinetmaking.

## **LEARNING EXPECTATIONS**

The student will:

- 14.1** Recognize the common types of woods used to make cabinets.
- 14.2** Correctly and safely use stationary power tools.
- 14.3** Identify and cut the various types of joints used in cabinetmaking.
- 14.4** Build a cabinet from a set of plans.
- 14.5** Install plastic laminate on a countertop core.

## **PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET**

The student:

- 14.1** Uses stationary power tools to make joints commonly used by cabinetmakers.
- 14.2** Builds a cabinet from a set of plans.
- 14.3** Installs plastic laminate to a countertop core.

## **SAMPLE PERFORMANCE TASKS**

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Because of the complexity of this module it would be best to demonstrate each technique. And a written test will show competency.
- Because of the amount of time required to become competent in cabinetmaking these competencies can be fulfilled with a written test

## **INTEGRATION LINKAGES**

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, English, Algebra, Geometry, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, SkillsUSA *Professional Development Program* (PDP), Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education Research (NCCER), Occupation Safety and Health Administration (OSHA), Power Tool Institute (PTI), National Fire Protection Association (NFPA), Environmental Protection Agency (EPA), United States Department of Labor, Tennessee Department of Labor and Workforce Development

## **SAMPLING OF AVAILABLE RESOURCES**

- *Core Curriculum*, National Center for Construction Education and Research (NCCER), Prentice Hall, Upper Saddle River, NJ. Also known as Contren Learning Series materials.
- *Carpentry Level One*, National Center for Construction Education and Research (NCCER), Prentice Hall, Upper Saddle River, NJ. Also known as the Contren Learning Series materials.
- *Carpentry Level Two*, National Center for Construction Education and Research (NCCER), Prentice Hall, Upper Saddle River, NJ. Also known as the Contren Learning Series materials.
- *Carpentry Level Three*, National Center for Construction Education and Research (NCCER), Prentice Hall, Upper Saddle River, NJ. Also known as the Contren Learning Series materials.
- *Carpentry Level Four*, National Center for Construction Education and Research (NCCER), Prentice Hall, Upper Saddle River, NJ. Also known as the Contren Learning Series materials.
- *Residential Carpentry I*, National Center for Construction Education and Research (NCCER), Prentice Hall, Upper Saddle River, NJ. Also known as the Contren Learning Series materials.
- *Residential Carpentry II*, National Center for Construction Education and Research (NCCER), Prentice Hall, Upper Saddle River, NJ. Also known as the Contren Learning Series materials.
- *Introduction to Carpentry*, MAVCC, Oklahoma Department of Vocational and Technical Education
- *Fundamentals of Construction*, MAVCC, Oklahoma Department of Vocational and Technical Education
- *Fundamentals of Carpentry*, MAVCC, Oklahoma Department of Vocational and Technical Education
- *Residential Carpentry*, MAVCC, Oklahoma Department of Vocational and Technical Education
- *Commercial Carpentry*, MAVCC, Oklahoma Department of Vocational and Technical Education
- *Basic Drafting*, MAVCC, Oklahoma Department of Vocational and Technical Education
- *Modern Carpentry*, Willis H. Wagner and Howard Bud Smith, Goodheart-Willcox, © 2003

- *Print Reading for Construction*, Walter C. Brown and Daniel P Dorfmueller, Goodheart-Willcox, © 2005
- *Total Quality Curriculum*, SkillsUSA
- *Professional Development Program (PDP)*, SkillsUSA
- National Association of Home Builders, [www.nahb.org](http://www.nahb.org)
- United Brotherhood of Carpenters and Joiners of America, [www.carpenters.org](http://www.carpenters.org)
- National Association of Women in Construction, [www.nawiceducation.org](http://www.nawiceducation.org)
- Homebuilders Institute, [www.hbi.org](http://www.hbi.org)
- APA Engineered Wood Association, [www.apawood.org](http://www.apawood.org)
- National Roofing Contractors Association, [www.nrca.net](http://www.nrca.net)
- United States Department of Labor, [www.dol.gov](http://www.dol.gov)
- United States Department of Labor, Occupational Outlook Handbook, [www.dol.gov](http://www.dol.gov)
- Secretary's Commission on Achieving Necessary Skills, [www.dol.gov](http://www.dol.gov)
- Occupational Safety and Health Administration (OSHA), [www.osha.gov](http://www.osha.gov)
- Environmental Protection Agency (EPA), [www.epa.gov](http://www.epa.gov)
- National Safety Council, [www.nsc.org](http://www.nsc.org)
- National Skills Standards Board Institute, [www.nssb.org](http://www.nssb.org)
- Vocational Information Center, [www.khake.com](http://www.khake.com)
- Power Tool Institute (PTI), [www.powertoolinstitute.com](http://www.powertoolinstitute.com)
- Associated Builders and Contractors, [www.abc.org](http://www.abc.org)
- Associated General Contractors of America, [www.agcofamerica.org](http://www.agcofamerica.org)
- Building Officials and Code Administration International, [www.bocai.org](http://www.bocai.org)