Technology Education Department
Utica Jr. High /High School

Course Title: Technology Education II
Grade Level: 9-12
Course Length: Semester
Credit: ½
Prerequisite: Technology Education I
Instructor: Mr. Mitchell
Room: 155

Course Overview

Technology Education II is class where students will continue to explore shop work with a focus on Manufacturing Technologies, Internal Combustion Engines and Electricity. Instruction will focus on the design process as it relates to manufacturing and requiring teamwork to accomplish many of the tasks. Incorporating the appropriate safety and workmanship standards, and the application of knowledge regarding woodworking, materials, and processes. This class will emphasizes hands on activities, teamwork, career awareness, decision making skills, and time management.

Course objectives

Upon completion of this course students will be able to:

1. Become more technologically literate by performing hands on activities.
2. Engage effectively with others sharing ideas and practices relevant to manufacturing technologies.
3. Develop an understanding of the attributes of design and develop the ability to apply the design process.
4. Use measuring strategies to accurately construct projects.
5. Figure board feet, cutting diagrams and calculate cost of materials.
6. Operate woodworking working machinery safely and proficiently.
7. Understand how to read a set of measured drawings and cutting list.
7. Build projects using measured drawings and cutting list.
8. Understand the usefulness of Jigs and fixtures in the manufacturing process.
10. Explain how the internal combustion engine works.
11. Disassemble then reassemble correctly an internal combustion engine and Identify all of its parts.
12. Identify Electrical components and tools used in household wiring.
13. Wire commonly used electrical circuit, including outlets, switches and light fixtures.

Instructional Methods

Instructor demonstrations, Lecture, Individual and Group instructions, Cooperative learning, Student projects, and hands on practice.

Textbooks

Modern Woodworking
Automotive Mechanic textbook
Tech Design Residential Wiring handbook
Ipad

Expectations

Class participation is extremely important for you to be successful. This includes being prepared, active in class, assisting others if/ when needed and cleaning up the shop when your finished.

Academic Content Standards

Standard 3: Technology for Productivity Applications

Benchmark A: Integrate conceptual knowledge of technology systems in determining practical applications for learning and technical problem-solving.

Benchmark B: Identify, select and apply appropriate technology tools and resources to produce creative works and to construct technology-enhanced models.

Standard 6: Design

Students apply a number of problem-solving strategies demonstrating the nature of design, the role of engineering and the role of assessment.

Benchmark A: Identify and produce a product or system using a design process, evaluate the final solution and communicate the findings.

Benchmark B: Recognize the role of teamwork in engineering design and of prototyping in the design process.

Benchmark C: Understand and apply research, development and experimentation to problem-solving.

Standard 7: Designed world

Students understand how the physical, informational and bio-related technological systems of the designed world are brought about by the design process. Critical to this will be students understanding of their role in the designed world: its process, products, standards, services, history, future, impact, issues and career connections.

Benchmark: A Classify, demonstrate, examine and appraise energy and power technologies.

Benchmark: B Classify, demonstrate, examine and appraise transportation technologies.

Benchmark: C Classify, demonstrate, examine and appraise manufacturing technologies.

Benchmark: D Classify, demonstrate, examine and appraise construction technologies.

Benchmark: E Classify, demonstrate, examine and appraise information and communication.

Benchmark: F Classify, demonstrate, examine and appraise medical technologies.

Benchmark: G Classify, demonstrate, examine and appraise agricultural and related biotechnologies.

Content Outline 1st nine weeks

Week: 1

Intro to class, Safety:

Day 1 Intro to class, go over syllabus, class expectations, classroom rules.

Day 2 Pretest

Day 3 Start Small engine discussion & notes read Chapter 9 packet work on questions

Day 4 Continue working on chapter 9 notes and questions (30pts)

Day 5 Continue Small engine discussion & notes Chapter 10 packet questions

Week: 2

Small Engines:

Day 1 Continue working on chapter 10 notes and questions (20pts)

Day 2 Small engine discussion & notes

Day 3 Work on key terms definitions, looking at parts from the model engine.

Day 4 Finish definitions notes.

Day 5 Working in groups of two, Start the tear down process of the small engines, we will be tarring down step by step as a group to avoid any loss of parts.

Week: 3
Small Engines:

Day 1 Continue the tear down/ discussion process.
Day 2 Continue the tear down/ discussion process.
Day 3 Continue the tear down/ discussion process.
Day 4 Continue the tear down/ discussion process.
Day 5 Continue the tear down/ discussion process.

Week: 4
Small Engines:

Day 1 Reversing the steps we will work as a group reassembling the engines according to all torque specs.
Day 2 Continue Small engine reassembly process.
Day 3 Continue Small engine reassembly process.
Day 4 Finish Small engine reassembly process.
Day 5 Small engine test.

Week: 5
Small Engines/ Electrical Wiring:

Day 1 Electrical wiring readings/ lecture/ notes.
Day 2 Electrical wiring readings/ lecture/ notes.
Day 3 Start discussion of Electricity and electrical wiring.
Day 4 Hands on wiring demonstrations and practice, striping wire, wiring a plug end.
Day 5 Hands on wiring demonstrations and practice, wiring an outlet.

Week: 6
Electrical Wiring:

Day 1 Hands on wiring demonstrations and practice, wiring an switch
Day 2 Hands on wiring demonstrations and practice, wiring an outlet, to a switch, to a light fixture.
Day 3 Hands on wiring demonstrations and practice, wiring an outlet, to a switch, to a light fixture.
Day 4 Finish hands on wiring.
Day 5 Take the Electrical wiring test.

Week: 7
Safety: General shop safety rules, Power hand tool safety demonstration and practice.
Read General Shop Safety Rules.

Day 1 Start review and practice of woodworking tools/ equipment.
Day 2 Continue with review of all shop equipment.
Day 3 Continue with review of all shop equipment.
Day 4 Safety Test
Day 5 Safety test retakes

Week: 8
Plan Review:
Project Demonstration:

Day 1 Study project plans, using these plans make a Cutting list, & Bill of materials.
Day 2 Demonstrate procedures for making the Clock Project. Cut parts to width table saw, cut parts to length using miter saw.
Day 3 Demonstrate procedures for making the Clock Project.
Day 4 Demonstrate procedures for making the Clock Project.
Day 5 Demonstrate procedures for making the Clock Project.

Week: 9
Project Demonstration: Assembly, Finishing.

Day 1 Finishing discussion and demonstrations.
Day 2 Assembly of the clock project.
Day 3 Assembly of the clock project.
Day 4 Review for Nine week assessment test.
Day 5 Nine Week Test.

Content Outline 2nd nine weeks

Week: 10
Construct Project:

Day 1 Using the plans & cutting list students will work in the shop constructing the Clock Project.
Day 2 Continue working in the shop on the assigned project.
Day 3 Continue working in the shop on the assigned project.
Day 4 Continue working in the shop on the assigned project.
Day 5 Continue working in the shop on the assigned project.

Week: 11-16
Construct Project:

Day 1 Continue working in the shop on the assigned project.
Day 2 Continue working in the shop on the assigned project.
Day 3 Continue working in the shop on the assigned project.
Day 4 Continue working in the shop on the assigned project.
Day 5 Continue working in the shop on the assigned project.

Week: 17
Construct Project:

Day 1 Continue working in the shop on the assigned project.
Day 2 Continue working in the shop on the assigned project.
Day 3 Continue working in the shop on the assigned project.
Day 4 Continue working in the shop on the assigned project.
Day 5 Finish clock project due for a grade (100)

Week: 18
Nine week test:
Clean up the shop:

Day 1 Review for nine weeks test
Day 2 Nine weeks test
Day 3 Clean out class storage room.
Day 4 End of the semester Cleanup/ Shop maintenance.
Day 5 Finish Shop Cleanup

Evaluation
Student grades for this course will be determined by class participation, in class work, tests, individual & group projects, and cleanup.

Grading Policy
90% and above **A**
80% and above **B**
70% and above **C**
60% and above **D**
59% and below **F**

Assignments 1st Nine Weeks

Classroom assignments:

Chapter 9 Questions	30pts
Chapter 10 Questions	20pts

Tests:

Small Engines Test	50pts
Electricity Test	50pts

Participation:

2nd nine weeks	50pts

Cleanup:

2nd nine weeks	25pts

Projects:

Clock project	50pts

Assignments 2nd Nine Weeks

Classroom assignments:

Review worksheet	25pts

Tests:

Safety test	50pts

Participation:

1st nine weeks	50pts

Cleanup:

1st nine weeks	25pts

Projects:

Wood Project review (Clock)	100pts

Class policies

Safety polices:
Students must wear safety glasses at all time when in the shop.
Students must pass a written safety test with 100% and sign the safety pledge before allowed to work in the shop.
Absolutely No Horseplay
Students must demonstrate safe practices at all times.
No open toed shoes.
Avoid wearing loose clothing and jewelry.
All injuries must be reported to the Instructor.
All tools will be used in an appropriate and safe manner at all times.
Safety is everyone responsibility

Following the Safety Rules:
Students are expected to read and follow all posted safety rules. If a student violates any of these safety rules the student will lose his/ her shop privileges. Since this is a hands on class that require the activities to be completed in our shop, students will lose participation points, clean up points and project points. The amount of time a student sits out for safety violations is up to the instructor. The instructor also has the right to issue other appropriate disciplinary actions according to school policy. These disciplinary actions will involve consult with the building principal and parents.

Cleaning:
Each student is expected to clean up after themselves. There will be a cleanup time (5 min.) at the end of each class period in which the students will be assigned specific tasks. The students will need to clean up the whole cleaning time to receive the points. Meaning if they finish their assigned cleaning duty early they need to help out in another area/student until the bell rings. No class will be released until the shop is cleaned up appropriately. NO Passes will be issued to their next class, student must exercise personal responsibility. If cleanup becomes an issue the cleanup time will be increased. If individual students refuse to cleanup, that student will lose shop privileges. **A Clean Shop Is A Safe Shop.**

Food & Drink:
Food and drinks will be allowed in the classroom only. Students are responsible for cleaning up after themselves. Food & Drink privileges will be terminated for the entire class if trash is found by the instructor.

Media Devices:
The use of Ipads, phones are allowed, and in some cases expect, to be used in the classroom only. These devices should be used without sound and not while the Instructor is speaking. Use of these devices in the shop area is NOT Allowed, students need to stay 100% focused on what they are doing.
Violations of these rules will result in loss of privileges.

Attendance:
Students must be in the room (155) before the bell rings. We will strictly adhere to the school tardy policy.

Instructor Availability:
Mr. Mitchell will be available approximately ½ hr before and after school, during planning period, and lunch.
Contact can be made though the High School office:
By phone (740-892-2855)
Or Email (emitchell@uhs.laca.org)

This syllabus is a guide of what should be covered this semester and expectations of the student, the instructor reserve the right to make adjustments to this syllabus at any time.