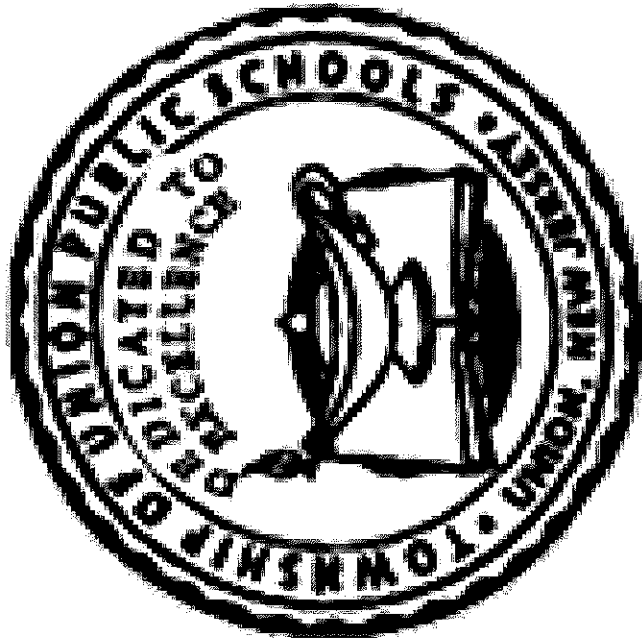
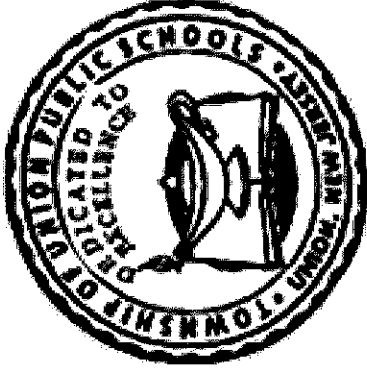


TOWNSHIP OF UNION PUBLIC SCHOOLS



Woodworking III (IE460)

Curriculum Guide Approved June 2015



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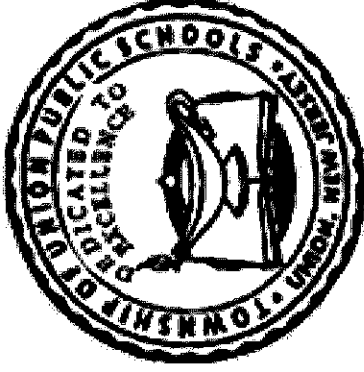
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TOWNSHIP OF UNION PUBLIC SCHOOLS
Administration

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Woodworking III (IE 460)

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

Advanced machine cabinetmaking is intended to develop a deeper understanding of the safe and proper use of stationary, portable power and hand tools used to produce a variety of woodworking joints and processes to develop furniture construction. Students will gain a greater understanding of techniques involved in developing cabinet frame, drawer, And door construction along with associated hardware and various glue up procedures along with finishing techniques. The student will develop a deeper understanding of the lumber industry, wood by-products and wood identification.

Activities for the student will include using a multitude of shop equipment to produce a variety of increasingly challenging approved projects as their skill level and confidence increase throughout the school year.

Recommended Textbooks:

MODERN CABINETMAKING –

Umstatted / Davis, Goodheart-Wilcox Publishing Co. Inc.
New York. 2000 Edition

MODERN WOODWORKING –

Willis H. Wagner, Goodheart-Wilcox Publishing Co. Inc. 1996

Course Proficiencies

Students will be able to...

- **Understand and practice woodworking safety**
- **Develop and understand woodworking project & cabinetmaking designs**
- **Identify and understand methods of project and furniture construction and assembly**
- **Understand and demonstrate the safe operation of stationary and portable woodworking power tools**
- **Explore salaries and careers in cabinetmaking and woodworking**
- **Understand elements of footings and foundations**
- **Understand elements of framing walls, floors and ceilings with doors & windows**
- **Understand elements of roof framing & materials**
- **Understand using a scale in measuring & construction of a house frame model**

Curriculum Units

- **Understand and practice woodworking safety**
- **Develop and understand \woodworking project & cabinetmaking designs**
- **Identify and understand methods of project and furniture construction and assembly**
- **Understand and demonstrate the safe operation of stationary and portable woodworking power tools**
- **Explore salaries and careers in cabinetmaking and woodworking**
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Pacing Guide- Course

<u>Content</u>	<u>Number of Days</u>
<u>Unit 1:</u> SAFETY CODES AND PLANNING	5 days
<u>Unit 2:</u> FURNITURE AND CABINETMAKING DESIGN	20 days
<u>Unit 3:</u> METHODS OF FURNITURE CONSTRUCTION	15 days
<u>Unit 4:</u> PLASTIC LAMINATES	10 days
<u>Unit 5:</u> WOODWORKING AND BUILDING TRADE SAFETY	15 days
<u>Unit 6:</u> FOOTINGS AND FOUNDATIONS	20 days
<u>Unit 7:</u> FRAMING WALLS AND FLOORS	15 days
<u>Unit 8:</u> FRAMING DOORS AND WINDOWS	20 days
<u>Unit 9:</u> ROOF FRAMING AND MATERIALS	15 days
<u>Unit 10:</u> DESIGN & PROBLEM SOLVING	10 days
<u>Unit 11:</u> CAREERS IN WOODWORKING	5 days
	1 week block 33 weeks +/-

Unit 1: Safety Codes and Planning

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>What is safety?</p> <p>Why is safety important?</p> <p>Why study safety?</p> <p>How can you keep the job Working environment safe?</p>	<p>Understand why safety is important.</p> <p>Understand that safety is everyone's responsibility.</p> <p>Ensure students understand what is required to maintain a safe job environment..</p> <p align="right">9.3.12..ac</p>	<p>Develop safety plan that can be utilized by the entire class.</p> <p>Make a safety poster to remind the 1st and 2nd level Students of proper safety practices</p>	<p>Tests / quizzes</p> <p>Observations</p> <p>Peer and self evaluation</p>

Unit 2: Furniture and cabinetmaking Design

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CP/Is)	Activities	Assessments
<p>What is good furniture design?</p> <p>What makes up good design?</p> <p>When is each tool used?</p> <p>How do you choose the appropriate tool?</p> <p>What is the proper care of each tool?</p>	<p>Identify the following terms and properly apply their use.</p> <ul style="list-style-type: none"> • Form • Function • Design • Tools • Joinery • Materials <p>9.3.12.ac.6</p>	<p>Observe presentations and demonstrations</p> <p>Research samples of furniture in the woodworking industry.</p> <p>Assign students a variety of problems to show proficiency.</p>	<p>Tests / quizzes</p> <p>Projects</p> <p>Observations</p> <p>Self Evaluation</p> <p>Student drawing results</p>

Unit 3: Methods of Furniture Construction

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>What types of joinery are used for specific pieces of furniture and cabinet making?</p> <p>What tools is used in cabinet making?</p> <p>When designing, can large objects be scaled to fit on small paper?</p>	<p>Describe the parts and terminology of drawer parts</p> <p>Use of appropriate tools to complete assigned problems</p> <p>Properly use each tool as intended</p> <p>Understand the use of the scale to complete assignments accurately</p> <p>8.2.12.c.1</p>	<p>Observe presentations and demonstrations,</p> <p>Self Evaluation</p> <p>Read handouts and textbook.</p> <p>Research samples of projects in the woodworking and cabinet making industries.</p> <p>Assign students a variety of problems to show proficiency.</p>	<p>Observe presentations and demonstrations, Tests / quizzes</p> <p>Projects</p> <p>Observations</p> <p>Self and peer assessment</p>

Unit 4: Plastic Laminates

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>What are finished surfaces?</p> <p>What is a laminate?</p> <p>How are the manufactured?</p> <p>What tools are used specifically?</p> <p>How are plastic laminates bonded to other materials?</p> <p>How is a finished edge applied?</p>	<p>Describe the various types of plastic laminates.</p> <p>Understand layout procedures when using plastic laminates.</p> <p>Understand trimming and cutting procedures when using plastic laminates.</p> <p>Understand bonding procedures when using plastic laminates.</p> <p>9.3.12.ac.6</p>	<p>Observe presentations And demonstrations, read Handouts and text book.</p> <p>Introduce laminates to students.</p> <p>Research a variety of laminates and compare and contrast.</p> <p>Utilize proper bonding and trimming techniques to show proficiency in a completed project.</p>	<p>Teacher observation</p> <p>Accuracy and compliance With stated requirements</p> <p>Tolerance between mating parts pf project</p> <p>Self and peer assessment</p>

Unit 5: Woodworking and Building Trade Safety

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>What is safety?</p> <p>Why is safety important</p> <p>How does practicing safety in the wood shop differ from observing safe practices on the job site?</p>	<p>Understand why safety is important.</p> <p>Understand that safety is everyone's responsibility.</p> <p>Students will be able to list five specialized safety rules at the construction site and five safety rules in the shop and explain how they compare.</p> <p>9.3.12.ac.6;9.3.12.ac-cst.8</p>	<p>Observe demonstrations and presentations.</p> <p>Develop safety plan that can be utilized by the entire class.</p> <p>Make a safety poster.</p> <p>Demonstrate proper safety precautions on a variety of tools.</p>	<p>Teacher observation</p> <p>Projects</p> <p>Tests and Quizzes</p> <p>Self and peer assessment</p>

Unit 6: Footings and Foundations

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>What are the footings for?</p> <p>How are they constructed?</p> <p>What types of footings are most commonly used in residential construction?</p> <p>What does the foundation wall do?</p> <p>What type of material is the foundation wall constructed?</p>	<p>Understand the concept of footings.</p> <p>Understand building standards and requirements.</p> <p>Understand steps involved in staking out a building location.</p> <p>Understand types of excavation required for different building types.</p> <p>Understand terminology and types of foundations.</p> <p>9.3.12.ac.6</p>	<p>Observe presentations and demonstrations</p> <p>Read handouts and texts</p> <p>Complete a variety of class assignments and tasks in differentiated instruction to master the skill necessary to achieve success.</p> <p>Research samples of footings and foundations.</p> <p>Assign students a variety of problems to show proficiency.</p> <p>Model construction.</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: Framing Walls and Floors

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>What's in a wall?</p> <p>How is a wall framed?</p> <p>What material is used in modern construction of walls and floors?</p> <p>What guidelines are used?</p> <p>What is the name of each part of a framed wall and floor?</p>	<p>Understand material and component terminology.</p> <p>Have an understanding of building codes.</p> <p>Know and apply preferred method of dimensioning.</p> <p>Know size, type and application of components.</p> <p>9.3.12.ac.6</p>	<p>Observe presentations And demonstrations.</p> <p>Read handouts and text.</p> <p>Research samples of framed walls and floors</p> <p>Assign students a variety of problems to show proficiency.</p> <p>Model construction..</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: Framing Doors and Windows

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
How are windows and doors framed?	Understand material and component terminology.	Observe presentations and demos.	Teacher observation
What material is used in modern construction of walls and floors?	Building codes.	Read handouts and text.	Projects
What guidelines are used?	Know and apply preferred method of dimensioning.	Research samples of framed windows and doors	Test/Quizzes
What is the name of each part of a frame around a window or door?	Know size, type and application of components.	Assign students a variety of problems to show proficiency.	Student Presentations
What are different types of windows?	Demonstrate the different types of windows. 9.3.12.ac.6	Model construction.	Self and peer assessment

Unit 9: Roof Framing and Materials

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CP/s)	Activities	Assessments
<p>How are windows and doors framed?</p> <p>What material is used in modern construction of walls and floors?</p> <p>What guidelines are used?</p> <p>What is the name of each part of a frame around a window or door?</p> <p>What are different types of windows?</p>	<p>Understand material and component terminology.</p> <p>Building codes.</p> <p>Know and apply preferred method of dimensioning.</p> <p>Know size, type and application of components.</p> <p>Demonstrate the different types of windows..</p> <p>9.3.12.ac.6</p>	<p>Observe presentations and demonstrations.</p> <p>Read handouts and textbook.</p> <p>Hands on instruction with one on one interaction with supervisor.</p> <p>Research samples of framed windows and doors</p> <p>Assign students a variety of problems to show proficiency.</p> <p>Model construction.</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 10: Design and Problem Solving

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>How are problems solved?</p> <p>What is brainstorming?</p> <p>Is the first idea you think of the best?</p> <p>What are concepts?</p> <p>What is prototyping?</p> <p>What is a design loop?</p>	<p>Create a Design Loop with specific steps to solve a problem.</p> <ul style="list-style-type: none"> • Identify the problem • Research how others have solved a similar problem. • Generate solutions. • Choose the best one. • Prototype. • Test. • Revise if necessary <p>Utilize brainstorming techniques.</p>	<p>Observe presentations and demonstrations.</p> <p>Read handouts and textbook.</p> <p>Hands on instruction with one on one interaction with supervisor.</p> <p>Introduce the student to TLA's (Technology Learning Activities)</p> <p>Assign students a variety of TLA problems to show proficiency.</p> <p>Model construction.</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 11: Career in the Woodworking and Building Trades

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>What type of career can woodworking and construction provide?</p> <p>Where would you look for careers in this area?</p> <p>What qualifications are required?</p> <p>What is the pay scale?</p>	<p>Make informed career decisions based on trends in the economy.</p> <p>Understand the variety of opportunities available.</p> <p>9.2.12.ac.1; 9.2.12.c.3</p>	<p>Observe presentations and demonstrations</p> <p>Research careers in the woodworking and building industries.</p> <p>Create a Poster depicting the available careers in woodworking and construction jobs.</p>	<p>Review of completed worksheets.</p> <p>Self and peer assessment</p> <p>Student Presentations</p> <p>Teacher observation and interaction.</p>

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.

Finish

Poor	Fair	Good
Stain is blotchy or incomplete. Finish does not cover all of the wood or has visible brush marks and bubbles.	Stain is not consistent throughout the project. Finish has minor imperfections.	Stain is even. Finish is even with only the smallest of imperfections noticeable.

Safety

Poor	Fair	Good
Student neglects to use proper safety equipment and is careless in the work. Does not keep area neat and organized.	With prompting, student uses safety glasses and ear protection. Student is somewhat careless about work and does not keep area neat.	Student uses safety glasses/ear protection, works carefully and keeps work area neat and clutter free.

Craftsmanship

Poor	Fair	Good
Project has many errors. Student did not apply given talent.	Project has few minor errors. Student applied given talent to satisfactory standards.	Project built to detailed standards. Able to be sold in a store.