



Western Technical College

31409323 Residential Cabinetmaking

Course Outcome Summary

Course Information

Description	This course introduces students to design concepts and construction methods used in residential cabinetmaking. The application of manufactured wood products, hardware, cabinet case, drawer and door construction, and assembly of residential cabinetry will be applied.
Career Cluster	Architecture and Construction
Instructional Level	Technical Diploma Courses
Total Credits	5
Total Hours	180

Textbooks

No textbook required.

Learner Supplies

Safety glasses with side eye protection that meet Z87 OSHA guidelines. **Vendor:** Campus Shop. Required.

25' - 1" tape measure. **Vendor:** To be discussed in class. Required.

Scientific Calculator - \$20. **Vendor:** Campus Shop. Required.

Proper work boots - \$35.00-75.00. **Vendor:** To be discussed in class. Required.

Success Abilities

1. Cultivate Passion: Enhance Personal Connections
2. Cultivate Passion: Expand a Growth-Mindset
3. Cultivate Passion: Increase Self-Awareness
4. Live Responsibly: Develop Resilience
5. Refine Professionalism: Improve Critical Thinking
6. Refine Professionalism: Participate Collaboratively
7. Refine Professionalism: Practice Effective Communication

High Impact Practices

1. Community Based Learning Project: a key learning outcome of this course is to connect academic learning and civic development while simultaneously addressing a community partner's needs, interests, or problems.
2. Learning Community: these courses are designed to enhance your learning experience in which a cohort of peers complete two or more courses that are linked through projects, themes, or program emphasis.
3. Work-Based Learning: this course applies your learning to your desired profession by working in industry placements such as internships, practicums, clinicals, or co-ops.

Program Outcomes

1. Use hand and power tools and equipment
2. Apply industry recognized safety practices and procedures
3. Analyze sustainable building practices
4. Calculate the cost of a project
5. Recommend a plan of procedure to eliminate wasted time and materials
6. Demonstrate industry cabinetmaking practices and material application

Course Competencies

1. Demonstrate safe use of all stationary and portable shop equipment.

Assessment Strategies

- 1.1. On-the-job Performance
- 1.2. Skill Demonstration

Criteria

You will know you are successful when

- 1.1. you use stationary power equipment safely, preventing bodily injury to himself/herself and others
- 1.2. you use portable power equipment safely, preventing bodily injury to himself/herself and others
- 1.3. you perform shop operations in a manner to prevent the abuse or destruction of portable and stationary equipment

Learning Objectives

- 1.a. Use the radial arm saw, jointer, planer, table saw, band saw, drill press, wide belt sander, and chop saw in a safe and effective manner
- 1.b. Use portable sanders, biscuit jointers, routers, drills, finishing systems, and hand tools in a safe and effective manner.
- 1.c. Observe all shop safety guidelines

2. Perform shop operations using proper measuring and layout techniques.

Assessment Strategies

- 2.1. Skill Demonstration
- 2.2. Written Objective Test (score 70% or higher)

Criteria

You will know you are successful when

- 2.1. you produce a product that is square
- 2.2. you produce a product that meets size requirements
- 2.3. you produce a quality product that meets the required specifications

Learning Objectives

- 2.a. Demonstrate proper use of combination square, try-square, speed square, and compass to perform accurate layout operations
- 2.b. Demonstrate proper use of tape measure, folding rule, and equipment scales to correctly size components
- 2.c. Apply various squaring techniques to create a quality product

3. Produce finish quality stock from rough-sawn lumber.

Assessment Strategies

- 3.1. Skill Demonstration
- 3.2. On-the-job Performance

Criteria

You will know you are successful when

- 3.1. you create two parallel, flat faces by removing all cups and bows in the board with the use the jointer and planer in the proper sequence
- 3.2. you create two parallel edges on the board that are at a 90 degree angle to the face of the board using the jointer and table saw in the proper sequence
- 3.3. you reduce the board to the specified thickness and removes all mill/machine marks from both faces with the wide belt sander
- 3.4. you cut the board to the specified length with each end cut square across the width and through the thickness of the board with the chop saw
- 3.5. you produce a finished product free of defects

Learning Objectives

- 3.a. Examine a piece of lumber to maximize yield
- 3.b. Face and plane a board to desired thickness to create two flat, parallel faces
- 3.c. Joint the edge and rip a board to desired width to create two parallel edges
- 3.d. Sand a board to specified thickness, removing all mill marks
- 3.e. Cut board to specified length

4. Produce various woodworking joints.

Assessment Strategies

- 4.1. Skill Demonstration
- 4.2. On-the-job Performance

Criteria

You will know you are successful when

- 4.1. you create woodworking joints as specified using necessary equipment, jigs, and fixtures
- 4.2. you create all assigned woodworking joints as specified, meeting tolerance requirements
- 4.3. you use woodworking joints to produce what has been designed

Learning Objectives

- 4.a. Set up equipment, jigs, and fixtures to create various woodworking joints
- 4.b. Utilize shop equipment to produce a rabbet, dado, miter, dovetail, half-lap, dowel, biscuit, and pocket-hole wood working joint
- 4.c. Create woodworking joints that meet specified tolerances

5. Apply various gluing and clamping methods.

Assessment Strategies

- 5.1. Skill Demonstration
- 5.2. On-the-job Performance

Criteria

You will know you are successful when

- 5.1. you produce a multiple board assembly with proper wood grain orientation
- 5.2. you apply the proper amount of glue to ensure a strong connection
- 5.3. you use appropriate clamps and clamping pressure to successfully hold joint in place until the glue is set
- 5.4. you produce a multiple board assembly that is flat, durable, and meets specified aesthetic qualities

Learning Objectives

- 5.a. Align grain patterns in a multiple board assembly
- 5.b. Apply glue
- 5.c. Utilize appropriate clamps and clamping pressure for certain applications

6. Create a plan view scaled drawing of a kitchen.

Assessment Strategies

- 6.1. Drawing/Illustration
- 6.2. Written Objective Test (score 70% or higher)

Criteria

You will know you are successful when:

- 6.1. you visit the jobsite to determine an acceptable cabinet layout and kitchen design for the house.
- 6.2. you identify standard dimensions of upper and base cabinets.
- 6.3. you use the architect's scale to create a scaled drawing of the kitchen to be built.

Learning Objectives

- 6.a. Demonstrate the proper use of an architect's scale.
- 6.b. Discuss common dimensions for base and upper cabinets.
- 6.c. Discuss the common dimensions and locations of kitchen appliances.
- 6.d. Determine the function and proper layout of a kitchen after visiting the jobsite.

7. Acquire a basic understanding of manufactured panel products used in the cabinetmaking industry.

Assessment Strategies

- 7.1. Skill Demonstration
- 7.2. Written Objective Test (score 70% or higher)

Criteria

You will know you are successful when:

- 7.1. you identify and select appropriate carcass and substrate materials for a project.
- 7.2. you cut and shape material with minimal flaws in a safe and effective manner.

Learning Objectives

- 7.a. Identify the different types of panel products used in residential cabinetmaking.
- 7.b. Determine the appropriate materials for specific applications.
- 7.c. Identify safe methods of cutting panel products to the correct sizes.

8. Determine the amount of materials needed for a cabinet making project.

Assessment Strategies

- 8.1. Written Product
- 8.2. Written Objective Test (score 70% or higher)

Criteria

You will know you are successful when:

- 8.1. you identify the proper amounts of sheet stock and lumber needed to complete a project.

- 8.2. you determine how sheet stock should be cut to produce the least amount of waste for a project.
- 8.3. you create an accurate list of materials needed to complete a project.

Learning Objectives

- 8.a. Determine the most efficient use of materials needed to construct a cabinet.
- 8.b. Calculate the correct quantity of board ft. of lumber needed for a project.
- 8.c. Calculate the correct quantity of square footage of sheet stock needed for a project.
- 8.d. Prepare a complete list of materials needed to construct a cabinet.

9. Complete a cutting ticket for a cabinet making project.

Assessment Strategies

- 9.1. Written Product
- 9.2. Written Objective Test (score 70% or higher)

Criteria

You will know you are successful when:

- 9.1. you produce an accurate cutting ticket for a cabinet.
- 9.2. you produce a cabinet to specified dimensions from component dimensions stated on the cutting ticket.

Learning Objectives

- 9.a. Interpret a cabinet drawing.
- 9.b. Differentiate between parts of a cabinet made from lumber and sheet stock.
- 9.c. Acquire the accurate dimensions of each component needed to construct a cabinet.

10. Construct a residential base cabinet.

Assessment Strategies

- 10.1. Project

Criteria

You will know you are successful when:

- 10.1. you use safe practices to cut or shape all cabinet parts to the appropriate dimension.
- 10.2. you assemble case and face frame components using wood joinery methods that are supplied by instructor.
- 10.3. you produce a cabinet that is dimensionally accurate, functional, and shows minimum flaws or blemishes.
- 10.4. you apply wood finish to the cabinet as instructed
- 10.5. you ensure that all cabinet hardware functions properly

Learning Objectives

- 10.a. Determine the correct dimensions for case items to be cut.
- 10.b. Determine proper joinery used to construct cabinet.
- 10.c. Build a base cabinet face frame.
- 10.d. Assemble panel products and face frame to produce a finished cabinet.
- 10.e. Apply wood finish to the cabinet
- 10.f. Install cabinet hardware

11. Construct a residential upper cabinet.

Assessment Strategies

- 11.1. Project

Criteria

You will know you are successful when:

- 11.1. you use safe practices to cut or shape all cabinet parts to the appropriate dimension.
- 11.2. you assemble case and face frame components using wood joinery methods as directed by instructor.
- 11.3. you produce a cabinet that is dimensionally accurate, functional, and shows minimum flaws or blemishes.
- 11.4. You apply wood finish to the cabinet as instructed
- 11.5. you ensure that all cabinet hardware is functioning properly

Learning Objectives

- 11.a. Determine the correct dimensions for case items to be cut.
- 11.b. Determine proper joinery used to construct cabinet.
- 11.c. Build an upper cabinet face frame.
- 11.d. Assemble panel products and face frame to produce a finished cabinet.
- 11.e. Install cabinet hardware
- 11.f. Create custom crown molding for the cabinet
- 11.g. Apply wood finish

12. Build and install a cabinet door.

Assessment Strategies

- 12.1. Product

Criteria

You will know you are successful when:

- 12.1. you produce a door that is flat, square, and stable.
- 12.2. you produce a door that has minimal defects and blemishes.
- 12.3. you produce a door to specified dimensions.
- 12.4. you install a door that operates as designed.

Learning Objectives

- 12.a. Identify different styles of cabinet doors.
- 12.b. Identify the components used in cabinet door construction.
- 12.c. Cut styles and rails to the appropriate size.
- 12.d. Utilize the shaper to create the pattern and cope cuts to produce a cabinet door frame.
- 12.e. Cut the door panel to the appropriate size.
- 12.f. Assemble a cabinet door.
- 12.g. Apply hardware and install door on cabinet

13. Build and install a cabinet drawer.

Assessment Strategies

- 13.1. Product

Criteria

You will know you are successful when:

- 13.1. you produce a drawer that is flat, square, and stable.
- 13.2. you produce a drawer that has minimal defects and blemishes.
- 13.3. you produce a drawer to specified dimensions.
- 13.4. you install a drawer that operates as designed.

Learning Objectives

- 13.a. Identify different types of joinery used in drawer construction
- 13.b. Cut drawer components to proper sizes
- 13.c. Assemble drawer components
- 13.d. Apply hardware and install cabinet drawer
- 13.e. Install auxiliary drawer front