PRECISION EXAMS

Carpentry

EXAM INFORMATION

Items
73
Points
73
Prerequisites
NONE
Grade Level
10-12
Course Length
ONE YEAR

Career Cluster
ARCHITECTURE AND CONSTRUCTION
MANUFACTURING

Performance Standards
INCLUDED

Certificate Available
YES

DESCRIPTION

This is the first in a sequence of courses that prepares individuals to layout, fabricate, erect, install, and repair wooden structures and fixtures using hand and power tools. Includes instruction in common systems of framing, construction materials, blueprint reading, concrete placing, siding, and mechanical systems.

EXAM BLUEPRINT

STANDARD	PERCENTAGE OF EXAM
1- Materials, Fasteners & Adhesives	10%
2- Safety Practices	5%
3- Concrete & Reinforcing Materials	7%
4- Framing	5%
5- Windows & Exterior Doors Installation	47%
6- Roofing Installation	7%
7- Insulation Installation	5%
8- Drywall Installation & Finishing	14%
9- Interior Finishing (Optional)	
10- Professional Skills (Optional)	

STANDARD 1

STUDENTS WILL BE ABLE TO UNDERSTAND AND DEMONSTRATE THE USE OF WOOD BUILDING MATERIALS, FASTENERS AND ADHESIVES.

Objective 1 Identify various types on imperfections that are found in lumber.

1. Holes
2. Knots
3. Pitch
4. Decay

Objective 2 Interpret grade markings on lumber and plywood.

1. Grade designation – grade name, number, or abbreviation.
2. Species identification – indicates species individually or in combination.
3. Condition of seasoning at the time of surfacing.

Objective 3 Identify the uses of pressure-treated lumber.

1. Landscape timbers
2. Sill plates
3. Foundations
4. Decks
5. Porches

Objective 4 Identify the safety precautions associated with pressure-treated lumber.

1. When cutting pressure-treated lumber, always wear eye protection and a dust mask.
2. Wash any skin that is exposed while cutting or handling the lumber.
3. Wash clothing that is exposed to sawdust separately from other clothing.
4. Do not burn pressure-treated lumber as the ash poses a health hazard.
5. Be sure to read and follow the manufacturer's safety instruction.

Objective 5 Describe the proper method of caring for lumber and wood building materials at the job site.

Objective 6 State the uses of various types of engineered lumber.

1. Headers
2. Floor joists

Objective 7 List the basic nail and staple types and their uses.

1. Nails: Common and finish
2. Chisel staples

Objective 8 Identify the different types of anchors and their uses.

1. Anchor bolts
2. Expansion bolts
3. Earthquake straps
4. Allow something to be securely fastened to masonry or drywall.

Objective 9 Describe the common types of adhesives used in construction work and explain their uses.

1. Construction adhesives
2. Drywall adhesives
3. Contact Cement

Standard 1 Performance Evaluation included below (Optional)

STANDARD 2

STUDENTS WILL BE ABLE TO UNDERSTAND AND DEMONSTRATE THE SAFE USE OF HAND AND POWER TOOLS.

Objective 1 Identify the hand and power tools commonly used by carpenters and describe their uses.

1. Hammer, screwdrivers, pliers, chisels, levels, squares, clamps, saws.
2. Circular saw, table saw, power miter saws, reciprocating saws, portable sanders, portable drill and screwguns, pneumatic/cordless nailers and staplers, powder-actuated fastening tools.

Objective 2 Use hand tools in a safe and appropriate manner.

1. Follow all safety precautions in the manufacturer's instruction manual.
2. 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 appropriate and safe manner of using them.

Standard 2 Performance Evaluation included below (Optional)

STANDARD 3

STUDENTS WILL BE ABLE TO UNDERSTAND AND DEMONSTRATE THE USES OF CONCRETE AND REINFORCING MATERIALS.

Objective 1 Perform volume quantities and estimates for concrete quantity requirements.

1. Calculate cubic yards.

Objective 2 Identify types of concrete reinforcement bars and describe their uses.

1. Rebar
2. Wire mesh

Objective 3 Recognize four kinds of footings:

1. Continuous or spread
2. Stepped
3. Pier
4. Spot

Objective 4 Recognize types of concrete pours that require the construction of edge forms:

1. Slabs with or without a foundation
2. Driveways
3. Sidewalks
4. Approaches

Objective 5 Identify the parts of edge forms and explain their purpose.

Objective 6 Explain the purpose of a screed and identify the different types of screeds.

Objective 7 Demonstrate the ability to set screeds on grade.

Objective 8 Identify the various types of concrete forms.

Objective 9 Identify the components of each type of form.

Objective 10 Explain the safety procedures associated with using concrete forms.

Objective 11 Erect, plumb, and brace selected concrete forms, including:

1. Basic wall form with walers and strongbacks
2. Ganged wall form
3. Radius wall form
4. Column form
5. Stair form

Standard 3 Performance Evaluation included below (Optional)

STANDARD 4

STUDENTS WILL BE ABLE TO UNDERSTAND AND DEMONSTRATE FRAMING OF FLOORING SYSTEMS, WALL AND CEILING 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.

Objective 7 Match selected fasteners used in floor framing to their correct uses.

Objective 8 Demonstrate the ability to:

1. Layout and construct a floor assembly
2. Install a single floor system using tongue and groove plywood/OSB panels

Objective 9 Identify the components of a wall.

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 common materials and methods used for installing sheathing on walls.

Objective 12 Layout, assemble, erect, and brace exterior walls for a frame building.

Objective 13 Understand the terms associated with roof framing.

Objective 14 Identify the roof framing members used in gable and hip roofs.

Objective 15 Identify the various types of trusses used in roof framing.

Objective 16 Use the rafter framing square, speed square, and calculator in laying out a roof.

Objective 17 Identify various types of sheathing used in roof construction.

Objective 18 Erect a gable roof using trusses.

Objective 19 Understand the use and installation of roofing members.

Objective 20 Understand the members and installation of stairs.

Standard 4 Performance Evaluation included below (Optional)

STANDARD 5

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 steps of a window installation.

1. Ensure that the window is closed
2. Remove shipping blocks
3. Install window in rough opening
4. Shim as necessary
5. Check sill for level
6. Plumb the side jambs
7. Recheck for level and plumb
8. Nail
9. Install insulation

Objective 3 Install a window.

Objective 4 Identify the common types of exterior doors.

Objective 5 Identify the threshold.

Objective 6 Install a pre-hung exterior door with weather-stripping.

Objective 7 Identify the various types of locksets used on exterior doors and explain how they are installed.

Objective 8 Install a lockset

Standard 5 Performance Evaluation included below (Optional)

STANDARD 6

STUDENTS WILL BE ABLE TO UNDERSTAND AND DEMONSTRATE INSTALLATION OF ROOFING MATERIALS.

Objective 1 Identify roofing terms

1. Square
2. Coverage
3. Exposure
4. Rake
5. Underlayment
6. Flashing
7. Weather guard
8. Vents
9. Gutters

Objective 2 Identify different roofing materials.

1. Asphalt – standard and metric
2. Cedar
3. Tile
4. Metal

STANDARD 7

STUDENTS WILL BE ABLE TO UNDERSTAND AND DEMONSTRATE INSTALLATION OF INSULATION MATERIALS.

Objective 1 Identify the types of installation.

1. Flexible – Fiberglass blankets
2. Loose fill – Blown
3. Rigid – Sheet or board form
4. Reflective – Aluminum foil bonded

Objective 2 Explain terms related to insulation.

1. R-value
2. Vapor barrier

STANDARD 8

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 of thickness of drywall required for specific installations.

Objective 3 Select fasteners for drywall installation.

1. Nails
2. Drywall screws
3. Adhesives

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.

1. Nails
2. Screws

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:

1. Compounds
2. Joint reinforcing tapes
3. Trim materials
4. Textures and coatings

Standard 8 Performance Evaluation included below (Optional)

STANDARD 9 (Optional)

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 swings of interior doors.

Objective 3 Demonstrate the procedure for placing and hanging a selected door.

Objective 4 Identify the different types of standard moldings and describe their uses.

Objective 5 Make square and miter cuts using a miter saw.

Objective 6 Make coped joint cuts using a coping saw.

Objective 7 Install interior trim, including:

1. Door trim
2. Window trim
3. Base trim
4. Ceiling trim

Standard 9 Performance Evaluation included below (Optional)

STANDARD 10 (Optional)

STUDENTS WILL GAIN AN UNDERSTANDING OF BUILDING TRADES AS A PROFESSION AND WILL DEVELOP PROFESSIONAL SKILLS FOR THE WORKPLACE.

Objective 1 As a participating member of the SkillsUSA student organization complete the SkillsUSA Level 1 Professional Development Program.

1. Complete a self-assessment inventory and identify individual learning styles.
2. Discover self-motivation techniques and establish short-term goals.
3. Determine individual time-management skills.
4. Define future occupations.
5. Define awareness of cultural diversity and equity issues.
6. Recognize the benefits of conducting a community service project.
7. Demonstrate effective communication skills with others.
8. Participate in a shadowing activity.
9. Identify components of an employment portfolio.
10. Explore what is ethical in the workplace or school.
11. Demonstrate proficiency in program competencies.
12. Master a working knowledge of SkillsUSA.
    1. State the SkillsUSA motto.
    2. State the SkillsUSA creed.
    3. Learn the SkillsUSA colors.
    4. Describe the official SkillsUSA dress.
    5. Describe the procedure for becoming a SkillsUSA officer.

Objective 2 Understand the career opportunities as they relate to this field of study.

Objective 3 Display a professional attitude toward the instructor and peers.

* SkillsUSA PDP requirements - recommended

Standard 10 Performance Evaluation included below (Optional)

Carpentry Performance Standards (Optional)

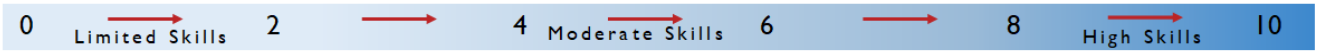
Performance assessments may be completed and evaluated at any time during the course. The following performance skills are to be used in connection with the associated standards and exam. To pass the performance standard the student must attain a performance standard average of **8 or higher** on the rating scale. Students may be encouraged to repeat the objectives until they average **8 or higher**.

Students Name_____

Class_____

STANDARD 1 Materials, Fasteners & Adhesives — Score:

PERFORMANCE RATING SCALE



- ☐ Understand and demonstrate the use of wood building materials, fasteners and adhesives.

STANDARD 2 Safety Practices — Score:

- ☐ Understand and demonstrate the safe use of hand and power tools.

STANDARD 3 Concrete & Reinforcing Materials — Score:

- ☐ Understand and demonstrate the uses of concrete and reinforcing materials.

STANDARD 4 Framing — Score:

- ☐ Understand and demonstrate framing of flooring systems, wall and ceilings, and roofing systems

STANDARD 5 Windows & Exterior Doors Installation — Score:

- ☐ Understand and demonstrate installation of windows and exterior doors.

STANDARD 8 Drywall Installation & Finishing — Score:

- ☐ Understand and demonstrate drywall installation and finishing.

STANDARD 9 Interior Finishing — Score:

- ☐ Understand and demonstrate interior finishing.

STANDARD 10 Professional Skills — Score:

- ☐ Receive an orientation to the carpentry trade

PERFORMANCE STANDARD AVERAGE SCORE: