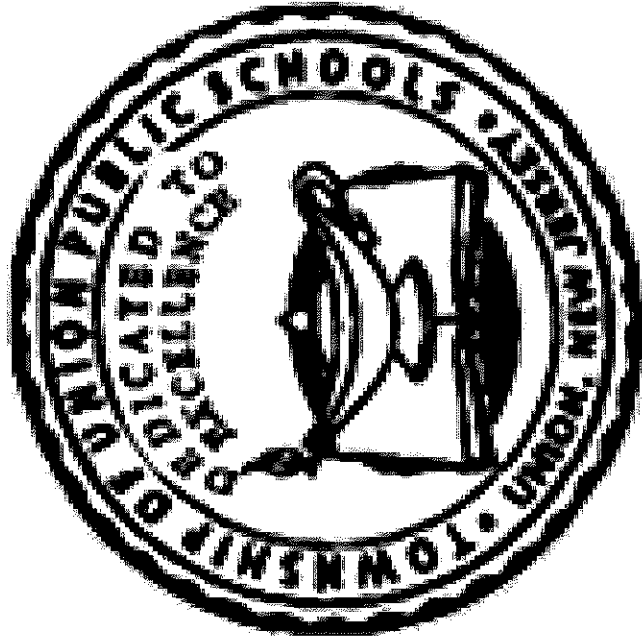
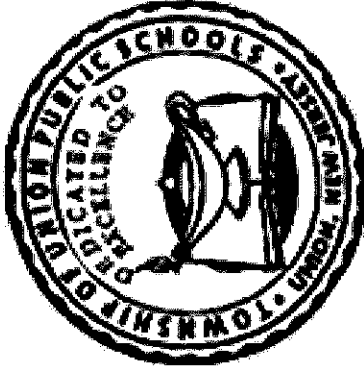


TOWNSHIP OF UNION PUBLIC SCHOOLS



Woodworking I (IE250)

Curriculum Guide Approved June 2015



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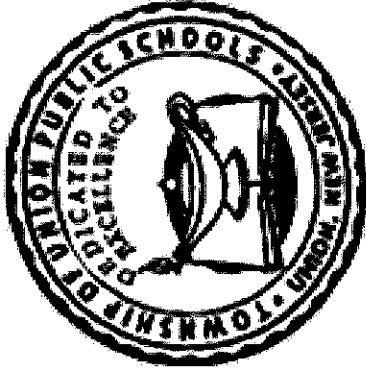
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TOWNSHIP OF UNION PUBLIC SCHOOLS

Administration

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Woodworking I (IE 250)

Curriculum Committee Members

Edward Gottlin

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Mission Statement

The Township of Union Board of Education believes that every child is entitled to an education designed to meet his or her individual needs in an environment that is conducive to learning. State standards, federal and state mandates, and local goals and objectives, along with community input, must be reviewed and evaluated on a regular basis to ensure that an atmosphere of learning is both encouraged and implemented. Furthermore, any disruption to or interference with a healthy and safe educational environment must be addressed, corrected, or when necessary, removed in order for the district to maintain the appropriate educational setting.

Philosophy Statement

The Township of Union Public School District, as a societal agency, reflects democratic ideals and concepts through its educational practices. It is the belief of the Board of Education that a primary function of the Township of Union Public School System is to formulate a learning climate conducive to the needs of all students in general, providing therein for individual differences. The school operates as a partner with the home and community.

Statement of District Goals

- **Develop reading, writing, speaking, listening, and mathematical skills.**
- **Develop a pride in work and a feeling of self-worth, self-reliance, and self-discipline.**
- **Acquire and use the skills and habits involved in critical and constructive thinking.**
- **Develop a code of behavior based on moral and ethical principles.**
- **Work with others cooperatively.**
- **Acquire a knowledge and appreciation of the historical record of human achievement and failures and current societal issues.**
- **Acquire a knowledge and understanding of the physical and biological sciences.**
- **Participate effectively and efficiently in economic life and the development of skills to enter a specific field of work.**
- **Appreciate and understand literature, art, music, and other cultural activities.**
- **Develop an understanding of the historical and cultural heritage.**
- **Develop a concern for the proper use and/or preservation of natural resources.**
- **Develop basic skills in sports and other forms of recreation.**

Course Description

Grade 9 – 12

Basic Woodworking Technology is a 1 semester elective course. It is intended for the student who is interested in the field of woodworking technology. Woodworking fundamentals in design, drawing, bill of materials, reading plans, wood identification and lumber processing technology will be covered. Methods in the safe and proper use of basic hand and power tools along with processes such as layout, measuring, boring, drilling, sawing, fastening and planning. Other processes covered are the use of abrasives, finishing, and the safe use of all hand and power equipment. Lab work will include an assortment of woodworking projects.

Recommended Textbooks:

Modern Woodworking

By

The Goodheart-Wilcox Company, Inc.

Course Proficiencies

Students will be able to...

1. Have an understanding of woodshop safety and it's relation to industry.
2. Have an understanding of project drawing and estimating.
3. Have a basic knowledge of layout tools and measuring.
4. Have a basic knowledge of layout and cutting irregular surfaces.
5. Have an understanding of stationary power tools.
6. Have a basic knowledge of hand saws and planes.
7. Have an understanding of portable power tools.
8. Have a basic knowledge of project assembly and construction.
9. Have an understanding of abrasives.
10. Have a basic understanding of finishing materials.
11. Have an understanding of career opportunities in woodworking.

Curriculum Units

Unit 1: Shop Safety

Unit 2: Portable and stationary power tools

Unit 3: Project design and drawing

Unit 4: Woodworking joints

Unit 5: Planing and sawing

Unit 6: Drilling and boring

Unit 7: Adhesives, gluing, Clamping

Unit 8: Mechanical Fasteners and Assembly

Unit 9: Sanding and Finishing

Unit 10: Career Opportunities

Pacing Guide- Course

Content

- Unit 1: Wood Shop Safety
- Unit 2: Portable and Power Tools
- Unit 3: Project Design and Drawing
- Unit 4: Woodworking Joints
- Unit 5: Planing and sawing
- Unit 6: Drilling and Boring
- Unit 7: Adhesives, Gluing and Clamping
- Unit 8: Mechanical Fasteners and Assembly
- Unit 9: Sanding and Finishing
- Unit 10: Career Opportunities

Number of Days

- 2-3 weeks
- 5-6 weeks
- 5-6 weeks
- 3-4 weeks
- 3-4 weeks
- 2-3 weeks
- 2-3 weeks
- 3-4 weeks
- 2-4 weeks
- 1-2 weeks

Unit 1: Wood Shop Safety

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>Why is shop safety Important?</p> <p>Are there safety features for different types of tools And machinery?</p> <p>What is required to learn about the safe use and techniques of all the woodworking machines and tools within the wood shop?</p> <p>Is it important to wear safety glasses?</p>	<p>To promote safety in the Classroom</p> <p>Encourage students to abide by established safety rules and regulations.</p> <p>Learn and practice safe and responsible procedures when using all of the tools and equipment in the wood shop.</p> <p>9.3.12ac</p>	<p>View safety video</p> <p>Read text book and complete worksheets</p> <p>Observe and participate in machine demonstrations</p>	<p>Tests / quizzes</p> <p>Observations</p> <p>Peer and self evaluation</p>

Unit 2: Portable and Power Tools

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>Why is it necessary to have a multitude of machines and equipment</p> <p>How do you safely and properly use all available equipment in the shop</p>	<p>Develop a mastery in the knowledge and Use of all the available machines and equipment in the shop</p> <p>Differentiate the capabilities and purpose of the equipment and the knowledge of which is best suited for use of the desired operation being performed</p> <p>9.3.12.ac;9.2.12.c.3;9.3.12.ac.6;</p>	<p>Observe presentations and demonstrations</p> <p>Perform tool and machine procedures under supervision of instructor</p> <p>Complete a variety of class assignments in progressive difficulty to achieve mastery of skills required</p>	<p>Tests / quizzes</p> <p>Projects</p> <p>Observations</p> <p>Self Evaluation</p>

Unit 3: Project Design and Drawing

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>Why is it necessary to design and draw your intended project before construction?</p> <p>How do you incorporate your ideas and concepts onto paper such that it can be understood by everyone?</p>	<p>Design all the important aspects of a desired object and incorporate into a three view drawing.</p> <p>Use their design concepts and learned techniques to produce a three view representation of their project</p> <p>8.2.12.c.6</p>	<p>Observe presentations and demonstrations,</p> <p>Self Evaluation</p> <p>read handout and textbook.</p> <p>Hands on instruction with one on one interaction.</p> <p>Use of graph paper, rulers, straight edges, Triangles, and mechanical drawing tools to produce a scaled drawing</p>	<p>Observe presentations and demonstrations, Tests / quizzes</p> <p>Projects</p> <p>Observations</p> <p>Results of drawings</p> <p>Self and peer assessment</p>

Unit 4: Woodworking Joints

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>Why is it necessary to have knowledge of a variety of woodworking joints?</p> <p>How do you duplicate the desired wood joint for your project?</p> <p>Which type of machinery is best suited for the desired result?</p>	<p>Select the proper joint for the particular application.</p> <p>Use the various equipment To produce the desired Wood joint safely and properly.</p> <p>Measure, layout and prepare prior cutting and shaping the wood.</p> <p>9.2.12.c.3</p>	<p>Observe presentations And demonstrations, read Handouts and text book.</p> <p>Hands on instruction with one on one interaction with supervisor.</p> <p>Use of a variety of tools And equipment to layout, Cut and shape to proper Size and dimensions.</p>	<p>Teacher observation</p> <p>Accuracy and compliance With stated requirements</p> <p>Tolerance between mating parts of project</p> <p>Self and peer assessment</p>

Unit 5: Planing and Sawing

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>What are the key components of planes and Saws?</p> <p>How do you decide on the right saw for the right job?</p> <p>What procedures need to be followed for quality planning and sawing?</p>	<p>Develop an understanding of the characteristics of saws and planes.</p> <p>Understand how to choose the proper plane and/or saw for the correct job.</p> <p>Demonstrate proper techniques for using hand saws correctly and safely.</p> <p>9.2.12.c.3;9.3.12.ac</p>	<p>Observe demonstrations and presentations.</p> <p>Hands on instruction</p> <p>One on one tutelage.</p>	<p>Teacher observation</p> <p>Projects</p> <p>Tests and Quizzes</p> <p>Self and peer assessment</p>

Unit 6: Drilling and Boring

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CP/s)	Activities	Assessments
<p>What are the key components to understanding Drilling and Boring?</p> <p>What are the types of drills and boring tools available to the student?</p> <p>How do you properly and safely use drilling an boring equipment?</p>	<p>Develop a mastery in components to better understand drilling and boring.</p> <p>Differentiate between drilling and boring techniques.</p> <p>Properly and safely install equipment in accordance with instructor specifications</p> <p>9.3.12.ac.6</p>	<p>Observe presentations and demonstrations</p> <p>Read handouts and texts</p> <p>Perform tool and machine procedures</p> <p>Complete a variety of class assignments and tasks in differentiated instruction to master the skill necessary to achieve success.</p>	<p>Teacher observation</p> <p>Projects</p> <p>Student assessment</p> <p>Tests and Quizzes</p> <p>Student Presentations</p> <p>Self and peer assessment</p>

Unit 7: Adhesives, Gluing, Clamping

Essential Questions	Instructional Objectives/ Skills and Benchmarks_(CPIs)	Activities	Assessments
<p>Why is it necessary to have different adhesives and glues in the woodshop?</p> <p>What is the difference between synthetic and rubber based materials?</p> <p>Why is there a multitude of different clamps in the woodshop?</p>	<p>Understand the different characteristics of glues and adhesives.</p> <p>Differentiate between synthetic and rubber based Materials.</p> <p>Have a basic understanding of bar, hand and c clamps.</p> <p>9.3.12.ac.6</p>	<p>Observe presentations And demonstrations.</p> <p>Read handouts and text.</p> <p>Perform gluing and clamping activities under supervision of instructor.</p> <p>Complete one project using different clamps and glues.</p>	<p>Teacher observation</p> <p>Projects</p> <p>Student assessment</p> <p>Test/Quizzes</p> <p>Student Presentations</p> <p>Self and peer assessment</p>

Unit 8: Mechanical Fasteners and Assembly

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>Why is it necessary to have a multitude of wood fasteners</p> <p>What type of fasteners are available for the beginner woodworker</p> <p>How are the fasteners properly used during assembly</p>	<p>Develop a knowledge of all available wood fasteners</p> <p>Differentiate between the capabilities of available fasteners</p> <p>Construct a given project using proper fasteners</p> <p>9.3.12.ac.6</p>	<p>Observe presentations and demos.</p> <p>Read handouts and text.</p> <p>Perform proper techniques while under supervision.</p> <p>Complete a variety of tasks to achieve skills needed for using fasteners.</p>	<p>Teacher observation</p> <p>Projects</p> <p>Test/Quizzes</p> <p>Student Presentations</p> <p>Self and peer assessment</p> <p>Proper fitting and alignment using wood fasteners.</p>

Unit 9: Sanding and Finishing

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>What are the key components which enable a student to understand the fundamentals of sanding and finishing materials.</p>	<p>Develop knowledge of the proper methods and techniques required to apply a proper finish to a project.</p>	<p>Observe presentations and demonstrations. Read handouts and textbook.</p>	<p>Teacher observation Projects Student assessment</p>
<p>What are the preparations needed for finishing a piece of wood properly.</p>	<p>Use available tools and equipment to prepare a project properly for finishing.</p>	<p>Hands on instruction with one on one interaction with supervisor.</p>	<p>Test/Quizzes Student Presentations</p>
<p>What types of finishes are available to the beginner woodworker.</p>	<p>Use available finishes according to manufactures standards for quality results. 9.2.12.c.3;9.3.12.ac.6</p>		<p>Self and peer assessment</p>

Unit 10: Career Opportunities

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
What are the key components which enable a student to be familiar with the variety of career opportunities available in the field of woodworking.	Develop an understanding and appreciation for the variety of available woodworking careers and opportunities. 9.2.12.c.1	Observe presentations and demonstrations. Read handouts and textbook. Visit a cabinet making shop.	Review of completed worksheets. Self and peer assessment Student Presentations Teacher observation and interaction.

New Jersey Core Curriculum Content Standards
Academic Area

Technology

(8.2.12.c.1-design, 8.2.12.c.6- create scaled drawings)

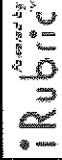
Career Awareness

(9.2.12.c.1-career goals, 9.2.12.c.3-career skills)

Life and Careers (construction)

(9.3.12.ac.1-vocabulary and symbols for architecture and construction, 9.3.12.ac.2-construction skills,
9.3.12.ac.6 -implement drawing and specs. of project plans,
9.3.12.ac.cst.8-demonstrate construction craft,9.3.12.ac.cst.9-safely use tools

New Jersey Scoring Rubric

				
Measurement	Poor	Fair	Good	
	No attention to measurements. Very little accuracy in following plans.	Minor measurement errors. Plans followed but some steps skipped or done incorrectly.	Measurements are accurate. Plans followed.	
Cuts / Joints	Poor Cuts not square, joints do not fit tightly.	Fair Some minor errors in cuts or joint fit.	Good Cuts accurate. Joints fit tightly.	
Assembly	Poor Little care taken in assembly of project. Some pieces do not fit correctly. Evidence of glue	Fair Minor errors in assembly. Overall assembly is accurate. Minor evidence of glue	Good No visible errors in assembly. No visible glue.	
Sanding	Poor Large scratches in wood surface. Sanding across grain is obvious. Not sanded to the proper grit paper.	Fair Some scratches are visible. Some cross grain sanding may be visible.	Good Smooth finish with no visible scratches.	

	Poor	Fair	Good
Finish	<p>Poor</p> <p>Stain is blotchy or incomplete. Finish does not cover all of the wood or has visible brush marks and bubbles.</p>	<p>Fair</p> <p>Stain is not consistent throughout the project. Finish has minor imperfections.</p>	<p>Good</p> <p>Stain is even. Finish is even with only the smallest of imperfections noticeable.</p>
Safety	<p>Poor</p> <p>Student neglects to use proper safety equipment and is careless in the work. Does not keep area neat and organized.</p>	<p>Fair</p> <p>With prompting, student uses safety glasses and ear protection. Student is somewhat careless about work and does not keep area neat.</p>	<p>Good</p> <p>Student uses safety glasses/ear protection, works carefully and keeps work area neat and clutter free.</p>
Craftsmanship	<p>Poor</p> <p>Project has many errors. Student did not apply given talent.</p>	<p>Fair</p> <p>Project has few minor errors. Student applied given talent to satisfactory standards.</p>	<p>Good</p> <p>Project built to detailed standards. Able to be sold in a store.</p>