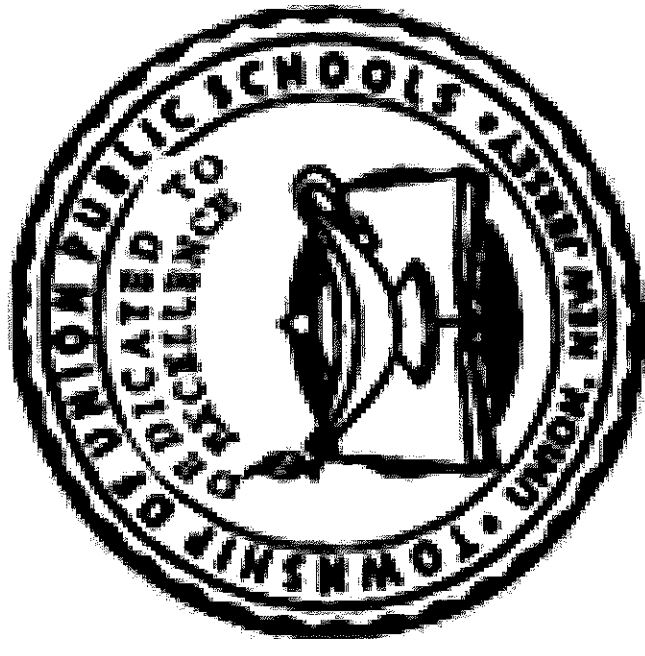
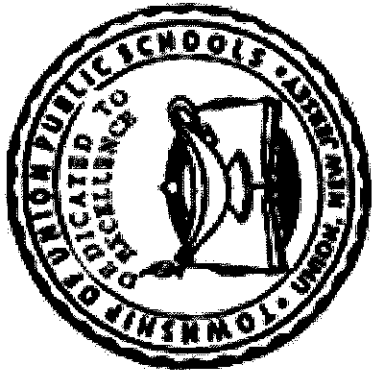


TOWNSHIP OF UNION PUBLIC SCHOOLS



Woodworking IV (IE560)

Curriculum Guide Approved June 2015



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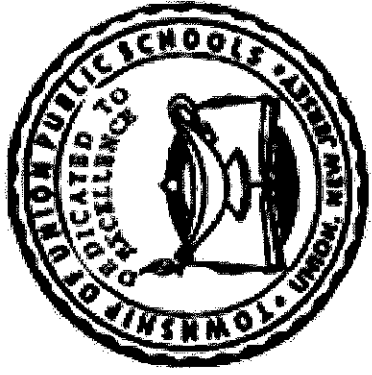
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TOWNSHIP OF UNION PUBLIC SCHOOLS

Administration

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Woodworking IV (IE 560)

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

Wood Technology IV is offered to senior students. This course is the fourth in the series. Hand tools, power tools, building materials, blueprint reading, specifications and building codes will be reviewed. To enhance the student's residential construction experience more in depth study into footings and foundations, wall framing, floor and window framing to roof framing techniques. Interior finishes will be explored.

The purpose of the course is to provide instruction in the different aspects of construction. After students complete a written safety test, students will design and construct various scale models based on their skill and ability. Proper and safe use of tools and equipment will be stressed. Understanding of residential construction standards will be stressed. Students will understand local and state building codes and all safety practices at the construction site.

Recommended Textbooks:

MODERN CABINETMAKING – Umstadd / Davis, Goodheart-Wilcox Publishing Co. Inc.
New York. 2000 Edition

MODERN CARPENTRY– Willis H. Wagner/Howard Bud Smith, Goodheart-Wilcox Publishing Co. Inc. 1996

Course Proficiencies

Students will be able to...

- **Develop safe work habits & practices**
- **Improve the ability to develop and understand building plans & material estimation**
- **Understand building codes and how they apply to the construction trades**
- **Demonstrate the safety & operations of woodworking power tools**
- **Understand & demonstrate the construction of footings, and various girders.**
- **Construction of floor & sub-floor**
- **Understand & demonstrate the construction of walls, doors & windows**
- **Understand & demonstrate the construction of roof & roofing materials**
- **Identify and know the elements of frame construction**
- **Understand & demonstrate the construction of stairways & railings**
- **Recognize various construction careers, apprenticeships & licensed contractors**

Curriculum Units

- Unit 1: SAFE WORK HABITS & PRACTICES
- Unit 2: BUILDING PLANS AND MATERIAL ESTIMATION
- Unit 3: OPERATION OF WOODWORKING TOOLS
- Unit 4: FLOOR FRAMING AND CONSTRUCTION
- Unit 5: FRAMING DOORS AND WINDOWS
- Unit 6: FRAMING WALLS, ROOFS AND MATERIALS
CONSTRUCTION SITE AND LAB SAFETY
- Unit 8: BUILDING MATERIALS
- Unit 9: BLUEPRINT READING
- Unit 10: DESIGN & PROBLEM SOLVING
- Unit 11: CAREERS IN WOODWORKING

Pacing Guide- Course

<u>Content</u>	Number of Days
<u>Unit 1:</u> SAFE WORK HABITS & PRACTICES	5 days
<u>Unit 2:</u> BUILDING PLANS AND MATERIAL ESTIMATION	20 days
<u>Unit 3:</u> OPERATION OF WOODWORKING TOOLS	15 days
<u>Unit 4:</u> FLOOR FRAMING AND CONSTRUCTION	20 days
<u>Unit 5:</u> FRAMING DOORS AND WINDOWS	20 days
<u>Unit 6:</u> FRAMING WALLS, ROOFS AND MATERIALS	20 days
<u>Unit 7:</u> CONSTRUCTION SITE AND LAB SAFETY	15 days
<u>Unit 8:</u> BUILDING MATERIALS	20 days
<u>Unit 9:</u> BLUEPRINT READING	15 days
<u>Unit 10:</u> DESIGN & PROBLEM SOLVING	10 days
<u>Unit 11:</u> CAREERS IN WOODWORKING	5 days
	<u>1 week block</u> 33 weeks +/-

Unit:1 SAFE WORK HABITS & PRACTICES

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CP/s)	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>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 BUILDING PLANS AND MATERIAL ESTIMATION

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>What is dimensional lumber?</p> <p>What does sheathing do?</p> <p>When is vapor barrier used?</p> <p>How do you choose the appropriate materials?</p> <p>What other materials are used in construction?</p>	<p>Students will develop an understanding of the following building materials;</p> <ul style="list-style-type: none"> • Dimensional lumber • Plywood • Particle board • Non-wood materials • Shingles • Siding types • Concrete • Steel • Adhesives • Tiles <p>9.3.12.ac.6,9.3.12.ac-cst.8</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 OPERATION OF WOODWORKING TOOLS

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CP/s)	Activities	Assessments
<p>What types of tools are used for specific applications in the construction industry?</p> <p>What tools is used in framing?</p> <p>What tools is used in finish work?</p> <p>What guidelines are used in safety for each tool used?</p>	<p>Identify the following terms and properly apply their use.</p> <ul style="list-style-type: none"> • Framing square • Rip and cross cut saws • Plane types • Hammer types • Levels • Plumb lines • Power saws • Wood drill bits and types • Power drills <p>8.2.12.c.1</p>	<p>Observe presentations and demonstrations,</p> <p>Read handouts and textbook.</p> <p>Research samples of woodworking construction tools.</p> <p>Assign students a variety of problems to show proficiency.</p> <p>Assign projects to reinforce and enhance skills pertaining to the specific required tools</p>	<p>Observe presentations and demonstrations, Tests / quizzes</p> <p>Projects</p> <p>Observations</p> <p>Self and peer assessment</p>

Unit 4: Floor Framing and Construction

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>What's in a floor?</p> <p>How is a floor framed?</p> <p>What material is used in modern construction of floors?</p> <p>What guidelines are used?</p> <p>What is the name of each part of a framed floor?</p> <p>What is a sub-floor?</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>9.3.12.ac.6,9.3.12-ac-cst.8</p>	<p>Observe presentations And demonstrations, read Handouts and text book.</p> <p>Research samples of framed floors</p> <p>Assign students a variety of problems to show proficiency.</p> <p>Model construction.</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: Framing Doors and Windows

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	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>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>9.3.12.ac.2; 9.3.12.ac-cst.8</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>Tests and Quizzes</p> <p>Self and peer assessment</p>

Unit 6: Framing Walls, Roofs and Materials

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>How is a roof framed?</p> <p>How is a wall framed?</p> <p>What material is used in modern construction of walls roofs?</p> <p>What guidelines are used?</p> <p>What is the name of each part of a framed wall and roof?</p>	<p>How is a roof framed?</p> <p>How is a wall framed?</p> <p>What material is used in modern construction of walls roofs?</p> <p>What guidelines are used?</p> <p>What is the name of each part of a framed wall and roof?</p> <p>9.3.12.ac.6; 9.3.12.ac-cst.8</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>Assign students a variety of problems to show proficiency.</p> <p>Model construction.</p> <p>List modern day construction materials vs. older materials</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: Construction Site and Lab Safety

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>What safety procedures are different in the lab as opposed to the construction 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>Student assessment</p> <p>Test/Quizzes</p> <p>Student Presentations</p> <p>Self and peer assessment</p>

Unit 8: Building Materials

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CP/Is)	Activities	Assessments
What types of materials were used when man first sought shelter?	Understand the history of material processing.	Observe presentations and demos.	Teacher observation
What materials were substituted for others to improve living?	Building codes. Know and apply preferred types of materials.	Read handouts and text. Research samples past and present materials	Projects Test/Quizzes Student Presentations
How is wood processed? Name different materials used in construction?	Know size, type and application of components. 9.3.12.ac.6; 9.3.12.c.1;	Assign students a variety of problems to show proficiency. Model construction.	Self and peer assessment
What are different types of wood ?			

Unit 9: Interpreting Architectural plans

Essential Questions	Instructional Objectives/ Skills and Benchmarks (CPIs)	Activities	Assessments
<p>What is a blueprint?</p> <p>Why are drawings used on the construction site?</p> <p>What guidelines are used?</p> <p>Can you name different types of printed drawings?</p> <p>How was blueprinting developed?</p>	<p>Understand the need for extra sets of technical drawings.</p> <p>Understand the history of blueprinting.</p> <p>Understand the technological changes made in printing technical plans.</p> <p>Know the types of processes to obtain copies of plans.</p> <p>8.2.12.c.6; 8.2.12.c.6 9.3.12.ac.6; 9.3.12.ac.6</p>	<p>Research samples of prints throughout history.</p> <p>Read handouts and textbook.</p> <p>Hands on instruction with one on one interaction with supervisor.</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)

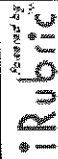
Career Awareness

(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	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	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.