Course Framework

Course Title **Grade Level** **Semesters (1-2-3-4)** **Prerequisite**	**Woods IV** 9-12 Woods III
Course Description	In Woods IV, students will build a curio cabinet for secretary desk from plans provided by the instructor. This project is designed to build on skills learned in Woods I, II and III. The project is designed to develop the problem solving skills and to teach each student how to develop a work schedule to complete this project during the required time period. The student is responsible for the cost of all materials. (Valees # I106)
District-approved Materials and/or Resources	Wood – Technology & Processes Feirer Glencoe / McGraw-Hill 2006

Unit Frameworks

Unit of Study: major topics	**Case Construction**: Students will follow plans to build a curio cabinet for the top of the secretary desk.	Resources that will support instruction Handout copies of curio cabinet for the secretary desk plan.
Illinois Learning Standards, Benchmarks, **National Standards Assessment Frameworks, or other standards that will be taught in this unit**	**1.B.4a** Preview reading materials, clarify meaning, analyze overall themes and coherence, and relate reading with information from other sources. **1.B.3d** Read age-appropriate material with fluency and accuracy. **4.A.4b** Apply listening skills in practical settings **4.A.1c** Follow oral instructions accurately. **4.A.4c** Follow complex oral instructions. **6.B.2** Solve one- and two-step problems involving whole numbers, fractions and decimals using addition, subtraction, multiplication and division. **6.C.3a** Select computational procedures and solve problems with whole numbers, fractions, decimals, percents and proportions. **7.A.3a** Measure length, capacity, weight/mass and angles using sophisticated instruments **7.C.5b** Determine how changes in one measure may affect other measures	
Objectives o **Conceptual** o **Factual** o **Procedural**	• Understand and apply the problem-solving process • Discuss common woodshop hazards and how to prevent problems. • Tell how to set up a safe workshop. • Discuss the use of first aid common workshop injuries • Correctly read drawings in order to layout materials • Make a bill of materials. • Use a formula for calculating board feet to figure lumber needs • List the main steps in designing, planning, and completing a woodworking project. • Accurately read measurements on a customary rule. • Select and use the correct measuring tool for a specific measuring task. • Correctly measure and mark stock for cutting. • Name the basic types of cuts made with saws. • Identify different types of nails. • Demonstrate the correct technique for driving nails into wood. • Describe the technique of toenailing • Drill Holes with a variety of hand tools as well as with a power drill. • Describe the qualities needed in a power drill for woodworking. • Identify several accessories available for power drills and explain how they are used in woodworking. • Plane the surface of a piece of stock using proper planning techniques. • Use a chisel correctly, observing all safety rules. • Sand the surface of a piece of stock, using proper sanding techniques. • Operate a portable belt sander, using proper sanding techniques and observing all safety rules.	

	• Identify the types of butt joints and tell how a butt joint can be strengthened. • Make an edge biscuit joint. • Make an edge dowel joint. • List the steps in making a dowel joint on a frame. • Layout a rabbet joint. • Make a rabbet joint using hand tools. • List power tools that can be used to cut rabbets. • Make a rabbet joint using power tools. • Assemble a rabbet joint. • Layout and cut a dado. • Make a blind dado joint. • Make a rabbet-and-dado joint. • Explain how to cut dadoes with power tools. • Explain the importance of accuracy when cutting miter joints. • Layout, cut, and assemble miter joints • Make a dovetail joint using a dovetail jig and a router with dovetail bit. • Build a project using simple casework construction. • List five methods of installing shelves within a bookcase. Construct a drawer • Make a paneled door. • Discuss tips and guidelines to be followed when working with screwdrivers a • Explain how a clearance hole should be drilled. • Describe the process of countersinking for flathead screws. • Demonstrate how to drive a wood screw. • Select the correct adhesive for specific gluing jobs. • Select appropriate clamps for holding glued parts. • Correctly glue up and clamp an edge joint. • Prepare a laminate for a wood project. • List the advantages of making a trial assembly. • Name and give examples of the two basic types of hardware needed to build a project. • Select an appropriate type of hinge to serve a specific purpose. • Install drawer knobs or pulls. • Select and install the appropriate type of repair plate for a specific purpose. • Identify the major parts of the planer. • Surface a board to thickness.

	• Explain the special procedure for planning thin stock. • Plane several short boards to the same thickness. • Identify the main parts of the jointer. • Describe face planning with a jointer. • Joint an edge. • Cut a bevel on a jointer. • Adjust the jointer to cut a rabbet. • Change a saw blade. • Rip wood to width with the table saw. • Crosscut wood to length with the table saw. • Make miter, bevel, and chamfer cuts with the table saw. • Use a dado head cutter on the table saw. • Cut rabbets and tenons on the table saw. • Describe the operation of the radial arm saw. • Make a straight crosscut on the radial-arm saw. • Make miter, bevel, and dado cuts on the radial-arm saw. • Perform a ripping operation on the radial-arm saw. • List guidelines that must be followed in cutting with the band saw. • Demonstrate how to cut simple and compound curves on a band saw. • Describe how to cut circles on the band saw. • Explain how to cut several duplicate parts at the same time on a band saw. • Demonstrate how to change the blade on the band saw. • Crosscut wood using the sliding compound miter saw. • Correctly set the sliding compound miter saw for cutting a miter and a bevel. • Cut a miter, bevel, and compound angle using a sliding compound miter saw. • Choose the proper scroll saw blade for the project. • Demonstrate cutting external and internal curves and designs with the scroll saw. • Explain how to do straight cutting on the scroll saw. • Use the scroll saw to make simple inlay patterns. • Describe how to install a scroll saw blade. • Identify operations that can be performed using the drill press. • Make adjustments correctly for the operation being performed. • Select the proper tool for the process being performed on the drill press. • Operate a drill press correctly, observing all safety rules. • Install a router bit in a router. • Operate a router, following all safety rules.

	• Use various types of guides as appropriate for different routing operations. • Install an inlay in a work piece. • Operate both sanders in a combination belt and-disc sander. • Set and operate a stationary belt sander correctly, observing all safety rules. • Change a sanding belt on a stationary belt sander. • Operate a stationary disc sander correctly, observing all safety rules. • Identify common turning tools and discuss their use. • Describe the two basic methods of turning. D Demonstrate both rough turning and finish turning. • Explain how to cut shoulders, Vs, beads, and coves on the lathe. • Outline the procedure for faceplate turning. • Choose the proper finish for a project. • Correct common defects found in wood projects. o Describe the use of various finishing supplies. • Choose and care for brushes. • Outline the basic steps in applying a fine finish. • Use an oil-based or water-based stain to stain wood. • Apply a wood sealer. • Know when a filler is needed and how to apply it. • Apply clear surface finishes. • Choose from and apply a variety of penetrating finishes.	
Assessments	Performance Tasks Students will be graded on the following: Attendance and being on time for class Following safety rules established for all woodworking classes. Demonstration of proper use of power tools Teamwork in regards to cleaning the lab at the end of class Overall grade for the completion of the project	Other Evidence Students will be graded on problem solving skills related to the project. The instructor will be working one on one with students to oversee the successful completion of this project.