



PTE #424

Cabinetmaking Curriculum Guide

Idaho Division of Professional Technical Education
650 West State Street
Boise Idaho 83720

2007

Cabinet Making

Cabinet Making Level I

COURSE DESCRIPTION:

The purpose of this course is to develop the competencies essential to the cabinetmaking industry. These competencies relate to safety practices, tool and equipment utilization, identification of building materials, fasteners and hardware, basic math, communication, blueprint reading, and culminates into the construction of cabinets.

APPLY SHOP AND OCCUPATIONAL SAFETY SKILLS - The student will be able to:

- Maintain a clean, orderly, and safe work area.
- Transport, handle, and store materials safely.
- Operate a fire extinguisher.
- Become familiar with basic first-aid procedures.
- Identify common safety hazards.
- Identify and explain the proper use of common personal protective equipment (hard hats, safety glasses, safety shoes, etc.)
- Describe Idaho's "Right-to-Know", Law, including the Material Safety Data Sheets (MSDS).
- Explain the purpose of the Occupational Safety and Health Administration (OSHA).
- Identify health-related problems that may result from exposure to hazardous materials.
- Describe the proper precautions for handling hazardous materials.
- Explain eligibility and the procedures for obtaining worker's compensation.
- Explain the importance of complying with ADA requirements for handicapped accessibility.

NOTE: Recommend students attend OSHA 10-hour Construction Safety Course

APPLY APPROPRIATE BASIC MATH SKILLS – The student will be able to:

- Solve basic math problems related to carpentry and/or cabinetmaking, with and without a calculator; include basic geometry and algebra skills.
- Solve problems, using board, linear, foot, square-foot, and cubic-foot measurements.
- Measure horizontal and vertical surfaces, using millimeters, centimeters, feet, and inches.
- Identify fractions, decimals, and percentages.

APPLY APPROPRIATE COMMUNICATION SKILLS – The student will be able to:

- Write logical and understandable statements.
- Interpret the graphs, charts, diagrams, and tables commonly used in the carpentry industry.
- Follow written and oral instructions.
- Ask and answer questions coherently, directly, and concisely.

UTILIZE MANUAL AND POWER TOOLS – The student will be able to:

- Identify various hand and power tools.
- Read and use cabinet making measuring tools.
- Clean and care for tools and equipment.
- Demonstrate safe use of hand tools and of portable and stationary power tools.

FAMILIARIZE THE CHARACTERISTICS OF BUILDING MATERIALS – The student will be able to:

- Introduce the grades and species of lumber.
- Identify the actual and nominal sizes of lumber.
- Introduce various street goods and wood products.
- Identify defects that affect the durability and strength of lumber.
- Explain the effects of temperature, chemical, and moisture, on building materials.

DEMONSTRATE EMPLOYABILITY SKILLS AND HABITS – The student will be able to:

- Demonstrate productive work habits and positive attitudes.
- Identify ethical and responsible practices.
- Apply the principles of time management, work simplification, and teamwork when performing assigned tasks.
- Explain the importance of taking pride in the quality of work performed.
- Explain the importance of a drug-free workplace and industry policies toward drug and alcohol use.

BASIC DRAWING – The student will be able to:

- Interpret a basic working drawing.

PREPARE CABINETS FOR FINISH – The student will be able to:

- Fill nail and screw holes.
- Install wood plugs in prepared holes.

Sand a cabinet and joints for finish.
Select and apply proper filler.
Sand wood surfaces for finishing.
Stain, bleach, fill, and seal wood surfaces, as needed.

APPLY FINISHES – The student will be able to:

Apply various types of finishes, as applicable to program/facility and or project that may include:

- lacquer-based
- water-based
- oil-based
- enamel
- polyurethane

Apply the types of finishes that the local market demands.
Observe safety precautions when applying finishes, including wearing respirator and protective clothing approved by National Institute of Occupational Safety and Health (NIOSH).

MATERIAL FASTONERY/JOINERY – The student will be able to:

Identify types of glues and fasteners and describe their applications.

Fasten stock with glue and clamps.

Fasten stock and joints with appropriate fasteners, as applicable to program/facility and or project that may include:

- nails
- staples
- screws
- bolts
- fasteners

Fill and finish nail and screw holes with fillers and plugs.

Glue and clamp stock, using various techniques.

ASSEMBLE CABINET COMPONENTS – The student will be able to:

Install hardware, such as hinges, catches, pulls, knobs, and guides, on assembled cabinets.

Install fasteners.

Install drawers.

Fabricate various types of doors, as applicable to program/facility and or project that may include:

- overlay
- lipped
- flush

Fabricate adjustable shelving.

Fabricate glass panels.
Install specialty hardware, such as a lazy Susan, wire racks, and “pull-outs”.
Install sliding doors and track.

PLAN, DESIGN, AND LAY OUT CASEWORK – The student will be able to:

Develop a plan or procedure and a cut list for a specific job.
Select and match wood stock for compatibility of grain and color.

CONSTRUCT JOINTS – The student will be able to:

Construct various types of joints as applicable to program/facility and or project that may include:

butt	dovetail
dado	plate
rabbet	dowel
lap	pocket/joint
miter	cope joint
spline	box joint
tongue-and groove	screw
mortise-and tenon	

CUT AND ASSEMBLE CASEWORK COMPONENTS – The student will be able to use:

Frame stiles and rails.
End, top, and bottom panels.
Partitions and sleepers.
Shelves.
Skeleton frame stiles and rails.
A toe kick and a back panel.
Casework top or countertop and back splash.
Drawer front, sides, back, and bottom.
Wood drawer guides.

CONSTRUCT CABINET DRAWERS – The student will be able to:

Make various types of drawers, as applicable to program/facility and or project that may include:

5 & 6 piece drawers in which styles may include:
overlay
lip

flush

Construct drawer guides.

Introduction to roll-out trays.

CONSTRUCT CABINET DOORS – The student will be able to:

Fabricate solid, frame and panel, and glazed doors.

Construct flush, overlay, and inset-style doors.

Band edges of solid doors.

DEMONSTRATE PROBLEM-SOLVING SKILLS – The student will be able to:

Organize and plan multiple tasks, utilizing various resources such as time, personnel, and materials.

Analyze problems, identify the causes, and devise plans of action.

Identify obstacles, generate alternatives, and choose the best alternatives.

Cabinet Making Level II

COURSE DESCRIPTION:

The purpose of this course is to develop the competencies essential to the cabinetmaking industry. These competencies relate to the preparation of cabinets for finish and the application of the finish. The content includes safety in the use of these finishes, fillers and solvents. The utilization of safe tool and equipment practices. Includes training in the assembly of cabinet components and joints.

APPLY SHOP AND OCCUPATIONAL SAFETY SKILLS - The student will be able to:

- Maintain a clean, orderly, and safe work area.
- Transport, handle, and store materials safely.
- Operate a fire extinguisher.
- Qualify in basic first-aid procedures.
- Identify common safety hazards.
- Identify and explain the proper use of common personal protective equipment (hard hats, safety glasses, safety shoes, etc.)
- Describe Idaho's "Right-to-Know", Law, including the Material Safety Data Sheets (MSDS).
- Explain the purpose of the Occupational Safety and Health Administration (OSHA).
- Identify health-related problems that may result from exposure to hazardous materials.
- Describe the proper precautions for handling hazardous materials.
- Explain eligibility and the procedures for obtaining worker's compensation.
- Explain the importance of complying with ADA requirements for handicapped accessibility.

APPLY APPROPRIATE BASIC MATH SKILLS – The student will be able to:

- Solve basic math problems related to carpentry and/or cabinetmaking, with and without a calculator; include basic geometry and algebra skills.
- Solve problems, using board, linear, foot, square-foot, and cubic-foot measurements.
- Measure horizontal and vertical surfaces, using millimeters, centimeters, feet, and inches.

APPLY APPROPRIATE COMMUNICATION SKILLS – The student will be able to:

- Write logical and understandable statements.
- Interpret the graphs, charts, diagrams, and tables commonly used in the carpentry industry.

Follow written and oral instructions.
Ask and answer questions coherently, directly, and concisely.

BASIC DRAWING - The student will be able to:

Read an architect's scale.
Identify architectural and engineering elevations, perspectives, and schedules.
Identify lines and blueprint symbols.
Introduction to CAD drawing.

DEMONSTRATE EMPLOYABILITY SKILLS AND HABITS – The student will be able to:

Demonstrate productive work habits and positive attitudes.
Identify ethical and responsible practices.
Apply the principles of time management, work simplification, and teamwork when performing assigned tasks.
Explain the importance of taking pride in the quality of work performed.
Explain the importance of a drug-free workplace and industry policies toward drug and alcohol use.

PREPARE CABINETS FOR FINISH – The student will be able to:

Fill nail and screw holes.
Install wood plugs in prepared holes.
Sand a cabinet and joints for finish.
Select and apply proper filler.
Sand wood surfaces for finishing.
Stain, bleach, fill, and seal wood surfaces, as needed.

APPLY FINISHES – The student will be able to:

Apply various types of finishes, as applicable to program/facility and or project, that may include:
lacquer-based
water-based
oil-based
enamel
polyurethane

Apply the types of finishes that the local market demands.
Observe safety precautions when applying finishes, including wearing respirator and protective clothing approved by National Institute of Occupational Safety and Health (NIOSH).

MATERIAL FASTONERY/JOINERY – The student will be able to:

Identify types of glues and fasteners and describe their applications.

Fasten stock with glue and clamps.

Fasten stock and joints with appropriate fasteners, as applicable to program/facility and or project that may include:

nails

staples

screws

bolts

fasteners

Fill and finish nail and screw holes with fillers and plugs.

Glue and clamp stock, using various techniques.

ASSEMBLE CABINET COMPONENTS – The student will be able to:

Install hardware, such as hinges, catches, pulls, knobs, and guides, on assembled cabinets.

Install fasteners.

Install drawers.

Fabricate various types of doors, as applicable to program/facility and or project that may include:

overlay

lipped

flush

Fabricate adjustable shelving.

Fabricate glass panels.

Install specialty hardware, such as a lazy Susan, wire racks, and “pull-outs”.

Install sliding doors and track.

PLAN, DESIGN, AND LAY OUT CASEWORK – The student will be able to:

Develop a plan or procedure and a cut list for a specific job.

Select and match wood stock for compatibility of grain and color.

CONSTRUCT JOINTS – The student will be able to:

Construct various types of joints as applicable to program/facility and or project that may include:

butt

dado

rabbet

lap

miter

dovetail

plate

dowel

pocket/joint

cope joint

spline
tongue-and groove
mortise-and tenon

box joint
screw

CUT AND ASSEMBLE CASEWORK COMPONENTS – The student will be able to use:

Frame stiles and rails.
End, top, and bottom panels.
Partitions and sleepers.
Shelf.
Skeleton frame stiles and rails.
A toe kick and a back panel.
Casework top or countertop and back splash.
Drawer front, sides, back, and bottom.
Wood drawer guides.

CONSTRUCT CABINET DRAWERS – The student will be able to:

Make various types of drawers, as applicable to program/facility and or project that may include:

5 & 6 piece drawers in which styles may include:
overlay
lip
flush

Construct drawer guides.
Introduction to roll-out trays.

CONSTRUCT CABINET DOORS – The student will be able to:

Fabricate solid, frame and panel, and glazed doors.
Construct flush, overlay and, inset-style doors.
Band edges of solid doors.

DEMONSTRATE PROBLEM-SOLVING SKILLS – The student will be able to:

Organize and plan multiple tasks, utilizing various resources such as time, personnel, and materials.
Analyze problems, identify the causes, and devise plans of action.
Identify obstacles, generate alternatives, and choose the best alternatives.

Cabinet Making Level III

COURSE DESCRIPTION:

Is a project based course to develop in-depth knowledge and skills related to safety, manual and power tools, the construction industry in America, math applications, communication, and blueprint reading and to develop the competencies essential to the carpentry and cabinetmaking industry. These competencies relate to fasteners and hardware, employability skills, customer relations, and entrepreneurship.

APPLY SHOP AND OCCUPATIONAL SAFETY SKILLS - The student will be able to:

- Maintain a clean, orderly, and safe work area.
- Transport, handle, and store materials safely.
- Operate a fire extinguisher.
- Qualify in basic first-aid procedures.
- Identify common safety hazards.
- Identify and explain the proper use of common personal protective equipment (hard hats, safety glasses, safety shoes, etc.)
- Describe Idaho's "Right-to-Know", Law, including the Material Safety Data Sheets (MSDS).
- Explain the purpose of the Occupational Safety and Health Administration (OSHA).
- Identify health-related problems that may result from exposure to hazardous materials.
- Describe the proper precautions for handling hazardous materials.
- Explain eligibility and the procedures for obtaining worker's compensation.
- Explain the importance of complying with ADA requirements for handicapped accessibility.

APPLY APPROPRIATE BASIC MATH SKILLS – The student will be able to:

- Solve basic math problems related to carpentry and/or cabinetmaking, with and without a calculator; include basic geometry and algebra skills.
- Solve problems, using board, linear, foot, square-foot, and cubic-foot measurements.
- Measure horizontal and vertical surfaces, using millimeters, centimeters, feet, and inches.
- Solve problems for volume, weight, area, circumference, and perimeter measurements for rectangles, squares, and cylinders.
- Determine the correct purchase price of items, including the sales tax.

APPLY APPROPRIATE COMMUNICATION SKILLS – The student will be able to:

- Write logical and understandable statements.
- Interpret the graphs, charts, diagrams, and tables commonly used in the carpentry industry.
- Follow written and oral instructions.
- Ask and answer questions coherently, directly, and concisely.

DESCRIBE THE IMPORTANCE OF THE CONSTRUCTION INDUSTRY IN THE AMERICAN ECONOMY – The student will be able to:

- Describe the role of the construction industry within the free-enterprise system.
- Identify career-progression opportunities in the cabinetmaking industry.
- Describe current issues, topics, and materials in the building-construction industry.

BASIC DRAWING - The student will be able to:

- Read an architect's scale.
- Identify architectural and engineering elevations, perspectives, and schedules.
- Identify lines and blueprint symbols.
- Introduction to CAD drawing.

DEMONSTRATE EMPLOYABILITY SKILLS AND HABITS – The student will be able to:

- Conduct a job search and identify advanced-training opportunities, including apprenticeship programs, if appropriate.
- Obtain information about a job.
- Identify documents that may be required for a job application.
- Complete a job-application form.
- Demonstrate competence in job-interview techniques.
- Demonstrate productive work habits and positive attitudes.
- Demonstrate knowledge of how to make job changes appropriately.
- Identify ethical and responsible practices.
- Demonstrate acceptable hygiene practices and a professional appearance.
- Apply the principles of time management, work simplification, and teamwork when performing assigned tasks.
- Explain the importance of taking pride in the quality of work performed.
- Explain the importance of a drug-free workplace and industry policies toward drug and alcohol use.

Describe the ramifications of a poor driving record on employability opportunities.

DEMONSTRATE POSITIVE CUSTOMER-RELATIONS SKILLS – The student will be able to:

- Exercise self-control.
- Identify and demonstrate appropriate responses to criticism.
- Recognize basic human relations as they relate to success in the industry.
- Respond to customer complaints in a positive, professional manner.
- Demonstrate respect for people and property.

DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP – The student will be able to:

- Define “entrepreneurship”
- Describe the importance of entrepreneurship to the American economy and the role of small business in the free-enterprise system.
- Debate the advantages and disadvantages of business ownership.

PREPARE CABINETS FOR FINISH – The student will be able to:

- Fill nail and screw holes.
- Install wood plugs in prepared holes.
- Sand a cabinet and joints for finish.
- Select and apply proper filler.
- Sand wood surfaces for finishing.
- Stain, bleach, fill, and seal wood surfaces, as needed.

APPLY FINISHES – The student will be able to:

Apply various types of finishes, as applicable to program/facility and or project, that may include:

- lacquer-based
- water-based
- oil-based
- enamel
- polyurethane

- Apply the types of finishes that the local market demands.
- Observe safety precautions when applying finishes, including wearing respirator and protective clothing approved by National Institute of Occupational Safety and Health (NIOSH).

MATERIAL FASTONERY/JOINERY – The student will be able to:

Identify types of glues and fasteners and describe their applications.

Fasten stock with glue and clamps.

Fasten stock and joints with appropriate fasteners, as applicable to program/facility and or project that may include:

nails

staples

screws

bolts

fasteners

Fill and finish nail and screw holes with fillers and plugs.

Glue and clamp stock, using various techniques.

ASSEMBLE CABINET COMPONENTS – The student will be able to:

Install hardware, such as hinges, catches, pulls, knobs, and guides, on assembled cabinets.

Install fasteners.

Install drawers.

Fabricate various types of doors, as applicable to program/facility and or project that may include:

overlay

lipped

flush

Fabricate adjustable shelving.

Fabricate glass panels.

Install specialty hardware, such as a lazy Susan, wire racks, and “pull-outs”.

Install sliding doors and track.

INSTALL CABINETS – The students will be able to:

Load and secure casework for hauling.

Check walls and floors for level and plumb.

Determine fasteners for walls.

Install upper and lower cabinets and other casework.

Install countertops, including sink cutouts and back splash.

Cut and install molding and trim.

Adjust doors and drawers.

Clean work site.

APPLY LAMINATES – The student will be able to:

- Lay out and cut core stock to specifications.
- Lay out and cut laminate to specification.
- Apply adhesive.
- Apply laminate to core stock.
- Trim and file plastic laminate edges.
- Clean laminated surfaces.
- Laminate a curved surface.
- Repair laminate defects.

PLAN, DESIGN, AND LAY OUT CASEWORK – The student will be able to:

- Convert measurements from English to the metric system and from the metric system to the English system.
- Develop a plan or procedure and a cut list for a specific job.
- Estimate the materials required for the job.
- Estimate labor and materials cost, using computer-application programs, if available.
- Select and match wood stock for compatibility of grain and color.

CONSTRUCT JOINTS – The student will be able to:

Construct various types of joints as applicable to program/facility and or project that may include:

- | | |
|-------------------|--------------|
| butt | dovetail |
| dado | plate |
| rabbet | dowel |
| lap | pocket/joint |
| miter | cope joint |
| spline | box joint |
| tongue-and groove | screw |
| mortise-and tenon | |

CUT AND ASSEMBLE CASEWORK COMPONENTS – The student will be able to use:

- Frame stiles and rails.
- End, top, and bottom panels.
- Partitions and sleepers.
- Shelf.
- Skeleton frame stiles and rails.
- A toe kick and a back panel.
- Casework top or countertop and back splash.

Drawer front, sides, back, and bottom.
Wood drawer guides.

CONSTRUCT CABINET DRAWERS – The student will be able to:

Make various types of drawers, as applicable to program/facility and or project that may include:

5 & 6 piece drawers in which styles include:

overlay

lip

flush

Construct drawer guides.

Introduction to roll-out trays.

CONSTRUCT CABINET DOORS – The student will be able to:

Fabricate solid, frame and panel, and glazed doors.

Construct flush, overlay and, inset-styles doors.

Band edges of solid doors.

PERFORM MILLWORK OPERATIONS – The student will be able to:

Build shaped moldings to specifications.

Cut built-up moldings.

Cut a curved piece from solid stock.

Make a curved piece by saw kerfing.

Construct a curved piece, using curved segments.

Construct a curved piece by laminating thin strips.

DEMONSTRATE PROBLEM-SOLVING SKILLS – The student will be able to:

Organize and plan multiple tasks, utilizing various resources such as time, personnel, and materials.

Analyze problems, identify the causes, and devise plans of action.

Identify obstacles, generate alternatives, and choose the best alternatives.