



# SCHOOL DISTRICT OF MONROE

*Preparing for the Future, One Child at a Time*

## Advanced Construction/Millwork

### **Course Description:**

The curriculum for this course is developed from the Madison Colleges Woods-1A Course and [Wisconsin Standards for Technology and Engineering](#). This is an elective course in which students will complete Madison Colleges Woods-1A curriculum as this course is a Dual Credit Course. This is an advanced course that will stress problem solving activities using machine and hand tool operations to complete various activities using wood. This is a 2 Trimester Course. The other time spent in this course will be to design, produce and assemble various projects needed for the School District of Monroe and community service programs. The information in this course overview outlines what students should understand and be able to do by the end of the semester/year. Students must meet the prerequisites as listed in the course description book to take this course.

### **Mastery Standards:**

Knowledge of equipment and safety procedures are essential to responsible use of equipment and tools in the woods manufacturing industry . (AC1.c, AC1.d, AC1.e, AC1.f, MNF1.a)

Understanding and knowledge of tools and materials is requisite for analyzing sound choices in methods and materials in the woods manufacturing industry. (BB1.b)

Quality design, engineering, and construction require accurate knowledge and application of measuring systems. (AC1.a, AC1.b)

Experience applying design theory allows for stronger analysis of plans and designs before investment of resources in final production. (ENG1.a, ENG2.a, ENG2.b, ENG3.a, ENG3.b-ENG4.a)

Executing and receiving evaluations and feedback on projects is vital to learning and improving skills. (ENG4.c, ENG5.a)

Specific tasks require experience and knowledge to correctly identify, select, and safely use appropriate tools, machines, products, systems, and techniques. (MNF1.a, MNF1.b, MNF1.c, MNF1.d, MNF1.e, MNF1.f, MNF1.g, MNF1.h)

Unit	Description of Unit and Learning Targets
<p><b>Unit Title: Safety</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>How do you incorporate safety knowledge and practice into the Woods Manufacturing Industry?</li> </ul>	<p>Students will learn and review safety procedures before working with tools and machines.</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>I can demonstrate and use the hand and power tools of the trade properly and safely.</li> <li>I can demonstrate the safety procedures and practices in various work environment settings pertaining to the Woods Manufacturing Industry.</li> <li>I can identify safety and health protections and procedures that are critical to worker well being.</li> </ul>
<p><b>Unit Title: Madison Colleges “Woods-1A” Curriculum - “Measurement and Layout”</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>How do you incorporate safety knowledge and practice into the Woods Manufacturing Industry?</li> </ul>	<p>Students will review and apply measurement skills in project work.</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>I can calculate required materials for Woods Manufacturing projects.</li> <li>I can apply conventional construction measurement processes accurately.</li> <li>I can use conventional construction formulas to determine</li> </ul>

	<p>production requirements.</p> <ul style="list-style-type: none"> <li>I can select and apply the appropriate units and scales for situations involving measurement.</li> </ul>
<p><b>Unit Title: Madison Colleges “Woods-1A” Curriculum - Sawing</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>How do you incorporate safety knowledge and practice into the Woods Manufacturing Industry?</li> </ul>	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>I can safely and accurately use a Skil-Saw.</li> <li>I can safely and accurately use a Miter Saw.</li> <li>I can safely and accurately use a Bandsaw.</li> <li>I can safely and accurately use a Saber Saw or Scroll Saw..</li> <li>I can safely and accurately use a Radial Arm Saw.</li> <li>I can safely and accurately use a Panel Saw.</li> <li>I can safely and accurately use a Table Saw.</li> </ul>
<p><b>Unit Title: Madison Colleges “Woods-1A” Curriculum - Milling</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>How do you incorporate safety knowledge and practice into the Woods Manufacturing Industry?</li> </ul>	<p>Students will review and apply their skills working with milling equipment.</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>I can safely and accurately use a Power Hand Plane.</li> <li>I can safely and accurately use a Jointer.</li> <li>I can safely and accurately use a Planer or Surfacer.</li> </ul>
<p><b>Unit Title: Madison Colleges “Woods-1A” Curriculum - Boring</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>How do you incorporate safety knowledge and practice into the Woods Manufacturing Industry?</li> </ul>	<p>Students will review and apply their skills working with boring equipment.</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>I can safely and accurately use a Power Hand Drill.</li> <li>I can safely and accurately use a Power Hand Driver.</li> <li>I can safely and accurately use a Drill Press.</li> </ul>
<p><b>Unit Title: Madison Colleges “Woods-1A” Curriculum - Abrasives and Sanders</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>How do you incorporate safety knowledge and practice into the Woods Manufacturing Industry?</li> </ul>	<p>Students will review and apply their skills working with Sandpaper and Sanding equipment.</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>I can accurately determine the type of abrasive to use to finish a wood product.</li> <li>I can use correct and proper hand sanding techniques.</li> <li>I can safely and accurately use a Portable Power Sanding equipment.</li> <li>I can safely and accurately use a Disc Sander.</li> <li>I can safely and accurately use a Oscillating Spindle Sander.</li> <li>I can safely and accurately use an Edge Sander.</li> </ul>
<p><b>Unit Title: Individual/Class Project Production</b></p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> <li>How do you design a project to meet specific requirements?</li> </ul>	<p>Students will design and manufacture the projects needed for school and community.</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> <li>I can understand established design principles used to evaluate existing designs, to collect data and to guide the design process.</li> <li>I can analyze the process of engineering design accounts for a number of factors to make decisions.</li> <li>I can realize the design of structures includes a number of requirements.</li> <li>I can build or construct an object using the design process.</li> <li>I can use various cabinet making techniques to design and produce a product.</li> <li>I can use various types of joinery to assemble the parts to</li> </ul>

	make the end product.
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