CARPENTRY 1, 2, 3, 4
COURSE CODES: 6091, 6092, 6093, 6094

PROGRAM DESCRIPTION: Carpentry courses provide information related to the building of wooden structures, enabling students to gain an understanding of wood grades and construction methods and to learn skills such as laying sills and joists; erecting sills and rafters; applying sheathing, siding, and shingles; setting door jambs; and hanging doors. Carpentry courses may teach skills for rough construction, finish work, or both. Students learn to read blueprints, draft, use tools and machines properly and safely, erect buildings from construction lumber, perform finish work inside of buildings, and perform limited cabinet work. Carpentry courses may also include career exploration, good work habits, and employability skills. Standards are aligned to the NCCER® Carpentry Standards.

Provided a student takes Introduction to Construction and scores 70% on all assessments (00101-8-15), he or she does not have to repeat the NCCER® Core modules in Carpentry.

OBJECTIVE: Given the necessary equipment, supplies, and facilities, the student will complete all of the following core standards successfully.

CREDITS: 1 (120 hours), 2 (240 hours) units per course code

PREREQUISITE(S): Algebra 1 or Geometry with Statistics

RECOMMENDED GRADE LEVEL: 9 - 12

COMPUTER ACCESS REQUIRED: 1 Computer per student with Internet access

RECOMMENDED MAXIMUM ENROLLMENT: 16

RESOURCES: **Instructional Materials**

PREREQUISITE:

NCCER® CORE MODULES

MODULE A. BUILD YOUR FUTURE IN CONSTRUCTION

Proficient construction professionals demonstrate basic safety knowledge as needed in their role. The following accountability criteria are considered essential for students in all the Construction programs of study.

1. Define construction and summarize the current and future outlook for jobs.
2. Identify some of construction's more prominent contributions in history.
3. Recognize and describe how construction careers make a difference in the community.
4. Describe the financial and professional benefits of pursuing a construction career.
5. Describe industry sectors and the progression path for construction careers.
6. Identify different construction careers and the types of skills they require.
7. Explain the benefits of career and technical education programs.
8. Describe the advantages of craft training programs and their relationship with

apprenticeships.
9. Summarize the path to a construction career through community colleges and universities.
10. No performance tasks.

MODULE B. SAFETY

Proficient construction professionals demonstrate basic safety knowledge as needed in their role. The following accountability criteria are considered essential for students in all the Construction programs of study.

1. Identify the responsibilities and personal characteristics of a professional craftsperson.
2. Describe the safe work requirements for elevated work.
3. Identify and explain how to avoid struck-by and caught-in-between hazards.
4. Explain the appropriate safety precautions around common job-site hazards.
5. Demonstrate the use and care of appropriate personal protective equipment (PPE).
6. Identify and describe other specific job-site safety hazards.
7. Follow safe procedures for lifting heavy objects.
8. Describe safe behavior on and around ladders and scaffolds.
9. Explain the importance of the Hazard Communication Standard (HazCom) requirement and Safety Data Sheets (SDS)
10. Describe fire prevention and firefighting techniques.
11. Define safe work procedures around electrical hazards.
12. Complete 10-hour OSHA course/assessment and receive card. (Optional)
13. Complete Performance Tasks.

MODULE C. CONSTRUCTION MATH

Proficient construction professionals demonstrate basic math skills as needed in their role. The following accountability criteria are considered essential for students in all the Construction programs of study.

1. Add, subtract, multiply, and divide whole numbers, with and without a calculator.
2. Use a standard ruler and a metric ruler to measure.
3. Add, subtract, multiply, and divide fractions.
4. Add, subtract, multiply, and divide decimals, with and without a calculator.
5. Convert decimals to percent and percent to decimals.
6. Convert fractions to decimals and decimals to fractions.
7. Explain what the metric system is and how it is important in the construction trade.
8. Recognize and use metric units of length, weight, volume, and temperature.
9. Recognize some of the basic shapes used in the construction industry and apply basic geometry to measure them.
10. No performance tasks.

MODULE D. INTRODUCTION TO HAND TOOLS

Proficient construction professionals demonstrate how to safely use various hand tools as needed in their role. The following accountability criteria are considered essential for students in all the Construction programs of study.

1. Recognize and identify various types of basic hand tools used in the construction trade.
2. Identify and describe how to use various types of measurement and layout tools.
3. Identify and explain how to use various types of cutting and shaping tools.
4. Use these tools safely.
5. Describe the basic procedures for taking care of these tools.
6. Complete Performance Tasks

MODULE E. INTRODUCTION TO POWER TOOLS

Proficient construction professionals demonstrate how to safely use power tools as needed in their role. The following accountability criteria are considered essential for students in all the Construction programs of study.

1. Identify and explain how to use various types of power drills and impact wrenches used in the construction trade.
2. Identify and explain how to use various types of power saws.
3. Identify and explain how to use various grinders and grinder attachments.
4. Identify and explain how to use miscellaneous power tools.
5. Use power tools safely.
6. Explain how to maintain power tools properly.
7. Complete Performance Tasks

MODULE F. INTRODUCTION TO CONSTRUCTION DRAWINGS/RECOMMEND BLUEPRINT READING

Proficient construction professionals demonstrate knowledge and the use of blueprints/construction drawings as needed in their role. The following accountability criteria are considered essential for students in all of the Construction programs of study.

1. Identify and describe various types of construction drawings, including their fundamental components and features.
2. Recognize and identify basic blueprint terms, components, and symbols.
3. Relate information on blueprints to actual locations on the print.
4. Recognize different classifications of drawings.
5. Interpret and use drawing dimensions.
6. Complete Performance Tasks.

MODULE G. BASIC RIGGING (OPTIONAL)

Proficient construction professionals demonstrate how to use basic rigging as needed in

their role. The following accountability criteria are considered essential for students in all of the Construction programs of study.

1. Explain how ropes, chains, hoists, loaders, and cranes are used to move material and equipment from one location to another on a job site.
2. Describe inspection techniques and load-handling safety practices.
3. Explain the American National Standards Institute (ANSI) hand signals.
4. Complete Performance Tasks

MODULE H. BASIC COMMUNICATION SKILLS

Proficient construction professionals demonstrate appropriate communication skills as needed in their role. The following accountability criteria are considered essential for students in all of the Construction programs of study.

1. Describe the communication, listening and speaking processes and their relationship to job performance.
2. Describe good reading and writing skills and their relationship to job performance
3. Demonstrate telephone and e-communication skills necessary in the workplace.
4. Complete Performance Tasks.

MODULE I. BASIC EMPLOYABILITY SKILLS

Proficient construction professionals demonstrate appropriate workplace behavior as needed in their role. The following accountability criteria are considered essential for students in all of the Construction programs of study.

1. Describe the opportunities in the construction business and how an individual enters the construction workforce.
2. Explain the importance of critical thinking and how to solve problems in the workplace.
3. Explain the importance of social skills and identify ways good social skills are applied in the construction trade.
4. Describe computer systems and their industry applications.
5. Explain interpersonal relationship skills, self-presentation, and key workplace issues such as sexual harassment, stress, and substance abuse.
6. No performance tasks.

MODULE J. MATERIALS HANDLING

Proficient construction professionals demonstrate appropriate skills handling materials as needed in their role. The following accountability criteria are considered essential for students in all of the Construction programs of study.

1. Describe the hazards associated with handling materials and provides techniques to avoid both injury and property damage.
2. Complete Performance Tasks.

CARPENTRY 2 – 4

LEVEL 1 (240 HOURS)

A. INTRODUCTION TO CARPENTRY

Carpentry professionals demonstrate knowledge of the industry and relevant professional development as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. Identify career and entrepreneurial opportunities available to people in the Carpentry trade.
2. Identify the skills, responsibilities, and characteristics needed to be a successful carpenter.
3. Summarize how involvement in a career-technical student organization like SkillsUSA can help a student connect to industry.
4. Explain the importance of safety in the construction industry, and describe the obligations of the contractor, subcontractors, and you to ensure a safe work environment.

B. BUILDING MATERIALS, FASTENERS, AND ADHESIVES

Carpentry professionals demonstrate appropriate knowledge and skills when working with building materials, fasteners, and adhesives as needed in their role. The following accountability criteria are considered essential for students in all of the Carpentry program of study.

1. State the uses of various types of hardwoods and softwoods.
2. Describe common lumber defects.
3. Identify the different grades of lumber and describe uses for each.
4. Explain how treated lumber differs from nontreated lumber.
5. Describe how plywood is manufactured and cite common applications for plywood on a construction project.
6. Identify uses of hardboard and particleboard.
7. Identify uses of high- and medium-density overlay plywood.
8. Describe how oriented strand board differs from particleboard and cite common applications for OSB.
9. Cite common applications for mineral fiberboard.
10. State the uses of various types of engineered lumber.
11. Identify applications for wood I-beams
12. List advantages of glulam lumber over conventional solid lumber.
13. Describe the composition of concrete and explain how hydration occurs.
14. List uses of concrete masonry units for a construction project.
15. Identify where metal framing members may be used in a structure.
16. List general safety guidelines for working with building materials.
17. Cite safety precautions for working with wood, concrete, and metal building materials.
18. List basic material-handling guidelines.

19. Describe how to handle and store wood, concrete, and store metal building materials.
20. Calculate lumber and panel quantities.
21. Calculate the volume of concrete required for rectangular and cylindrical shapes.
22. Identify various types of nails and cite uses for each.
23. Identify applications for staples.
24. Identify various types of screws and cite uses for each.
25. Describe uses for hammer-driven pins and studs.
26. Identify various types of bolts, mechanical, bolt, screw, hollow-wall, anchors and cite uses for each.
27. List the types of glues and adhesives used in construction.
28. Demonstrate performance tasks.

C. HAND AND POWER TOOLS

Carpentry professionals demonstrate appropriate knowledge and usage of hand and power tools as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. Identify and describe hand tools commonly used by carpenters, e.g., levels, squares, planes, clamps, and hand saws.
2. Identify and describe power tools commonly used by carpenters, e.g., power saws, drill presses, routers, laminate trimmers, portable power plans, and power metal shears.
3. Describe the safe use of pneumatic and cordless nailers and staplers.
4. Demonstrate performance tasks.

D. INTRODUCTION TO CONSTRUCTION DRAWINGS, SPECIFICATIONS, AND LAYOUT

Carpentry professionals understand to how read and interpret construction drawings, specifications and layouts as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

5. Identify the different types of lines used on construction drawings.
6. Identify selected architectural symbols commonly used to represent materials on plans.
7. Identify selected electrical, mechanical, and plumbing symbols commonly used on plans.
8. Identify selected abbreviations commonly used on plans.
9. Describe the methods of dimensioning construction drawings.
10. List the various types of construction drawings and describe each.
11. Describe how specifications are organized.
12. Explain the importance of building codes in construction.
13. Identify the methods of squaring a building.
14. Demonstrate performance tasks.

E. FLOOR SYSTEMS

Carpentry professionals demonstrate appropriate knowledge and skills for constructing floor systems as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. Explain the importance of specifications.
2. List items commonly shown on architectural drawings.
3. Describe information typically shown on structural drawings.
4. Explain the importance of referencing mechanical, electrical, and plumbing plans.
5. Describe the proper procedure for reading a set of prints.
6. Describe the general components of a platform-framed structure.
7. List differences between platform framing and balloon framing.
8. Describe the characteristics of post-and-beam framing.
9. Define sill plate and describe its role in floor framing.
10. List and recognize different types of beams and girders and supports.
11. List and recognize different types of floor joists and bridging.
12. Explain the purposes of subfloor and underlayment.
13. Describe how to check a foundation for squareness.
14. Name the methods used to lay out and fasten sill plates to the foundation.
15. Describe the proper procedure for installing a beam or girder.
16. Describe how to lay out sill plates and girders for floor joists.
17. Describe how to lay out and install floor joists for partitions and floor openings.
18. Identify different types of bridging and describe how to properly install each type.
19. Describe how to properly install subfloor.
20. Explain how to install joists for projections or cantilevered floors.
21. Describe how to estimate the amount of sill plate, sill sealer, and termite shield.
22. Describe how to estimate the amount of beam or girder material.
23. Describe how to estimate the amount of lumber needed for joists and joist headers.
24. Describe how to estimate the amount of bridging required.
25. Describe how to estimate the amount of subfloor material required.
26. Identify some common alternative floor systems.
27. Demonstrate performance tasks.

F. WALL SYSTEMS

Carpentry professionals demonstrate appropriate knowledge and skills for constructing wall systems as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. Identify methods used to construct corner posts.
2. Describe how to frame partition intersections.
3. Explain the purpose of headers and describe how they are constructed.
4. Describe how metal-framed walls are constructed.
5. Describe how to properly lay out a wood frame wall.
6. Explain how to lay out wall openings.
7. List the steps involved in assembling a wall.
8. Identify where fire stops are to be installed and explain how they are installed.

9. List the steps involved in erecting a wall.
10. Describe wall framing techniques used in masonry construction.
11. Explain how to estimate the amount of lumber required for soleplates and top plates.
12. Describe how to estimate the number of studs required.
13. Explain how to calculate the amount of material needed for a header.
14. Describe how to estimate the amount of diagonal bracing required.
15. Describe how concrete walls are constructed.
16. Explain the difference between standard interior wall systems and alternative interior wall systems.
17. State the precautions that must be taken when installing refrigerant piping.
18. Demonstrate performance tasks.

G. CEILING AND ROOF FRAMING

Carpentry professionals demonstrate appropriate knowledge and skills for ceiling and roof framing as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. Describe the correct procedure for laying out ceiling joists.
2. Describe how to cut and install ceiling joists on a wood frame building.
3. Describe how to estimate the number of ceiling joists required for a building.
4. Identify common types of roofs used in residential construction.
5. Identify the two types of dormers.
6. Describe how to use a framing square and a Speed Square™ for roof framing.
7. Explain how to lay out rafter locations.
8. Describe how to mathematically determine the length of a common rafter, and use the "step-off" method.
9. Explain the correct procedure for laying out and cutting a common rafter.
10. Describe how to install rafters.
11. Describe how to frame a gable overhang.
12. Explain how to frame an opening in a roof.
13. Identify the various types and components of trusses.
14. Identify the basics of truss installation and bracing.
15. Describe the basics of roof sheathing installation.
16. Determine the materials needed for a gable roof.
17. Demonstrate performance tasks.

H. BUILDING ENVELOPE SYSTEMS

Carpentry professionals demonstrate appropriate knowledge and skills for building envelope systems as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. Describe various ways that air infiltration can be minimized or prevented.
2. Identify various types of fixed, sliding, and swinging windows.
3. Identify the common types of exterior doors and explain how they are constructed
4. Explain when jamb extensions are used.
5. Identify common considerations when framing in glass blocks.
6. Identify the differences between residential and commercial doors.
7. Identify the various types of locksets used on exterior doors and explain how they are installed.
8. Demonstrate performance tasks.

I. BASIC STAIR LAYOUT

Carpentry professionals demonstrate appropriate knowledge and skills for building basic stairs as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. Identify how residential and commercial stairways differ.
2. Identify the various components associated with stairs.
3. Define headroom.
4. Define stringer and explain when more than two stringers are used.
5. Define treads and risers and explain the importance of uniform tread depths and riser heights.
6. List the minimum stairway width requirements for residential and commercial structures.
7. Describe the difference between handrails and guards.
8. Identify situations that carpenters may be confronted with when framing stairwells.
9. Explain how to calculate the riser height, tread depth, and total run for a stairway.
10. Describe how to calculate stairwell opening sizes.
11. Explain how to lay out and cut a stringer.
12. Describe how to properly reinforce a stringer.
13. Summarize how concrete stairways are formed.
14. Demonstrate performance tasks.

LEVEL 2 (240 HOURS)

J. COMMERCIAL DRAWING

Carpentry professionals demonstrate appropriate knowledge and skills for reading and interpreting commercial drawings as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. Describe the operation of various types of transformers.
2. Compare and contrast residential and commercial construction drawings.
3. Describe the purpose of a civil drawing.
4. Describe the use of architectural drawings and schedules.
5. Describe the use of structural drawings.
6. Describe the purpose of mechanical, electrical, and plumbing drawings.
7. Compare drawings from two different disciplines.
8. Describe the format of specifications.
9. Explain how specifications are written.
10. Demonstrate performance tasks.

K. COLD-FORMED STEEL FRAMING (OPTIONAL)

Carpentry professionals demonstrate appropriate knowledge and skills for cold-formed steel framing as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. Identify the safety guidelines that should be followed when working with cold-formed steel.
2. Identify steel framing materials.
3. List the steel framing tools and fasteners.

4. Explain how to perform a material takeoff for a steel frame project.
5. Describe basic steel construction methods.
6. Explain how to frame nonstructural and structural steel walls.
7. Explain how steel framing members are used in floor, roof, and ceiling construction.
8. Demonstrate performance tasks.

L. EXTERIOR FINISHING

Carpentry professionals demonstrate appropriate knowledge and skills for exterior finishing as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. Identify safety hazards that are present when working at elevations.
2. Describe safety hazards when working with hand and power tools, equipment, and exterior finish materials.
3. Identify the types of wood siding.
4. Identify vinyl and metal siding materials and components.
5. List applications for fiber-cement siding, and the use of proper PPE.
6. Discuss the types of veneer finishes.
7. List specialty exterior finishes.
8. Explain the purpose of flashing.
9. Describe surface preparation that must be performed prior to installing exterior finish materials.
10. Discuss the types of furring and insulation that might be applied to exterior walls.
11. Explain how to establish a straight reference line.
12. Describe how to install wood, vinyl, metal, and fiber-cement siding.
13. Explain how to install cornices.
14. Explain how to perform a takeoff on panel and board siding.
15. Demonstrate performance tasks.

M. THERMAL AND MOISTURE PROTECTION

Carpentry professionals demonstrate appropriate knowledge and skills of thermal and moisture protection as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. List the personal protective equipment (PPE) that is required when working with insulation.
2. Describe how to safely handle insulation.
3. Explain how to determine R-value requirements.
4. List miscellaneous types of insulation.
5. Describe flexible, loose-fill, rigid, semi-rigid, and reflective insulation and list their characteristics.
6. Explain how to install flexible, loose-fill, rigid, semi-rigid, and reflective insulation.
7. List various methods to control moisture in a structure.
8. Identify methods to waterproof a structure.

9. Describe the estimating procedure for thermal and moisture projects.
10. Demonstrate performance tasks.

N. ROOFING APPLICATIONS

Carpentry professionals demonstrate appropriate knowledge and skills of roofing applications as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. Identify potential hazards when working on roofs.
2. Discuss the fall protection equipment required when working on roofs.
3. Identify proper personal protective equipment (PPE) and hazard control devices used when working on roofs.
4. Identify the hand and power tools used when working on roofing projects.
5. Identify fasteners used on roofing projects.
6. Identify roll-roofing applications.
7. Identify composition, wood shakes and shingles and their applications.
8. Explain how to install composition shingles (three-tab and architectural).
9. Explain how to install metal and roll roofing.
10. Identify tile/slate roofing materials and their applications.
11. Identify metal, built-up, and single-ply roofing and their applications.
12. Explain the purpose of underlayment and waterproof membrane.
13. Discuss the purpose of drip edge, flashing, and roof ventilation.
14. Describe how to properly prepare a roof deck.
15. Discuss roof projections, flashing, and ventilation.
16. Describe the estimating procedure for roofing projects.
17. Demonstrate performance tasks.

O. DOORS AND DOOR HARDWARE

Carpentry professionals demonstrate appropriate knowledge and skills of doors and door hardware as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. Describe the safety hazards related to working with doors.
2. Identify the different types and composition of residential and commercial doors.
3. Describe the uses and benefits of wood and metal door jambs and frames.
4. Identify the different types of door hardware used in residential and commercial applications.
5. Describe the various installation techniques for residential and commercial doors and hardware.
6. Describe the hardware finish classifications.
7. Describe the information included in a typical door schedule.
8. Demonstrate performance tasks.

P. DRYWALL INSTALLATION

Carpentry professionals demonstrate appropriate knowledge and skills for drywall installation as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. List the types of gypsum products.
2. Identify drywall fasteners and list their uses.
3. Identify drywall accessories and state their applications.
4. Describe the purpose of a finish schedule.
5. List the tools used for drywall application.
6. Identify methods of sound-isolation construction.
7. Describe the procedure for drywall construction.
8. List special applications for drywall.
9. Describe single-ply drywall application.
10. Describe how fire-rated walls are constructed.
11. List multi-ply drywall applications.
12. Describe how to prioritize walls.
13. Explain how to perform a material takeoff for drywall and drywall fasteners.
14. Demonstrate performance tasks.

Q. DRYWALL FINISHING

Carpentry professionals demonstrate appropriate knowledge and skills for drywall finishing as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. Identify differences between the six levels of finish established by industry standards.
2. Describe how to select the proper trim.
3. Describe the purposes of tapes, compounds, coatings, and sanding materials.
4. Identify the hand and automatic tools used in drywall finishing.
5. Identify ideal site conditions for drywall finishing.
6. Describe the process for finishing drywall.
7. Identify common problems when finishing drywall.
8. Describe the hand-finishing procedures involved in drywall finishing.
9. Describe the specialty tools specific to automatic taping and finishing procedures involved in drywall finishing.
10. Identify common joint and compound problems when finishing drywall.
11. Identify common fastener problems when finishing drywall.
12. Explain how to estimate the proper amount of drywall finishing materials.
13. Demonstrate performance tasks.

R. SUSPENDED CEILINGS

Carpentry professionals demonstrate appropriate knowledge and skills for suspended ceiling installation as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. Identify the system components necessary to properly frame a suspended ceiling system.
2. Identify the suspension systems and hardware necessary to properly install a suspended ceiling system.
3. Identify the safe material handling and storage procedures required when installing a suspended ceiling system.
4. Interpret the layout information.
5. Interpret the MEP locations.
6. Identify the layout and takeoff procedures to procure materials to lay out and install a suspended ceiling system.
7. Identify the tools and equipment to lay out and install a suspended ceiling system.
8. Identify the installation methods and procedures for a suspended ceiling system.
9. Demonstrate performance tasks.

S. WINDOW, DOOR, FLOOR, AND CEILING TRIM

Carpentry professionals demonstrate appropriate knowledge and skills for window, door, floor, and ceiling trim installation as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. Identify the proper personal protection equipment required when working with window, door, floor, and ceiling trim.
2. Identify tool and equipment safety guidelines when working with window, door, floor, and ceiling trim tools.
3. Identify the different types of base, wall, and ceiling moldings.
4. Explain how to properly install base and ceiling molding.
5. Identify the different types of window and door trim.
6. Explain how to properly install window and door trim.
7. Explain how to properly cut and fasten trim.
8. Explain how to estimate window, door, floor, and ceiling trim.
9. Demonstrate performance tasks.

T. CABINET INSTALLATION (OPTIONAL)

Carpentry professionals demonstrate appropriate knowledge and skills for cabinet installation as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. Identify tool and material hazards that may be present when installing cabinets.
2. Explain how to prevent back injuries through proper ergonomics.

3. Identify wall and base cabinets.
4. Describe the purpose of a countertop.
5. Identify cabinet components.
6. Describe various types of hardware used on cabinets.
7. Describe the surface preparation needed before cabinet installation.
8. Explain how to install wall and base cabinets, and countertops.
9. Demonstrate performance tasks.

U. CABINETMAKING (OPTIONAL)

Carpentry professionals demonstrate appropriate knowledge and skills for making cabinets as needed in their role. The following accountability criteria are considered essential for students in the Carpentry program of study.

1. Identify and describe solid woods particleboard.
2. Identify and describe various types of plywood.
3. Identify and describe the safe use of various types of saws.
4. Identify and describe the safe use of jointers, planers, shapers, and routers.
5. Identify and describe the safe use of sanders, drill presses, and brad guns.
6. Identify and describe the common wood joints used in cabinetmaking.
7. Identify and describe the construction features of cabinet doors, drawers, and shelves.
8. Identify and describe various types of cabinet hardware and fasteners.
9. Describe the process of cabinet assembly.
10. Describe how to properly sand cabinets and how to apply sealers, wood fillers, and stains to them.
11. Identify basic considerations for laminate installation.
12. Describe how to lay out, cut, and apply laminates to a countertop
13. Demonstrate performance tasks.

Student Organizations, Technology Knowledge, Personal Qualities and Skills, and Professional Knowledge are to be embedded in course standards A-U.

STUDENT ORGANIZATIONS

Proficient professionals know the academic subject matter, including professional development. The following accountability criteria are considered essential for students in any program of study.

1. Identify the purpose and goals of a Career and Technology Student Organization (CTSO).
2. Explain how CTSOs are integral parts of specific clusters, majors, and/or courses.
3. Explain the benefits and responsibilities of being a member of a CTSO. List leadership opportunities that are available to students through participation in CTSO conferences, competitions, community service, philanthropy, and other activities.
4. Explain how participation in CTSOs can promote lifelong benefits in other professional and civic organizations.

TECHNOLOGY KNOWLEDGE

Proficient professionals know the academic subject matter, including the ethical use of

technology. The following accountability criteria are considered essential for students in any program of study.

1. Demonstrate proficiency and skills associated with the use of technologies that are common to a specific occupation.
2. Identify proper netiquette when using e-mail, social media, and other technologies for communication purposes.
3. Identify potential abuse and unethical uses of laptops, tablets, computers, and/or networks.
4. Explain the consequences of social, illegal, and unethical uses of technology (e.g., piracy; illegal downloading; cyberbullying; licensing infringement; inappropriate uses of software, hardware, and mobile devices in the work environment).
5. Discuss legal issues and the terms of use related to copyright laws, Creative Commons, fair use laws, and ethics pertaining to downloading of images, photographs, Creative Commons, documents, video, sounds, music, trademarks, and other elements for personal use.
6. Describe ethical and legal practices of safeguarding the confidentiality of business-related information.
7. Describe possible threats to a laptop, tablet, computer, and/or network and methods of avoiding attacks.

PERSONAL QUALITIES AND EMPLOYABILITY SKILLS

Proficient professionals know the academic subject matter, including positive work practices and interpersonal skills. The following accountability criteria are considered essential for students in any program of study.

1. Demonstrate creativity and innovation.
2. Demonstrate critical thinking and problem-solving skills.
3. Demonstrate initiative and self-direction.
4. Demonstrate integrity.
5. Demonstrate work ethic.
6. Demonstrate conflict resolution skills.
7. Demonstrate listening and speaking skills.
8. Demonstrate respect for diversity.
9. Demonstrate customer service orientation.
10. Demonstrate teamwork.

PROFESSIONAL KNOWLEDGE

Proficient professionals know the academic subject matter, including positive work practices and interpersonal skills. The accountability criteria are considered essential for students in any program of study.

1. Demonstrate global or “big picture” thinking.
2. Demonstrate career and life management skills and goal-making.
3. Demonstrate continuous learning and adaptability skills to changing job requirements.
4. Demonstrate time and resource management skills.
5. Demonstrates information literacy skills.
6. Demonstrates information security skills.
7. Demonstrates information technology skills.
8. Demonstrates knowledge and use of job-specific tools and technologies.

9. Demonstrate job-specific mathematics skills.
10. Demonstrates professionalism in the workplace.
11. Demonstrates reading and writing skills.
12. Demonstrates workplace safety.

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