| *Wood Design and Production II* | |
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| CURRICULUM/CONTENT AREA | COURSE LENGTH |
| *Applied & Technical Education (ATE)* | *9 weeks* |
| GRADE LEVEL | DATE LAST REVIEWED |
| *10-12* | *2023* |
| PREREQUISITE(s) *if applicable* | BOARD APPROVAL DATE |
| *Wood Design and Production I* | *9/10/2024* |
| PRIMARY RESOURCE *if applicable* | |
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## DESIRED RESULTS

### COURSE DESCRIPTION AND PURPOSE

*This course is intended to allow students to build upon thier knowledge and skills from Wood Design and Production I . Emphasis will be placed on planning and design concepts followed by applying advanced woodworking techniques in various project construction. Students will also be given an introduction into CNC routers and how this form of manufacturing can be combined with traditional woodworking. Tables, chairs and cabinets are all potential projects in this class.*

| ENDURING UNDERSTANDINGS<br>*Students will understand that...* | ESSENTIAL QUESTIONS<br>*Students will keep considering...* |
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| Creativity, innovation, and critical thinking are essential for success in a technologically advanced world. | Why is creativity and innovation important? How is creativity and innovation used in [name of career pathway]? |
| | How do teams efficiently and effectively solve problems in an increasingly complex world? |
| | What strategies and processes can I use to become a more effective creator, thinker and problem solver? |
| The ability to communicate and collaborate with people with diverse backgrounds and perspectives is key to participation in a global economic society. | Why is communication and collaboration important? How do positive work behaviors and personal qualities impact communication and collaboration? |

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| | What is effective teamwork? What strategies can I use/teams use to work better together? How can perspectives and experiences of a diverse group develop innovative solutions to a given problem? |
| Career and technical education provides pathways to high-demand, high-wage career opportunities, and personal fulfillment. | Why is career and life readiness important? What jobs and careers are available to meet individual and societal needs locally, regionally, and nationally? |
| | How might technical knowledge and skills influence one's employability and advancement opportunities within various work settings? |
| | What are employability skills? How do I prepare myself for a career that is in demand now and in 5, 10, or 20 years from now? |

**PRIORITY CAREER & TECHNICAL STANDARDS**
*Students will be skilled at...*

**Creativity, Critical Thinking, Communication and Collaboration**
**4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.**
**a: I develop effective resolutions for a given problem, decision or opportunity using available information.**
**b: I develop and implement a resolution for a new situation using personal knowledge and experience.**

**Career Development**
**CD4: Students will identify and apply employability skills.**
a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable.
b: I demonstrate skills related to seeking and applying for employment to find and obtain a desired job.
c: I identify and exhibit traits for retaining employment.
d: I develop positive relationships with others.

**Information, Media, Technology**
**IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.**
a: I choose appropriate sources of data and information for a given purpose.
b: I determine the relevance, validity and timeliness of data and information.
c: I select relevant information necessary for making decisions and solving problems
d: I apply data and information to communicate ideas and create new opportunities.

**PRIORITY CONTENT STANDARDS**
*Students will know...*

**Standard: BB1:** Students will analyze the core concepts of technology.

**Standard: ENG1:** Students will analyze and demonstrate the attributes of design.

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| **Standard: ENG3:** Students will demonstrate and analyze the role of troubleshooting, research and development, invention and innovation and experimentation in problem solving. |
| **Standard: ICT1:** Students will analyze, select and use information and communication technologies. |
| **Standard: MNF1:** Students will be able to select and use manufacturing technologies. |

| Potential INDUSTRY-RECOGNIZED CREDENTIALS (IRCs) Opportunties associated with the course | Potential WORK BASED LEARNING (WBL) opportunities associated with the course |
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| Potential DUAL CREDIT Opportunties associated with the course | |
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| Unit 1 Employability/Safety Skills | | |
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| **STAGE 1: Desired Unit Results**<br>What will students understand as a result of the unit? | | **STAGE 2: Assessment Evidence**<br>By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results? |
| **ESSENTIAL QUESTION (s)**<br>What thought-provoking questions will foster inquiry, understanding, and transfer of learning? | | **Success Criteria with Standards**<br>The criteria for evaluating performance on standards is constant. |
| How might technical knowledge and skills influence one's employability and advancement opportunities within various work settings? | | CTE Rubric is used for self-reflection and project feedback. |
| What are employability skills? How do I prepare myself for a career that is in demand now and in 5, 10, or 20 years from now? | | |
| **PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets** | | **Performance Tasks Options/ Assessment Strategies by Standard**<br>Students may be given options to show their learning in varied ways. |
| **Creativity, Critical Thinking, Communication and Collaboration**<br>**4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.** | | Successful completion of safety test, Safe return demonstration of all tools and equipment, and continuous demonstration of safe practices and uses of tools and equipment |
| a: I develop effective resolutions for a given problem, decision or opportunity using available information. | 4C2.a.13.h: I can predict how an action could result in unintended consequences, both positive and negative. | CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback. |
| b: I develop and implement a resolution for a new situation using personal knowledge and experience. | 4C2.b.6.h: I can use existing knowledge to develop a resolution for a new situation, problem or opportunity. | |
| **Career Development**<br>**CD4: Students will identify and apply employability skills.** | | |
| a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable. | CD4.a.9.h: I can use positive work qualities typically desired in each of the career cluster's pathways. | CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback. |
| | CD4.a.10.h: I can manage work roles and responsibilities to balance them with other life roles and responsibilities. | |
| c: I identify and exhibit traits for retaining employment. | CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability. | |
| | CD4.c.5.h: I can maintain appropriate dress and behavior for the job to contribute to a safe and effective workplace/jobsite. | |
| **PRIORITY CONTENT STANDARDS & Learning Targets** | | **Performance Tasks Options/ Assessment Strategies by Standard**<br>Students may be given options to show their learning in varied ways. |
| **Standard: MNF1:** Students will be able to select and use manufacturing technologies. | **MNF1.a.7.h:** I can identify safety and health protections and procedures that are critical to worker well-being. | *Students will demonstrate knowledge in appropriate machine vocabulary, machines safety, and choosing the right tools for the job.* |
| | **MNF1.a.8.h:** I can use appropriate tools, materials, and machines to repair a malfunctioning system. | |
| **SUPPORTING STANDARDS AND LEARNING TARGETS** | | **Performance Tasks Options/ Assessment Strategies by Standard**<br>Students may be given options to show their learning in varied ways. |
| **Standard: EL7:** Demonstrate safe and appropriate use of tools, machines and materials in electronics technology. | **EL7.a.6.h:** I can demonstrate the safe usage of appropriate tools, procedures and operation of equipment. | Weekly safety and work assessments |
| | **EL7.a.7.h:** I can describe personal safety precautions for working with electric and electronic devices electrical shock. | Weekly safety and work assessments |
| **Stage 3: Learning Activities**<br>A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unforld in a natural flow? | | |

| GUIDING UNIT QUESTIONS<br>Using Costas Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning | STRATEGIES/ACTIVITIES<br>What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students. | RESOURCES/MATERIALS<br>This includes an applicable textbooks, software, industry recognized certification software/tools, subcriptions (such asPLTW), etc. |
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| | Daily work logs | |

| *Unit 2 Planning and Design* | | |
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| **STAGE 1: Desired Unit Results**<br>*What will students understand as a result of the unit?* | | **STAGE 2: Assessment Evidence**<br>By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results? |
| **ESSENTIAL QUESTION (s)**<br>*What thought-provoking questions will foster inquiry, understanding, and transfer of learning?* | | **Success Criteria with Standards**<br>The criteria for evaluating performance on standards is constant. |
| How might technical knowledge and skills influence one's employability and advancement opportunities within various work settinas? | | CTE Rubric is used for self-reflection and project feedback. |
| What are employability skills? How do I prepare myself for a career that is in demand now and in 5, 10, or 20 years from now? | | |
| **PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets** | | **Performance Tasks Options/ Assessment Strategies by Standard**<br>*Students may be given options to show their learning in varied ways.* |
| **Creativity, Critical Thinking, Communication and Collaboration**<br>**4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.** | | |
| a: I develop effective resolutions for a given problem, decision or opportunity using available information. | 4C2.a.11.h: I can determine the information needed to address an identified problem. | *Given a design exercise that requires students to utilize the practices and procedures discussed and demonstrated in lectures, readings, and workshops, students will create plans and procedures for a woodworking project* |
| | 4C2.a.12.h: I can contrast the benefits and drawbacks of various proposed resolutions to a given situation. | |
| | 4C2.a.15.h: I can determine the best resolution for a problem, decision or opportunity based on given criteria. | |
| b: I develop and implement a resolution for a new situation using personal knowledge and experience. | 4C2.b.5.h: I can apply past experience to develop a course of action for a new situation. | |
| | 4C2.b.6.h: I can use existing knowledge to develop a resolution for a new situation, problem or opportunity. | |
| **Career Development**<br>**CD4: Students will identify and apply employability skills.** | | |
| a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable. | CD4.a.9.h: I can use positive workqualities typically desired in each of the career cluster's pathways. | CTE standards-based Rubric: Throughout the course, students and teachers use the rubric for communication of success criteria, reflection, goal setting, and feedback. |
| | CD4.a.10.h: I can manage work roles and responsibilities to balance them with other life roles and responsibilities. | |
| c: I identify and exhibit traits for retaining employment. | CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability. | |
| | CD4.c.5.h: I can maintain appropriate dress and behavior for the job to contribute to a safe and effective workplace/jobsite. | |
| **Information, Media, Technology**<br>**IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.** | | |
| c: I select relevant information necessary for making decisions and solving problems | IMT1.c.6.h: I can interpret and select appropriate information to develop a resolution for a given situation. | |
| **PRIORITY CONTENT STANDARDS & Learning Targets** | | **Performance Tasks Options/ Assessment Strategies by Standard**<br>*Students may be given options to show their learning in varied ways.* |
| **Standard: ENG1:** Students will analyze and demonstrate the attributes of design. | **ENG1.a.12.h:** Requirements of a design, such as criteria, constraints and efficiency, sometimes compete with each other. | Given a design exercise that requires students to utilize the practices and procedures discussed and demonstrated in lectures, readings, and |

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| **Standard: ENG3:** Students will demonstrate and analyze the role of troubleshooting, research and development, invention and innovation and experimentation in problem solving. | **ENG3.a.5.h:** I can explain technological problems must be researched before they can be solved. | workshops, students will create plans and procedures for a woodworking project |
| **Standard: ICT1:** Students will analyze, select and use information and communication technologies. | **ICT1.c.9.h:** I can generate an authentic graphic Communication example. | |
| **Standard: MNF1:** Students will be able to select and use manufacturing technologies. | **MNF1.a.9.h:** I can select and apply the appropriate units and scales for situations involving measurement. | |
| SUPPORTING STANDARDS AND LEARNING TARGETS | | **Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.* |
| **Standard: AC1:** Students will be able to select and use architecture and construction technologies. | **AC1.b.12.h:** I can calculate required materials for residential construction applications. | Students will demonstrate thier understanding by completing variuous assessments as well as their use during the completion of projects |
| | **AC1.b.14.h:** I can apply conventional construction measurement processes accurately (i.e., geometric and trigonometric functions). | |
| **Stage 3: Learning Activities** *A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unforld in a natural flow?* | | |
| **GUIDING UNIT QUESTIONS** *Using Costas Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning* | **STRATEGIES/ACTIVITIES** *What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.* | **RESOURCES/MATERIALS** *This includes an applicable textbooks, software, industry recognized certification software/tools, subcriptions (such asPLTW), etc.* |
| how can planning help in the creation and design of manufactured items | calculate material costs and project costs | |
| how is the design proces used as a communication tool | Design parts and create sketches of exisiting parts/projects | |
| | create a procedure for work | |
| | daily journal or log to record work completed | |

| *Unit 3 Manufacturing with wood* | | |
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| **STAGE 1: Desired Unit Results**<br>*What will students understand as a result of the unit?* | | **STAGE 2: Assessment Evidence**<br>*By what criteria will performances of understanding be assessed? Through what authentic performance tasks will students demonstrate the desired unit results?* |
| **ESSENTIAL QUESTION (s)**<br>*What thought-provoking questions will foster inquiry, understanding, and transfer of learning?* | | **Success Criteria with Standards**<br>*The criteria for evaluating performance on standards is constant.* |
| What strategies and processes can I use to become a more effective creator, thinker and problem solver? | | CTE standards-based Rubric: Throughout course, students and teachers use rubric for communication of success criteria, reflection, goal setting, and feedback.<br><br>Students continually reflect on and discuss essential questions in their notebook and orally in class. |
| What is effective teamwork? What strategies can I use/teams use to work better together? How can perspectives and experiences of a diverse group develop innovative solutions to a given problem? | | |
| How might technical knowledge and skills influence one's employability and advancement opportunities within various work settings? | | |
| **PRIORITY CAREER & TECHNICAL STANDARDS & Learning Targets** | | **Performance Tasks Options/ Assessment Strategies by Standard**<br>*Students may be given options to show their learning in varied ways.* |
| **Creativity, Critical Thinking, Communication and Collaboration**<br>**4C2: Students will formulate and defend judgments and decisions by employing critical thinking skills.** | | |
| a: I develop effective resolutions for a given problem, decision or opportunity using available information. | 4C2.a.11.h: I can determine the information needed to address an identified problem. | Students will demonstrate their understanding of safety and responsiblility learned from lectures, readings and demonstrations while working in the lab . These skills will be evaulated using an AT&E safety skills rubric |
| | 4C2.a.15.h: I can determine the best resolution for a problem, decision or opportunity based on given criteria. | |
| b: I develop and implement a resolution for a new situation using personal knowledge and experience. | 4C2.b.5.h: I can apply past experience to develop a course of action for a new situation. | |
| | 4C2.b.6.h: I can use existing knowledge to develop a resolution for a new situation, problem or opportunity. | |
| **Career Development**<br>**CD4: Students will identify and apply employability skills.** | | |
| a: I identify and demonstrate positive work behaviors and personal qualities needed to be employable. | CD4.a.9.h: I can use positive workqualities typically desired in each of the career cluster's pathways. | Students will demonstrate their understanding of safety and responsiblility learned from lectures, readings and demonstrations while working in the lab . These skills will be evaulated using an AT&E safety skills rubric |
| | CD4.a.10.h: I can manage work roles and responsibilities to balance them with other life roles and responsibilities. | |
| c: I identify and exhibit traits for retaining employment. | CD4.c.4.h: I can model behaviors that demonstrate reliability and dependability. | |
| | CD4.c.5.h: I can maintain appropriate dress and behavior for the job to contribute to a safe and effective workplace/jobsite. | |
| **Information, Media, Technology**<br>**IMT1: Students will access, interpret and evaluate information from a variety of sources in order to inform and support premises, arguments, decisions, ideas and initiatives.** | | |
| **PRIORITY CONTENT STANDARDS & Learning Targets** | | **Performance Tasks Options/ Assessment Strategies by Standard**<br>*Students may be given options to show their learning in varied ways.* |

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| **Standard: BB1:** Students will analyze the core concepts of technology. | **BB1.b.6.h:** I can choose and perform the material processing operations of forming (e.g., bending, pressing, drawing, rolling), bonding (e.g., gluing, soldering, brazing, spot welding, gas welding, arc welding), fastening (e.g., screws, nuts & bolts, rivets, clips, pins, nails) and finishing (e.g., surface preparation, cleaning, treatment, coating). | Students will demonstrate their understanding of woodworking skills and techniques learned from lectures, readings and demonstrations by completing varius woodworking projects of increasing difficulty. These skills will be evaulated using an AT&E woodworking rubric |
| **Standard: MNF1:** Students will be able to select and use manufacturing technologies. | **MNF1.a.7.h:** I can identify safety and health protections and procedures that are critical to worker well-being. | |
| | **MNF1.a.8.h:** I can use appropriate tools, materials, and machines to repair a malfunctioning system. | |
| | **MNF1.a.9.h:** I can select and apply the appropriate units and scales for situations involving measurement. | |
| | **MNF1.e.8.h:** I can use a manufacturing system to produce a product. | |
| | **MNF1.f.7.h:** I can recognize servicing keeps products in good operating condition. | |
| | **MNF1.f.8.h:** I can recognize technologies provide a means for humans to alter or modify materials and to produce products. | |
| SUPPORTING STANDARDS AND LEARNING TARGETS | | **Performance Tasks Options/ Assessment Strategies by Standard** *Students may be given options to show their learning in varied ways.* |
| *enter supporting standards here, add more rows as needed* | *enter learning targets, add more rows as needed* | |

**Stage 3: Learning Activities**

*A brief summary of the key learning activities- How will students build knowledge & develop skills? How will learning be relevant, accessible, and engaging? How will the learning unforld in a natural flow?*

| GUIDING UNIT QUESTIONS | STRATEGIES/ACTIVITIES | RESOURCES/MATERIALS |
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| *Using Costas Level of Thinking, what questions will hook and hold students so that they develop a deep understanding of the desired results? The guiding questions are more topic-specific to the particular unit. They guide the exploration of the essential questions and rigor of the standards. This may include questions that guide project based/ problem based learning* | *What learning strategies and experiences will authentically engage students so that they gain understanding the desired results? This includes strategies and activities that help learners acquire targeted knowledge and skills, make meaning of important ideas, and transfer their learning to new situations. Consider how the learning will be tailored and flexible to address the interests and learning styles of all students.* | *This includes an applicable textbooks, software, industry recognized certification software/tools, subcriptions (such asPLTW), etc.* |
| what procedure can be used to prepared raw materials for use in wood manufacturing | Students will build or construct projects | lumber |