Escondido Union High School District

Wood 1

EUHSD Board Approval Date: 6/20/17
The EUHSD *Wood 1* curriculum document identifies what students should be able to know by grade level in a comprehensive standards-based course of study. The curriculum document is updated annually based on student academic achievement data, research and best practices, and input from stakeholders. The EUHSD curriculum document contains the following documents and/or information:

A. Course Description
B. Course Guidelines/Requirements - graduation credit information, transcript information, adopted materials, adopted technology, assessment outline
C. Instructional Materials References
D. Scope and Sequence Map with Essential Standards outlined by Unit
E. References to key essential design and implementation documents

A comprehensive course of study and/or program is designed so that all students have access to the rigorous curriculum necessary to graduate high school demonstrating college and career readiness skills. Student-Centered learning provides opportunity for collaboration, communication, and a robust learning environment and provides opportunities for all students to meet the goals of the district’s Instructional Focus at the time of this writing: “*All students communicate their thinking, ideas and understanding by effectively using oral, written and/or non-verbal expression.*”

A key design consideration in the transition to the new California State Standards is a focus on changes to pedagogy. The English Language Arts instructional shifts guide classroom teaching and learning and the foundation of curriculum and instructional design. Key considerations of the ELA Instructional shifts can be found by visiting the following URL: http://www.corestandards.org/other-resources/key-shifts-in-english-language-arts/

The curriculum document is aligned to the California Model Career Technical Education Standards and reflects learning outcomes from both the anchor and pathway standards.

Wood 1 Course Description

Wood 1 is an entry-level course offering students an opportunity to build foundational entry-level skills to students with limited and/or no experience in woodworking. Students learn about the safety, use, and maintenance of basic wood shop tools and procedures and participate in a series of demonstration activities that illustrate proper selection and use of woodworking tools. Students interpret and follow step-by-step procedures for the completion of a variety of projects according to industry specifications. They will research, identify, and use specific wood products in their project designs. Students will demonstrate competence in the construction process by completing their projects according to industry rubrics. Students will showcase their projects to industry experts and will receive feedback on their designs.

Course Requirements

<table>
<thead>
<tr>
<th>Course Length: Year Long</th>
<th>Grade Level: 9-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>UC/CSU Requirement: Meets UC/CSU “g” Requirement</td>
<td>Graduation Requirement: EUHSD CTE Requirement or Elective Credit</td>
</tr>
<tr>
<td>Course Number (Semester A): 6449</td>
<td>Transcript Abbreviation (Semester A): WOOD 1 A</td>
</tr>
<tr>
<td>Course Number (Semester B): 6450</td>
<td>Transcript Abbreviation (Semester B): WOOD 1 B</td>
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<tr>
<td>Credits (Semester A): 5 CTE or Elective</td>
<td>Credits (Semester B): 5 CTE or Elective</td>
</tr>
<tr>
<td>Required Prerequisite/s: None</td>
<td>Recommended Prerequisite/s: None</td>
</tr>
<tr>
<td>Industry Sector: Building and Construction Trades</td>
<td>Career Pathway: Cabinetry, Millwork, and Woodworking or Residential and Commercial Construction</td>
</tr>
<tr>
<td>Board Approval Date (Curriculum): 6/20/17</td>
<td>Board Approval Date (Materials):</td>
</tr>
</tbody>
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Core Instructional Material/s:
- Modern Woodworking Published by Goodheart-Wilcox, ©1986, ISBN: 0-87006-577-7 (Class Set)

Supplemental Instructional Material/s:
- Each unit of study contains a variety of web based resources that are designed to supplement the tasks outlined within the specific unit.

Technology Resource/s:
- Students will utilize a variety of industry equipment and tools found within the shop/lab setting.
- Students will utilize the WWW to conduct research on specific topics.

Assessment/s: The course is designed as a project based curriculum. Each unit outlines specific skills and/or long term projects which serve as unit and course assessments.
The Scope and Sequence Guide is a California standards based document that delineates the standards based skills students are expected to know and do in order to meet College and Career Readiness expectations. Each unit of study in the Scope and Sequence document is designed to build upon the previous unit and/or prerequisite coursework in support of student mastery of specific standards based skills. The Scope and Sequence document provides the framework of understanding for key assignments, key assessments, and instructional resources and strategies that serve to assist students in meeting unit learning objectives. The document will be updated annually with input from all stakeholders.

In coursework requiring reading and writing, the following standards are not specifically stated in any one unit of study, but are the result of implementation throughout the curriculum as students participate in reading, writing, and speaking/listening standards based activities.

- By the end of grade 11, students will read and comprehend literary nonfiction in the grades 11-CCR text completely and proficiently, with scaffolding as needed at the high range. (Reading Informational Text Standard 10)
- Students will write routinely over extending time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks and purposes. (Writing Standard 10)
- “To be college and career ready, students must have ample opportunities to take part in a variety of rich and structured conversations – as part of a whole class, in small groups, and with a partner – build around important content in various domains. They must be able to contribute appropriately to conversations, make comparisons and contrasts, and analyze and synthesize a multitude of ideas according to the standards of evidence appropriate to a particular discipline.” (Standards for ELA Anchor Standards for Speaking/Listening)

The following CTE anchor standards are not specifically stated in any one unit of study, but are reflected as skills and practices throughout the curriculum.

- MPD Anchor 4.0 Technology: Use existing and emerging technology, to investigate, research, and produce products and services, including new information, as required in the Building and Construction Trades Industry Sector workplace environment. (Direct alignment with WS 11-12.6)
- MPD Anchor 6.0 Health and Safety: Demonstrate health and safety procedures, regulations, and personal health practices and determine the meaning of symbols, key terms, and domain-specific words and phrases as related to the Building and Construction Trades Industry Sector workplace environment. (Direct alignment with RSTS 9-10, 11-12.4)
- MPD Anchor 10.0 Technical Knowledge and Skills: Apply essential technical knowledge and skills common to all pathways in the Building and Construction Trades Industry Sector, following procedures when carrying out experiments or performing technical tasks. (Direct alignment with WS 11-12.6)
- MPD Anchor 11.0 Demonstration and Application: Demonstrate and apply the knowledge and skills contained in the Building and Construction Trades anchor standards, pathway standards, and performance indicators in classroom, laboratory, and workplace settings, and through the Skills USA career technical student organizations.
Wood 1 Scope and Sequence
Unit 1 – Introduction, Health and Safety
Length: 6 Weeks – Distributed Throughout the Year

Unit Description: In Unit 1, students will participate in hands-on activities designed to build their foundational understanding of participation in a workshop classroom environment. Students will examine specific safety and use policies, procedures, and practices. Students will examine work spaces for safety and/or health concerns and will set up work space according to industry and safety specifications. The students will be expected to demonstrate a variety of safety practices through various classroom assignments and activities and will demonstrate their understanding through completion of a required safety test. This will include a comprehensive understanding of the various tools and equipment utilized within the shop, the safety features of each item, location of emergency wash stations, procedures for emergency notification, and protocols for working individually and within teams when operating machinery or handling tools. The skills acquired in Unit 1 are built upon in subsequent units of study. When students encounter new tools and/or equipment, they will repeat safety demonstrations and take safety quizzes or tests prior to use.

Anchor Standards:
The CTE Anchor standards reflect what students should know and do in a sequential CTE pathway course of study. The Anchor standards may be repeated throughout each unit of study and build upon one another throughout a series of courses.

Communications:
2.5 Communicate information and ideas effectively to multiple audiences using a variety of media and formats.

Technology:
4.5 Research past, present, and projected technological advances as they impact a particular pathway.

Problem Solving and Critical Thinking:
5.1 Identify and ask significant questions that clarify various points of view to solve problems.
5.4 Interpret information and draw conclusions, based on the best analysis, to make informed decisions.

Health and Safety:
6.1 Interpret policies, procedures, and regulations for the workplace environment, including employer and employee responsibilities.
6.2 Use health and safety practices for storing, cleaning, and maintaining tools, equipment, and supplies.
6.3 Set up a work area, or shop, to avoid potential health concerns and safety hazards, including but not limited to electrical (shock), mechanical (cutting), and chemical (poisonous).

Learning Objectives:
Students will be able to…
- Communicate both orally and in writing.
- Conduct research, both small and on a larger scale, on specific assigned topics such as safety and machine tool use.
- Ask and answer questions using industry terminology.
- Interpret information from a variety of documents.
- Follow specific policies and procedures for safety and equipment use.
- Demonstrate health and safety practices when working in the shop.
- Maintain tools and equipment according to industry specifications.
- Set up and maintain shop to avoid health concerns or safety hazards.
- Practice personal safety when handling materials or machinery.
- Report hazards in the shop.
- Locate and adhere to MSDS instructions.

Unit Assignments:
- Throughout the course students will be expected to properly identify, use, and maintain a variety of shop tools and equipment according to industry specifications. The teacher will demonstrate each piece of equipment and its safety features for each specific unit of study. Students will complete a series of unit quizzes and an overall safety test in order to demonstrate understanding of key rules and procedures. For all tasks involving specific equipment use, students will conduct demonstrations of the equipment, showcasing the safety features and maintenance features. This will be repeated in each unit of study or when a new piece of equipment and/or tool is introduced.
- All students will be required to keep a notebook that outlines key equipment/tools and their use, function, and maintenance requirements and any specific industry related vocabulary terminology. This includes the specific equipment term and its official definition according to industry standards. For specific equipment safety regulations: This includes identifying any safety features of the specific tool or piece of equipment. As a demonstration of safety requirements for learning, students will complete the following activities:
  - Students will work in groups of 2-3 to create a poster diagramming and outlining key...
wires (tripping), fumes (lung health), noise (hearing loss), fire (burns), and so forth, incorporating ergonomics.

6.4 Practice personal safety when lifting, bending, or moving equipment and supplies.

6.5 Demonstrate how to prevent and respond to work-related accidents or injuries; this includes demonstrating an understanding of ergonomics.

6.6 Maintain a safe and healthful working environment.

6.7 Be informed of laws/acts pertaining to the Occupational Safety and Health Administration (OSHA).

6.8 Report hazards found on the job site to supervisor/teacher.

6.9 Locate, and adhere to, Material Safety Data Sheet (MSDS) instructions.

6.10 Maintain proper use of safety apparel at all times, including but not limited to, eye protection, hearing protection, skin protection, head protection, footwear and protection from airborne particulate matter.

6.11 Comply with the safe handling, storage and disposal of chemicals, materials and adhesives in accordance with local, state, and federal safety and environmental regulations (OSHA, Environmental Protection Agency [EPA], Hazard Communication [HazCom], Material Safety Data Sheets [MSDS], etc.).

6.12 Demonstrate the proper care and safe use of hand, portable and stationary power tools.

Responsibility and Flexibility:

7.2 Explain the importance of accountability and responsibility in fulfilling personal, community, and workplace roles.

7.3 Understand the need to adapt to changing and varied roles and responsibilities.

7.4 Practice time management and efficiency to fulfill responsibilities.

Leadership and Teamwork:

9.1 Define leadership and identify the responsibilities, competencies, and behaviors of successful leaders.

9.2 Identify the characteristics of successful teams, including leadership, cooperation, collaboration, and effective decision-making.

- Work well independently and/or with a small team, maintaining appropriate teamwork procedures.
- Use industry terminology correctly.
- Demonstrate effective time management skills.
- Utilize measurement skills acquired within class and within math classes.
- Select proper tools for specific jobs and/or plans.
- Identify basic shop machinery, use, safety features, and functions.

Teacher Note: Skills USA is a student professional organization. The teacher will review membership and Skills USA activities to the class. Skills USA - Professional Student Organization for Industry. Students will be introduced to the Skills USA organization and may participate, at their choosing, in any year. Students participate in a variety of cabinet-making competitions and professional skill development. The competitions may be held at the local and/or regional level as conducted by Skills USA. The state competition brings together wood workers from throughout the state. The students may also move on to National competitions.
making skills as applied in groups, teams, and career technical student organization activities.

**Technical Knowledge and Skills:**
10.1 Interpret and explain terminology and practices specific to the Building and Construction Trades sector.
10.5 Demonstrate the basic care, proper maintenance, and use of hand, portable, and stationary tools related to the Building and Construction trades.

**Demonstration and Application:**
11.1 Utilize work-based/workplace learning experiences to demonstrate and expand upon knowledge and skills gained during classroom instruction and laboratory practices specific to the Building and Construction Trades sector program of study.

**Building and Construction Trades Pathway Standards:**
A4.0 Demonstrate proper selection and use of woodworking tools.
A4.1 Demonstrate the accurate use of common measuring and layout tools.
A4.2 Select the proper layout tools for specific tasks.
A4.3 Select the proper cutting tools for specific operations (e.g., straight cuts, curves, drilling holes).

**Meeting the Needs of ELs:**
- Utilize the student information system to acquire the language levels of EUHSD English Learners.
- In 2012, the CA Department of Education adopted new language level proficiency descriptors and new EL state standards. Visit the following website to learn more about those new descriptors and corresponding standards: [http://www.cde.ca.gov/sp/el/er/documents/eldstndspublication14.pdf](http://www.cde.ca.gov/sp/el/er/documents/eldstndspublication14.pdf)
- In 2014, the CA Department of Education adopted new ELA-ELD Framework, with specific strategies designed to meet the needs of EL students. Visit the following URL to learn more about the new frameworks: [http://www.cde.ca.gov/ci/rl/cf/documents/elaeldfwchapter11.pdf](http://www.cde.ca.gov/ci/rl/cf/documents/elaeldfwchapter11.pdf)

**Instructional Resources:**
- *Wood Technology and Processes* Textbook
- *Modern Woodworking: Tools, Materials, and Processes*
- [www.osha.gov](http://www.osha.gov)
- Teacher Developed Safety Manual
- [http://www.cslb.ca.gov/](http://www.cslb.ca.gov/) (Department of Consumer Affairs Contractors State License Board)
- [http://www.portfoliogen.com/](http://www.portfoliogen.com/) (website with information on creating a digital portfolio)
Unit Description: In Unit 2, students will begin to apply the use of the equipment/tools and will review a teacher-provided industry standard plan and complete the plan project from design to finish. Students will be introduced to a variety of industry standard vocabulary and will continue to use within the context of the course and add to their notes. The plan guides students through a hands-on performance based task where they will use the industry tools and equipment to create a wood design product (such as a cutting board). Students will complete a materials list and an organizational plan that demonstrates an understanding of following multi-step procedures, including time management. Students will utilize an industry-standard rubric to assess their final product and will write a reflection of the process.

Unit Standards:

Building and Construction Trades Pathway Standards:

A1.0 Demonstrate competence in planning, design, layout, and technical drawing interpretation for practical use in cabinetmaking and mill working.
A1.1 Identify common sizes in relation to furniture and cabinets.
A1.3 Calculate board, square, and linear feet.
A1.4 Estimate material costs.
A1.7 Read and interpret technical drawings.
A3.0 Interpret and apply information to develop a bill of materials, estimate the cost of materials, and develop a plan of procedures to complete a project.
A3.1 List the sequence of cutting procedures, assembly, and finishing steps.
A4.0 Demonstrate proper selection and use of woodworking tools.
A4.1 Demonstrate the accurate use of common measuring and layout tools.
A4.2 Select the proper layout tools for specific tasks.
A5.2 Identify several different species of hardwood and their characteristics that are common to the cabinetmaking and millwork industry.
A5.4 Identify common defects found in wood and list possible solutions. (Introduced in Unit 2)
A6.1 Demonstrate a working knowledge of joinery, fasteners, and adhesives.
A7.1 Square and surface a board to a specific size.
A8.0 Utilize appropriate abrasives to prepare a project for a specific finish.
A8.1 Select the proper abrasive for shaping and smoothing materials.

Learning Objectives:

Students will be able to…

- Communicate both orally and in writing.
- Conduct research, both small and on a larger scale, on specific assigned topics such as safety and machine tool use.
- Ask and answer questions using industry terminology.
- Interpret information from a variety of documents.
- Follow specific policies and procedures for safety and equipment use.
- Demonstrate health and safety practices when working in the shop.
- Maintain tools and equipment according to industry specifications.
- Set up and maintain shop to avoid health concerns or safety hazards.
- Practice personal safety when handling materials or machinery.
- Report hazards in the shop.
- Locate and adhere to MSDS instructions.
- Work well independently and/or with a small team, maintaining appropriate teamwork procedures.

Unit Assignments:

- As the basis for introduction to wood working, the teacher will provide students with a design plan for a small wood working project such as a cutting board. Students will review the project specifications with the teacher, focusing on all phases of project development and a comprehensive project plan. The teacher will review the technical drawings for the project with the students and will introduce key technical drawing terminology. Students will then read and interpret the drawings to produce a small woodworking project utilizing basic woodworking tools and machinery. The students will complete their assigned project using a teacher designed rubric and according to the steps outlined within the plan. Using teacher guided plans, the students will develop a materials list for the project, which includes estimated cost for the type and quantity of materials outlined within the plan. Students will develop a bill of materials and a plan of procedures (timeframe) for completing the project.

- Throughout the unit, the teacher will introduce students to a variety of joining techniques utilized for the specified project. Students will add joining technique notes to their lab notebook. Students select a specific joining technique and demonstrate as part of their project development. The project must be designed and built according to industry specifications. Students will use an industry rubric (created by their instructor) to assess the overall

Unit Assessments:

- Small Word Cutting Project: Example-Cutting Board Project & written reflection
- Written comprehensive final exam incorporating (safety, procedural questions, measurement questions, use of appropriate vocabulary, wood use, etc.)
- Wood profile & vocabulary words written test (weekly)
- Weekly quizzes/tests on a variety of wood working industry skills
A8.2 Select the proper grit sizes and sequences for shaping and smoothing operations.  
A8.4 Properly prepare a surface for finishing.  
A9.0 Understand finishes and when to apply paint, stains, sealers, varnishes, and catalyzed finishes, including water- and oil-based finishes.  
A9.6 Apply a suitable finish to a specific cabinet or millwork project.  

**Reading Standards for CTE Grade 9/10:**  
1. Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.  
3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.  
4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9–10 texts and topics.  

**Writing Standards for CTE grade 9/10:**  
2d. Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers.  
4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.  
6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology’s capacity to link to other information and to display information flexibly and dynamically.  
8. Gather relevant information from multiple authoritative print and digital sources (primary and secondary), using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation. CA

| Use industry terminology correctly. | Demonstrate effective time management skills. | Read and follow a series of instructions according to plan. | Correctly use a variety of basic measurements in construction and design. | Read and interpret technical drawings. | Demonstrate proper selection and use of tools when completing various stages of a project. | Identify and use specific woods appropriately. | Demonstrate and correctly use specific joinery techniques. | Apply finishes to a completed project. | Utilize a variety of measurement calculations. | Read and interpret technical drawings. | Demonstrate accurate use of tools. | Identify a variety of wood species. |  
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Students will write a one-page reflection on their project which will include areas of strength and areas of continued growth.  
Students will read a series of “wood profile” articles (informational text) – as provided by their teacher on wood species. The profiles are read weekly. The wood profile articles are read and annotated as a class. Students discuss the woods and are assessed as part of their final exam, identifying key wood species characteristics to specific projects.  
Students will utilize a variety of industry related terms and will demonstrate their understanding through use of the vocabulary while in the shop and will be provided unit quiz assessments on the industry vocabulary. The vocabulary section will be part of the student’s final exam.
Meeting the Needs of ELs:

- Utilize the student information system to acquire the language levels of EUHSD English Learners.
- In 2012, the CA Department of Education adopted new language level proficiency descriptors and new EL state standards. Visit the following website to learn more about those new descriptors and corresponding standards: [http://www.cde.ca.gov/sp/el/er/documents/eldstdspub.pdf](http://www.cde.ca.gov/sp/el/er/documents/eldstdspub.pdf)
- In 2014, the CA Department of Education adopted new ELA-ELD Framework, with specific strategies designed to meet the needs of EL students. Visit the following URL to learn more about the new frameworks: [http://www.cde.ca.gov/ci/rl/er/documents/elaeldfwchapter11.pdf](http://www.cde.ca.gov/ci/rl/er/documents/elaeldfwchapter11.pdf)

Instructional Resources:

- [Wood Technology and Processes](#) Textbook
- [Modern Woodworking: Tools, Materials, and Processes](#)
- [www.osha.gov](http://www.osha.gov)
- Teacher Developed Safety Manual
- [http://www.understandconstruction.com/wood.html](http://www.understandconstruction.com/wood.html) - (teacher resource - website article on understanding wood building materials)
- [http://www.cslb.ca.gov/About Us/Library/Licensing Classifications](http://www.cslb.ca.gov/About Us/Library/Licensing Classifications) (teacher resource - Contractors State Licensing Classifications/Requirements)
# Wood 1 Scope and Sequence
## Unit 3 – Introduction to Woodworking
### Length: 10-14 weeks

**Unit Description:** Unit 3 is designed to provide students an opportunity to complete two comprehensive wood projects over a specific time period and for review at the end of project showcase or at the regional county fair. The project focuses on the skills and competencies of cabinet making. Students will utilize industry project plans and will create their own design plan for each of the two projects, including cost of materials, specific tools and equipment, finishing and joining techniques, etc. Students will work independently on their project and will be assessed periodically by both their teacher and industry guest experts. Students will also continue their exploration of different wood species by reviewing a variety of informational texts and websites. They will complete unit quizzes and tests on industry vocabulary and various unit specific mill working concepts.

### Unit Standards:

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<thead>
<tr>
<th>Building and Construction Trades Pathway Standards:</th>
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<td>A1.1 Identify common sizes in relation to furniture and cabinets.</td>
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<td>A1.3 Calculate board, square, and linear feet.</td>
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<td>A1.4 Estimate material costs.</td>
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<td>A1.7 Read and interpret technical drawings.</td>
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<td>A1.8 Sketch a project using manual drawing techniques.</td>
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<tr>
<td>A3.0 Interpret and apply information to develop a bill of materials, estimate the cost of materials, and develop a plan of procedures to complete a project.</td>
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<tr>
<td>A3.1 List the sequence of cutting procedures, assembly, and finishing steps.</td>
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<td>A3.2 Evaluate an existing bill of materials for accuracy.</td>
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<td>A3.3 Determine the cost of materials needed for a cabinet or furniture project.</td>
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<td>A3.4 Optimize available materials from a cutting diagram.</td>
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<td>A3.5 Compare and contrast the cost of a specific project using different materials.</td>
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<td>A3.6 Develop a materials list, cut list, and cost estimate from a working drawing for a specific cabinet project.</td>
</tr>
<tr>
<td>A4.0 Demonstrate proper selection and use of woodworking tools.</td>
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<td>A4.1 Demonstrate the accurate use of common measuring and layout tools.</td>
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<td>A4.2 Select the proper layout tools for specific tasks.</td>
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### Learning Objectives:

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<td>Conduct research, both small and on a larger scale, on specific assigned topics such as safety and machine tool use.</td>
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<td>Ask and answer questions using industry terminology.</td>
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<td>Interpret information from a variety of documents.</td>
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<td>Follow specific policies and procedures for safety and equipment use.</td>
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<td>Demonstrate health and safety practices when working in the shop.</td>
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<td>Maintain tools and equipment according to industry specifications.</td>
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<td>Set up and maintain shop to avoid health concerns or safety hazards.</td>
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<td>Practice personal safety when handling materials or machinery.</td>
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<td>Report hazards in the shop.</td>
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<td>Locate and adhere to MSDS instructions.</td>
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<td>Work well independently and/or with a small team, maintaining appropriate teamwork procedures.</td>
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</table>

### Unit Assignments:

| Performance Task: After completing a variety of skills tests in the previous units, students will expand upon their woodworking and cabinet making skills and will build two projects throughout the remainder of the semester (a curio cabinet with a glass door and a wall hanging pendulum clock with a glass door). The projects are designed to build student’s proficiency in case construction. The project will take the students through all phases of project planning, measurement, and layout. Students will create their own design plan for each of the two projects, which includes providing the teacher with a comprehensive estimated cost of all building materials prior to beginning any construction work. Students will enhance the use of joinery techniques from unit 2 to include the following industry standard joining techniques: dado, rabbet joints, doweling, fitment of door to case. The project must be designed and built according to industry specifications and parameters as specified in the plan. Students will demonstrate proper finishing techniques according to industry standards – including both selection and application. Upon completion, students will take a photograph of their project and upload it to their digital portfolio. Students will write a brief reflection on the project, outlining their experience in use of the tools and their growth from the experience. While students are not required to submit their project to the... |

### Unit Assessments:

| Cabinet Project/Hanging Pendulum Project & written reflection |
| Written comprehensive final exam incorporating (safety, procedural questions, measurement questions, use of appropriate vocabulary, wood use, etc.) |
| Wood profile & vocabulary words written test (weekly) |
| Weekly quizzes/tests on a variety of wood working industry skills |
A4.3 Select the proper cutting tools for specific operations (e.g., straight cuts, curves, drilling holes).
A4.4 Select the most appropriate blade for a given operation.
A4.5 Select the proper boring tools for specific operations.
A4.6 Select the proper hand-shaping tools for specific operations.
A4.7 Select proper clamping tools for specific operations.
A5.0 Identify wood products and materials used in the furniture and cabinetmaking industry and describe their characteristics and uses.
A5.1 Define the difference between a hardwood and softwood.
A5.2 Identify several different species of hardwood and their characteristics that are common to the cabinetmaking and millwork industry.
A5.3 Identify several different species of softwood and their characteristics that are common to the cabinetmaking and millwork industry.
A5.4 Identify common defects found in wood and list possible solutions.
A5.5 Identify and be able to differentiate panel products and their uses in the cabinetmaking industry.
A5.6 Describe the cutting and handling techniques used for sheet goods.
A6.0 Compare and contrast the advantages and disadvantages of using laminates versus using veneers.
A6.1 Demonstrate a working knowledge of joinery, fasteners, and adhesives.
A6.2 Define the purposes for metallic fasteners in furniture and cabinetmaking.
A6.3 Select the proper metallic fasteners for specific applications.
A6.4 Demonstrate the proper use of metallic fasteners for specific applications.
A6.5 Compare and contrast joints commonly used in the cabinetmaking and mill working industries (i.e., strength, appearance, and ease of construction).
A6.6 Determine the appropriate application of a variety of joinery techniques, including dowels, biscuits, pocket holes, and mortise and tenon.

- Use industry terminology correctly.
- Demonstrate effective time management skills.
- Read and follow a series of instructions according to plan.
- Correctly use a variety of basic measurements in construction and design.
- Read and interpret technical drawings.
- Demonstrate proper selection and use of tools when completing various stages of a project.
- Identify and use specific woods appropriately.
- Demonstrate and correctly use specific joinery techniques.
- Apply finishes to a completed project.

local fair, they are required to participate in a showcase in class (as designed by their teacher) where their work will be reviewed according to industry standards. Students will be provided feedback.

- Students will read a series of “wood profile” articles (informational text) – as provided by their teacher on wood species. The profiles are read weekly. The wood profile articles are read and annotated as a class. Students discuss the woods and are assessed as part of their final exam, identifying key wood species characteristics to specific projects.
- Students will utilize a variety of industry related terms and will demonstrate their understanding through use of the vocabulary while in the shop and will be provided unit quiz assessments on the industry vocabulary. The vocabulary section will be part of the student’s final exam.
A6.8 Select the proper adhesive(s) to construct wood joints used in furniture or cabinets.
A6.9 Demonstrate initial assembly and dry clamping procedures.
A6.10 Demonstrate the proper use and application of adhesives.
A6.11 Demonstrate the proper cleanup procedures for specific adhesives.
A6.12 Select the correct type of wood joint used for a specific application and material.
A6.13 Demonstrate the ability to construct a variety of wood joints (i.e. butt, miter, compound miter, half lap, mortise and tenon).
A7.0 Demonstrate competence in various construction processes in the cabinetmaking, furniture making, and mill working industries.
A7.1 Square and surface a board to a specific size.
A7.2 Demonstrate common case construction.
A7.9 Use appropriate methods and tools to check the accuracy of a project.
A7.10 Lay out, install, and adjust the appropriate door hardware to include European and standard hinges. (focus on hinges)
A8.0 Utilize appropriate abrasives to prepare a project for a specific finish.
A8.1 Select the proper abrasive for shaping and smoothing materials.
A8.2 Select the proper grit sizes and sequences for shaping and smoothing operations.
A8.4 Properly prepare a surface for finishing.
A9.0 Understand finishes and when to apply paint, stains, sealers, varnishes, and catalyzed finishes, including water- and oil-based finishes.
A9.1 Demonstrate proper selection and application methods of different types of stains for a specific application.
A9.2 Demonstrate cleaning procedure for various types of stains.
A9.3 Select the proper type of sealer and finish coat for a specific application.
A9.4 Demonstrate proper application methods for different types of sealers and finish coats.
A9.5 Demonstrate cleaning procedures for various types of sealer and finish coats.
A9.6 Apply a suitable finish to a specific cabinet or millwork project.

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Instructional Resources:

- Wood Technology and Processes Textbook
- Modern Woodworking: Tools, Materials, and Processes
- www.osha.gov
- Teacher Developed Safety Manual
- http://www.understandconstruction.com/wood.html (teacher resource - website article on understanding wood building materials)
- http://www.cslb.ca.gov/About_Us/Library/Licensing_Classifications (teacher resource - Contractors State Licensing Classifications/Requirements)
Wood 1 Scope and Sequence
Semester B – Unit 4 – Skills Test and Showcase

Length: 16 weeks

**Unit Description:** In Unit 4, students will continue working on their Semester A projects (Cabinet and Wall Clock). Depending on the sophistication of the plans from the Semester A project and the feedback provided by the teacher and industry partners, students may need additional time to finalize their projects. Students will also complete a series of wood lathe skills tests where they will incorporate a variety of cuts according to industry standards. Students will also complete a series of sharpening projects where they will hone their skills in the correct procedures for sharpening a variety of edges. As part of their end of unit project, students will complete their own wood design from design sketch to final product finishing. This will include all phases of project planning. Students will have an opportunity to customize a project such as building a wooden guitar, a skateboard, an additional cabinet or more sophisticated table. The projects will be approved by the instructor and must be completed by the end of the year. Students may elect to choose this project as part of their overall showcase.

**Unit Assignments:**

**Unit Standards:**

- **Building and Construction Trades Pathway Standards:**
  - A1.0 Demonstrate competence in planning, design, layout, and technical drawing interpretation for practical use in cabinetmaking and millwork.
  - A1.1 Identify common sizes in relation to furniture and cabinets.
  - A1.3 Calculate board, square, and linear feet.
  - A1.4 Estimate material costs.
  - A1.7 Read and interpret technical drawings.
  - A1.8 Sketch a project using manual drawing techniques.
  - A3.0 Interpret and apply information to develop a bill of materials, estimate the cost of materials, and develop a plan of procedures to complete a project.
  - A3.1 List the sequence of cutting procedures, assembly, and finishing steps.
  - A3.2 Evaluate an existing bill of materials for accuracy.
  - A3.3 Determine the cost of materials needed for a cabinet or furniture project.
  - A3.4 Optimize available materials from a cutting diagram.
  - A3.5 Compare and contrast the cost of a specific project using different materials.
  - A3.6 Develop a materials list, cut list, and cost estimate from a working drawing for a specific cabinet project.
  - A4.0 Demonstrate proper selection and use of woodworking tools.
  - A4.1 Demonstrate the accurate use of common measuring and layout tools.
  - A4.2 Select the proper layout tools for specific tasks.

- **Performance Task:** (Teacher Note) Some students will continue working on the Semester A Cabinet and Wall Clock. They may need the remainder of the year in order to finish this task.

- **Wood Lathe Skills Test** – Students will produce a spindle project using the wood lathe. The project must incorporate a variety of cuts utilizing a variety of turning tools according to industry specifications. These demonstration cuts will be assessed using an industry rubric. As an extension, once students demonstrate proficiency – students may extend their learning of use of the wood lathe by completing a variety of projects such as face plate turning project (cup, bowl, vessel, etc.) which must be completed within the remaining allotted course timeframe.

- **Sharpening**
  - Exercises/demonstration
  - Written comprehensive final exam incorporating (safety, procedural questions, measurement questions, use of appropriate vocabulary, wood use, etc.)

- **Cabinet Project/Hanging Pendulum Project & written reflection**

- **Wood Lathe exercises/demonstration**

- **Written comprehensive final exam incorporating (safety, procedural questions, measurement questions, use of appropriate vocabulary, wood use, etc.)**

- **Weekly quizzes/tests on a variety of wood working industry skills**

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A4.3 Select the proper cutting tools for specific operations (e.g., straight cuts, curves, drilling holes).
A4.4 Select the most appropriate blade for a given operation.
A4.5 Select the proper boring tools for specific operations.
A4.6 Select the proper hand-shaping tools for specific operations.
A4.7 Select proper clamping tools for specific operations.
A5.0 Identify wood products and materials used in the furniture and cabinetmaking industry and describe their characteristics and uses.
A5.1 Define the difference between a hardwood and softwood.
A5.2 Identify several different species of hardwood and their characteristics that are common to the cabinetmaking and millwork industry.
A5.4 Identify common defects found in wood and list possible solutions.
A5.5 Identify and be able to differentiate panel products and their uses in the cabinetmaking industry.
A5.6 Describe the cutting and handling techniques used for sheet goods.
A6.0 Compare and contrast the advantages and disadvantages of using laminates versus using veneers.
A6.1 Demonstrate a working knowledge of joinery, fasteners, and adhesives.
A6.2 Define the purposes for metallic fasteners in furniture and cabinetmaking.
A6.3 Select the proper metallic fasteners for specific applications.
A6.4 Demonstrate the proper use of metallic fasteners for specific applications.
A6.5 Compare and contrast joints commonly used in the cabinetmaking and mill working industries (i.e., strength, appearance, and ease of construction).
A6.6 Determine the appropriate application of a variety of joinery techniques, including dowels, biscuits, pocket holes, and mortise and tenon.
A6.8 Select the proper adhesive(s) to construct wood joints used in furniture or cabinets.
A6.9 Demonstrate initial assembly and dry clamping procedures.
A6.10 Demonstrate the proper use and application of adhesives.

- Work well independently and/or with a small team, maintaining appropriate teamwork procedures.
- Use industry terminology correctly.
- Demonstrate effective time management skills.
- Read and follow a series of instructions according to plan.
- Correctly use a variety of basic measurements in construction and design.
- Read and interpret technical drawings.
- Demonstrate proper selection and use of tools when completing various stages of a project.
- Identify and use specific woods appropriately.
- Demonstrate and correctly use specific joinery techniques.
- Apply finishes to a completed project.

- Showcase – All students will participate in an industry showcase where industry experts will analyze student wood projects against industry standards, expectations and will receive feedback. Students will then summarize the strengths and areas of growth from their industry feedback and submit an end of year reflection to their teacher.
- Final Exam – All students will take a comprehensive final exam.
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- [http://www.cslb.ca.gov/About_Us/Library/Licensing_Classifications](http://www.cslb.ca.gov/About_Us/Library/Licensing_Classifications) (teacher resource - Contractors State Licensing Classifications/Requirements)
- [https://www.youtube.com/watch?v=BN1IytrSpOU](https://www.youtube.com/watch?v=BN1IytrSpOU) (teacher resource – UTUBE Video Wood Machining Skills Test)