SLO Presentation

WMT

Date: 09-15-2022

ISLO

Civic Engagement

• Students will develop values and beliefs in their role as a member of local, national and global societies to promote truth, fairness and goodwill to others. They will use the democratic process to further their values and beliefs and recognize and accept differing perspectives based on cultural diversity. They will engage in actions which provide service to others and have a positive impact on their local community.

Communication and Expression

• Students will demonstrate the ability to effectively and appropriately communicate their thoughts and ideas both in written and oral forms. They will develop verbal and non-verbal delivery skills, in an appropriate manner, to communicate their ideas as well as evaluate the ideas of others in a wide variety of contexts.

Critical Thinking and Quantitative Reasoning

• Students will demonstrate the ability to recognize assumptions within an argument and actively and skillfully analyze underlying reasoning to develop a conclusion. They will apply qualitative and/or quantitative analysis to solve problems, predict outcomes, test hypotheses, and explore alternatives in an ethical manner.

Information Literacy

• Students will demonstrate the ability to determine when gathering additional information is necessary. They will use appropriate resources and technologies to locate, evaluate and incorporate the information when developing supporting arguments and drawing conclusions. Students will also develop the ability to understand any legal, ethical or social issues regarding the use of information.

Personal Knowledge and Responsibility

• Students will develop the necessary skills to define, maintain and complete their personal educational goals. They will learn to work independently to accomplish personal goals toward realizing their full potential academically, physically and emotionally whether for personal enrichment, further education or career advancement.

Technology

WMT

Cabinetmaking--Cert

- Students build a 32mm system cabinet project to meet the requirements of specified planning documents.
- Students build a faceframe cabinet project to meet the requirements of specified planning documents.
- Students design and build a group of kitchen cabinets using face-frame or 32mm construction methods.
- Students select and install base, case, and crown moldings.
- Students use computer software to create planning documents.
- Students, working as a team, design, build, and install a cabinet or millwork project.

Furniture Making--Cert

- Student utilize handtools to augment machine tool use in the construction of a furniture project.
- Students build a casegood project to meet the requirements of specified planning documents.
- Students build a table project to meet the requirements of specified planning documents.
- Students convert rough lumber to a flat, straight and square-edged piece suitable for project use.
- Students prepare and present a design portfolio including concept sketches, scale drawings, and a scale model and/or full-sized drawing of a chair, table, and casegood.
- Students select, prepare for, and apply the appropriate finish for a furniture or casegood project.

Woodworking--Cert

- Students build a 32mm system cabinet project to meet the requirements of specified planning documents.
- Students build a casegood project to meet the requirements of specified planning documents.
- Students build a faceframe cabinet project to meet the requirements of specified planning documents.
- Students build a table project to meet the requirements of specified planning documents.

- Students convert rough lumber to a flat, straight and square-edged piece suitable for project use.
- Students select and install base, case, and crown moldings.
- Students select, prepare for, and apply the appropriate finish for a furniture or cabinet project.
- Students use a lathe to create a faceplate or spindle project.

CSLO

WMT1 - Open Entry/Exit Woodworking

• Students will demonstrate acceptable industry standards in woodworking shop applications to an 80% level.

WMT43 - Woodworking Manufacturing Technologies Occupational Work Experience

• In a woodworking industry setting, students will perform a minimum of 180 hours work experience related to their major area of interest in the woodworking field.

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• In a woodworking industry setting, students will perform a minimum of 180 hours work experience related to their major area of interest in the woodworking field.

WMT80 - Running a Woodworking Business

- Students create a marketing plan for a woodworking business.
- Students describe a process for determining and meeting customer needs.
- Students describe contract management and subcontracting processes.
- Students describe the financial processes of a woodworking business.
- Students identify components of a business plan.

WMT87 - Woodworking Machine Maintenance and Repair

- Recognizes various safety hazards and how to reduce the risk of exposure to those risks.
- Utilizes the manufacturer's specifications to select proper tools and materials for various maintenance and repair tasks.
- Demonstrates their ability to perform woodworking machine maintenance and repair.
- Practices troubleshooting common maintenance and repair issues with various woodworking machines.

WMT100 - Woodworking Essentials

- Students will accurately measure the dimensions of a board or manmade sheet material and calculate the quantity of material
- Students will safely mill rough lumber to specified dimensions
- Students will set up and safely operate common woodworking machinery
- Students will create basic woodworking joinery in solid wood and manmade sheet materials.

WMT101 - Introduction to Woodworking

- \bullet Students operate common woodworking machinery and tools safely.
- Students calculate board footage.
- Students convert rough lumber to a flat, straight and square-edged piece suitable for project use.
- Students analyze project drawings to identify required parts and part sizes.
- Students prepare for and utilize adhesives to join wooden parts.
- Students utilize the appropriate tools and abrasives to smooth wood in preparation for finishing.

WMT102 - Introduction to Solid Wood Casegoods

- Students analyze project drawings to identify required parts and part sizes.
- Students construct and install a web frame in a casework piece.
- Students create a solid-wood frame and panel door.
- Students install a door in a solid-wood casework piece using a pair of butt hinges.
- Students create a dado in a solid wood panel using a handheld router.
- Students install wood screws correctly using a pilot hole, clearance hole, counter bore and countersink.

• Students build a casegood project to meet the requirements of specified planning documents.

WMT102L - Casegood Manufacturing Lab

- Students complete a cabinet per their planning documents, to an improved level of craftsmanship over previous projects.
- Students create all the planning documents for a solid wood case, with an estimate of the build schedule.
- Students prepare a project for finishing and apply an oil-varnish blend finish, consistently sealing all surfaces with no rough areas.

WMT103 - Introduction to Tables

- Students convert rough lumber to a flat, straight, square-edged piece of a specified size.
- Students analyze project drawings to identify required parts and part sizes.
- Students edge-glue lumber to produce a flat panel.
- Students construct a mortise-and-tenon joint suitable for leg-and-apron joinery.
- Students construct a solid-wood drawer to fit an existing opening.
- · Students prepare for and apply an oil finish to a table project.
- Students build a table project to meet the requirements of specified planning documents.

WMT103L - Table Manufacturing Lab

- Students complete a table per their planning documents, to an improved level of craftsmanship over previous projects.
- Students create all the planning documents for a table, with an estimate of the build schedule.
- Students prepare a project for finishing and apply an oil-varnish blend finish, consistently sealing all surfaces with no rough areas.

WMT107 - Wood Finishing

- Students change the color of wood with stains, dyes, and chemicals.
- Students apply a membrane finish with a spray gun.
- Students apply a membrane finish with a brush.
- Students select, prepare for, and apply the appropriate finish for a furniture or cabinet project.

WMT108 - Wood Carving for Furniture

- Students carve a Newport shell or similar design.
- Students carve a well-defined low-relief flower.
- Students create accurate carved letters.
- Students describe the different types of woodcarving, and the tools and materials used in woodcarving.
- Students prepare a carved surface for finishing and apply the appropriate finish.
- Students utilize the chip carving technique to create geometric patterns.

WMT111L - Introduction to Woodworking Lab

- Students operate common woodworking machinery and tools safely.
- Students complete a furniture or accessory project
- Students prepare a project for finishing and apply an oil-varnish blend finish
- Students mill a rough board to specified dimensions

WMT117 - Woodworking Appreciation

- Students analyze methods of furniture fabrication.
- Students describe economic factors that influence the materials, methods, and style of an article.
- Students identify the predominate materials used in the production of architecture and furniture.
- Students interpret historical design styles and characterize them by age or cultural location.
- Students will successfully identify the materials, methods of fabrication, function, style, and significance of historically and culturally important architecture, furniture, and wooden decorative arts.

WMT118 - Introduction to Woodturning

• Students set up and operate the woodturning lathe to create a spindle project.

- Students identify parts of the lathe, turning tools, and turning equipment.
- · Students select and prepare materials for faceplate or spindle turning.
- Students set up and operate the woodturning lathe to create a bowl project.

WMT119L - Introduction to Woodturning Lab

- Students select and prepare materials for faceplate or spindle turning.
- Students set up and operate the woodturning lathe to create a bowl or spindle project.
- Students identify parts of the lathe, turning tools, and turning equipment.
- Students prepare for and apply a finish to a woodturning project.

WMT123 - Decorative Boxes

- Students design and build a mitered-corner box.
- Students design and build a box with finger-jointed corners.
- Students design and build a box with mortise-and-tenon joinery.
- Students describe at least twelve methods to create small boxes.
- Students design a box to meet a specific object containment need.
- Students select and install appropriate box hardware.
- Students demonstrate safe operating techniques for machining small parts.

WMT130 - Furniture Design

- Design a furniture product and prepare a portfolio presentation that includes concept drawings, detailed orthographic and isometric working drawings, and a manufacturing plan.
- Create isometric, orthographic, and perspective drawings using drafting tools.
- Demonstrate practical knowledge of formal design elements and principles in different furniture forms.
- Create scale models of conceptual furniture pieces.
- Identify attributes of significant furniture styles.
- Prepare and present a design portfolio including concept sketches, scale drawings, and a scale model and/or full-sized drawing of a chair, table, and casegood.

WMT135 - Windsor Chair

- Students will accurately construct the jigs necessary to create a bow-back Windsor Chair
- Students will utilize traditional hand tools to create the parts for a Windsor Chair
- Students will create a Windsor Chair arm and back bow by steam-bending wood
- Students will construct a bow-back Windsor Chair and apply a traditional milk-paint finish

WMT135L - Windsor Chair Lab

- Students will accurately construct the jigs necessary to create a Windsor chair variant
- Students utilize traditional hand tools to create the parts for a Windsor chair variant
- Students create Windsor chair components by steam-bending wood
- Students construct a Windsor chair variant and apply a traditional milk-paint finish

WMT144 - Jigs and Fixtures

- A. Students will create a table saw sled or equivalent fixture that fits a particular machine and is accurate to industry standard
- B. Students will describe the most important measurements necessary to tune-up a table saw, bandsaw, jointer, and planer

WMT151 - Introduction to Faceframe Cabinetmaking

- Students operate common woodworking machinery and tools safely.
- Students analyze project drawings to identify required parts and part sizes.
- · Students create a cut list, bill of materials, plan of procedure, and panel optimization drawing for a cabinet project.
- Students convert rough lumber to a flat, straight, square-edged piece of a specified size.

- Students design and build a face frame cabinet with a drawer and a frame-and-panel door.
- · Students install a cabinet door using Euro hinges.
- Students install a cabinet drawer using drawer runner hardware.

WMT153 - 32mm System of Cabinetmaking

- Students will convert imperial measurements to metric measurements and vice versa.
- Students will design and build a 32mm-system cabinet.
- Students will install a door using Euro hinges and 32mm system rules.
- Students will construct and install a drawer using drawer runner hardware mounted in line-bored system holes.
- · Students will describe and compare the characteristics of different sheet materials used in cabinetmaking.
- · Students will describe and compare different materials and processes used for edge banding cabinet parts.

WMT155 - Architectural Millwork

- · Students will design, select, and install base, case, crown, and applied moldings
- Students will create special moldings per a design specification
- · Students will install a passage door
- Students will demonstrate an understanding of standard residential and commercial framing systems
- · Students will create a coped crown molding joint

WMT157 - Passage Door

• Ninety percent of students will successfully design and build a passage door to industry standards as specified in the course.

WMT182 - Alphacam and the CNC Router

- Students will design and execute a three-dimensional wood product.
- Students will produce a full set of CAD/CAM drawings in Alphacam.
- Students will analyze tooling and material properties to evaluate and refine tool paths.
- Students will operate the CNC router; including start-up, homing, tool offset procedures as well as loading tooling and programs.

WMT182L - CNC Woodworking Lab

- Students will create all the planning documents for a sign, furniture piece, or wood cabinet, with an estimate of the build schedule.
- Students will complete a sign, furniture piece, or wood cabinet per their planning documents.
- Students will prepare a project for finishing and apply an appropriate finish on raw wood surfaces, consistently sealing all surfaces with no rough areas.
- Students will evaluate a completed project regarding craftsmanship and aesthetic design.

WMT183 - SketchUp for Woodworkers

- Students will prepare the SketchUp program interface for use in creating woodworking project models
- Students will create three-dimensional parts with joinery and demonstrate the process of modifying the parts
- Students will design and model a three-dimensional cabinet project, including all parts and associated joinery
- Students will create the planning documents necessary to build a project, including dimensioned drawings, materials, cut lists, and relevant scenes

WMT184 - Introduction to Digital Fabrication

- Describe the history and importance of automated woodworking using CAD/CAM software and the CNC router
- Demonstrate a working knowledge of hardware and software systems used in CNC-based woodworking
- · Create and machine virtually a safety sign project
- Create and machine virtually a textured wood panel
- Produce a set of drawings for selected project
- Produce numerical control (NC) code for project using CAM software

WMT201 - Woodworking with Hand Tools

• Students analyze the condition of a chisel, determine the steps necessary to sharpen the edge, and demonstrate the correct procedure.

- Students sharpen and set up a bench plane to plane the face of a board without leaving tracks.
- Students sharpen and set up a block plane blade to cleanly cut end grain.
- Students demonstrate the steps necessary to finish a rough board to specified dimensions using hand planes.
- Students lay out and cut by hand a mortise-and-tenon joint.
- · Students lay out and cut by hand a set of through-dovetails.

WMT202 - Advanced Furniture Casegoods

- Students will successfully design and build a solid wood cabinet with a door and a drawer to meet industry standards as specified in this course.
- Students describe and compare different construction options for a solid-wood casegood project.
- Students design a casegood project for a given set of requirements and create the necessary planning documents(drawing, bill of materials, and plan of procedure).
- Students safely and accurately build a casegood project, selecting lumber for the project that complements the aesthetics.
- Students describe and compare different types of hinges and door installation options used in solid-wood casegood projects.
- Students prepare the surfaces of a project for finishing and apply the appropriate finish for the intended used of the project.

WMT203 - Wood Veneering

- Select and apply solid wood edge banding to a substrate, before or after veneering the substrate surfaces.
- Students create a four-piece match with veneer and apply filleti and surface banding to the piece.
- Students create a sunburst pattern using at least eight pieces of veneer.
- Students describe the advantages and disadvantages of using wood veneer.
- Students describe the tools and equipment, and the types of veneer used in the construction of furniture and related projects.
- Students prepare veneer and attach it to a substrate using the appropriate adhesive and either a caul press or vacuum bag.
- Students prepare for and apply the appropriate finish to a veneered surface.

WMT204 - Advanced Tables

- Students will successfully design and build a table of their own design to industry standards as specified in this course.
- Students describe the different table types, along with the ergonomics and design considerations of each.
- Students describe how wood technology, specifically wood movement, affects table design and construction.
- Students describe the joinery commonly used in table construction and the methods used to create the joinery.
- Students describe various options for creating expanding tables.
- Students create the planning documents for the creation of a table to meet specific criteria.
- Students build a table of their own design, incorporating advanced design or building techniques.
- Students prepare a table for finishing and apply the appropriate finish.

WMT205 - Veneering and Marquetry

- A. Students piece together veneer in a specified pattern and attach it to a substrate using the appropriate adhesive and either a caul press or vacuum bag
- B. Students select and apply solid wood edge banding to a substrate, before or after veneering the substrate surfaces
- C. Students create a four-piece match with veneer and apply filleti and surface banding to the piece
- D. Students create a sunburst pattern using at least eight pieces of veneer.
- E. Students create parquetry or marquetry patterns, selecting the appropriate veneers for each part
- F. Students prepare for and apply a finish to a veneered surface

WMT211 - The Workbench Class

- Eighty percent (80%) of students will successfully design and construct a workbench to industry standards as specified in the course.
- Students explain the history and evolution of workbench design.
- Students compare and contrast work-holding options for workbenches.

- Students design and create the planning documents for a workbench.
- Students compare and contrast material options for workbenches.
- Students create large-scale joinery for use in workbench construction.
- Students successfully design and construct a workbench and apply the appropriate finish.

WMT212 - Routers and Router Tables

- Students describe the characteristics and features to be considered when designing a router table for a particular use.
- Students will develop a comprehensive project plan for construction of a heavy-duty router table with attendant jigs, fixtures, and top layout.
- Students describe various router table construction methods.
- Students design a router table to meet the needs of a furniture maker or cabinetmaker.
- Students build a router table per a project plan.
- Students select the correct router type and routing process for a given situation.

WMT221 - Advanced Handtools - Handplanes

- Students will sharpen and set up a handplane to accurately smooth a board with difficult grain.
- Students will build a wooden handplane and adjusting hammer, and set up the plane to smooth the face or edge of a board.
- Students will build and use tooling to accurately square or shape the end of a board.
- Students will create a small box with mitered corners, using the tools created in the class.

WMT222 - Advanced Handtools - Joinery

- Students will build a project that incorporates at least three types of joinery, utilizing machine and handtools as appropriate.
- Students will describe joinery used in furniture construction and how wood technology plays a role in its selection and configuration.
- Students will lay out and cut a half lap joint and a mortise and tenon joint using only hand tools.
- Students will lay out and cut a half lap joint and a mortise and tenon joint with woodworking machinery, using handtools to increase the accuracy of the joinery.

WMT223 - Advanced Handtools - Layout Tools

- Describe common layout tools and explain their use in furniture construction
- Demonstrate the use of common layout tools for use in constructing joinery for furniture construction
- Build various layout tools, including a straightedge, tri-square, marking knife, and marking gauge
- Design and build specialty layout tools for use in a specific task, like dovetail layout

WMT224 - Advanced Handtools - Dovetails

- Describe and compare the tools required to create dovetail joinery
- Prepare lumber, then lay out, cut, and assemble through, half-blind, houndstooth, and mitered dovetails
- Create a jewelry or similar box with hand-cut dovetailed corner joinery

WMT229L - Comprehensive Woodworking Manufacturing Specialty Lab

- Students demonstrate increased competency in woodworking operations.
- Students identify design elements that affect the comfort and functionality of a project.
- Students design and construct a woodworking project.

WMT231 - Outdoor Seating

- Students build an outdoor seating project per a specified drawing.
- Students create a full-size drawing of a chair.
- Students create mortise-and-tenon and other joinery for an outdoor seating project.
- Students create patterns for machining chair parts, based on a specified drawing.
- Students describe the ergonomics of long- and short-term seating.
- Students identify wood suitable for outdoor use.

• Students will prepare a project for finishing and apply a finish suitable for outdoor use.

WMT232 - Chair Design and Construction

- Students will identify key anatomical characteristics of chair design
- Students will create a full-size drawing of a chair that includes angled joinery
- Students will create patterns and jigs for machining specific chair parts
- Students will build specific joinery for chair making, including angled mortise and tenon joints
- Students will build a chair per specified planning documents
- Students will demonstrate the ability to prepare for, select, and apply finish to a chair

WMT233 - Morris Chair

- Students analyze lumber species and grain patterns to select appropriate materials for a Morris chair.
- Students create joinery required to construct a Morris chair.
- Students identify key design principles of the Arts and Crafts movement as they relate to furniture.
- Students produce a full-scale drawing of a Morris chair.
- Students will design, construct, and finish a chair based on the original Morris recliner.

WMT235 - Windsor Chair

- Students will build a Windsor chair to industry standards as specified in the course.
- · Students evaluate the advantages and disadvantages of different woods used in Windsor chairmaking.,
- Students describe the historical development of the Windsor chair.
- Students make chair parts using traditional hand tools.
- Students make a Windsor chair arm and back bow by steam-bending wood.
- Students construct a Windsor chair.

WMT237 - Traditional American Furniture

- Students analyze and select finishes appropriate to the project.
- Students build a traditional furniture project using hand and power tools.
- Students create advanced mortise and tenon joinery.
- Students identify the pros and cons of hand-cut and machine-cut processes in building traditional furniture.
- Students measure existing furniture pieces to create working drawings.
- Students use hand tools to form and shape a furniture project.

WMT239L - Traditional Furniture Lab

- Perform traditional woodworking procedures using hand tools
- Design furniture pieces in traditional furniture forms
- Choose appropriate materials for traditional furniture projects

WMT244 - Chest of Drawers

- Students describe and compare different construction options for a solid-wood chest of drawers.
- Students design a chest of drawers for a given set of requirements and create the necessary planning documents (drawing, bill of materials, and plan of procedure).
- Students safely and accurately build a chest of drawers, selecting lumber for the project that complements the aesthetics of the piece.
- Students prepare the surfaces of a project for finishing and apply the appropriate finish for the intended use of the project.

WMT245 - Curved and Tapered Forms for Furniture

- A. Students build a piece of furniture incorporating tapered lamination, bent lamination, cove-cut, and/or coopering techniques and apply an appropriate finish
- B. Produce curved furniture parts using the bent lamination process
- Students calculate tapers and produce appropriate cutting fixtures

- D. Students create bending forms using appropriate materials
- E. Students lay out and safely produce cove-cut parts on the table saw
- F. Students choose appropriate species and figure type of wood to complement a curvilinear design

WMT246 - Sculptural Rocking Chair

- Students will design a rocking chair and create a complete set of project drawings
- Students will create a plan of procedure and a bill of materials estimating the chair's cost
- Students will create the necessary jigs and fixtures for building a rocking chair
- Students will build a sculptural rocking chair per their planning documents
- Students will prepare for and apply the appropriate finish for their rocking chair

WMT249L - Furniture Manufacturing Specialty Lab

- Students demonstrate safely and accurately convert rough lumber to a flat, straight, square-edged piece of a specified size.
- Students create the planning documents for a furniture project, with an estimate of the build schedule.
- Students describe and contrast design elements corresponding to the form and function of a piece.

WMT250 - Intermediate Faceframe Cabinetmaking

- Students design and build a group of kitchen cabinets using face-frame construction methods.
- Students prepare a job proposal and bid/quote.
- Students select and install appropriate door and drawer hardware.
- Students install specialty hardware such as lazy susans and drop-front trays.
- Students install a set of kitchen cabinets.
- Students design and lay out a small cabinetmaking facility.

WMT252 - Intermediate 32mm System of Cabinetmaking

- Students will assemble and install a set of 32mm cabinets.
- Students will compare the various certification/construction standards in cabinetmaking.
- Students will demonstrate the installation of moldings and trim for use in 32mm cabinet construction.
- Students will describe millwork and cabinetmaking terminology as related to the 32mm system of cabinetmaking.
- Students will describe the materials, hardware, and joinery used for 32mm cabinetmaking.
- Students will describe the requirements and standards specified in the 32mm system.
- Students will design and build a set of cabinets, based on the 32mm system.

WMT258 - Mantels and Wall Systems

- Students demonstrate construction of rough framing as it relates to a mantel or wall system.
- Students prepare planning documents for a mantel project.

WMT269L - Cabinet Manufacturing Specialty Lab

- Students demonstrate increased competency in woodworking operations.
- Students identify design elements that affect the comfort and functionality of a project.
- Students design and construct a woodworking cabinet project.
- Students estimate production and labor costs.

WMT281 - Intermediate Cabinet Vision

- Students will use Cabinet Vision to create a kitchen cabinet design that meets specified criteria
- Students will select and modify construction parameters to meet specified needs
- Students will create the necessary code to run a CNC router for the manufacture of cabinet parts
- Students will manipulate system parameters, machine catalogs, and tool catalogs to create a construction and manufacturing methodology

WMT282 - Intermediate Alphacam and the CNC Router

• Students will create the planning documents necessary to CNC machine a project, including setup sheets, materials, tool lists, and relevant information.

- Students will design and machine an object made out of hardwood applying toolpaths in Alphacam.
- Students will design and machine a three-dimensional wood product applying toolpaths in Alphacam.
- Students will set-up jig and fixtures, home, set tool offsets, load tooling, program and material and operate the CNC router.

WMT282L - Intermediate CNC Woodworking Lab

- Students will identify elements of design that correlate to the form and function of a product produced from solid wood materials utilizing CAD/CAM for design and CNC machining for manufacturing.
- Students will design a sign, furniture piece, or wood cabinet from solid wood materials that meets a given set of requirements.
- Students will create 3D CAD/CAM drawing, machining, CNC Code and reports needed to CNC machine a solid wood product.
- Students will create fixtures and hold down methods and CNC machine a solid wood product.

WMT291 - Production Cabinetmaking

- A. Students demonstrate appropriate interactions with team members and client to create a cabinet project
- B. Students research best prices for materials and supplies and locate suppliers from which to purchase items
- C. Students create and assemble parts per production drawings
- D. Students install hardware per manufacturer's specifications
- E. Students maintain current and accurate project records
- F. Students describe and perform the processes necessary for installation of a multi-piece cabinet project

WMT292 - Production - Special Projects

- A. Students demonstrate appropriate interactions with team members and client to create a cabinet project
- B. Students research best prices for materials and supplies and locate suppliers from which to purchase items
- C. Students create and assemble parts per production drawings
- D. Students install hardware per manufacturer's specifications
- E. Students maintain current and accurate project records
- F. Students describe and perform the processes necessary for installation of a specified project