



Steeleville High School Agriculture Department
Agricultural Mechanics & Technology
1st Period



Course Syllabus

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Pre Requisite: Basic Agriculture Mechanics

Level: 11th & 12th

Credit: .5 Credits (One Semester)

Agricultural Mechanics & Technology is a course that examines current technological advances in the agricultural and mechanical industry. Agricultural Mechanics & Technology prepares students for careers and continuing education in technical fields. Therefore, the course is designed for upper level students and/or students who have completed Introduction to the Agricultural Industry or Basic Agricultural Mechanics. This course is one year in length and upon successful completion of this course with a D or higher, .5 graduation credit will be earned.

Course Description

Agricultural Mechanics & Technology expands students' knowledge and experiences with past and current technologies used in the agricultural and mechanical industry. Course clusters include an introduction to mechanical systems & technology, land measurement, soil & environmental systems, GPS & GIS, electrical motors, sources of power, and advanced metal fabrication.

Course Objectives/Goals

- Students will develop and utilize skills needed to for career pathways in agricultural mechanics and technologies.
- Students will be able to accurately use land surveying methods and legal descriptions for land management scenarios.
- Students will be able to describe how GPS and GIS systems operate and work and how they are used in the agriculture and mechanical industry.
- Students will explore remote sensing technology as used in industry.
- Students will describe the operation of electrical motors and there use in the agricultural and mechanical industry.
- Students will explain how hydraulic systems work and their use in the agricultural and mechanical industry.
- Students will explore the power generation industry

Student Expectations

It is important that students in this class keep an open mind and respect the differences in student ability, backgrounds and beliefs. All students are expected to come to class prepared and participate on a daily basis. Students will be expected to follow all rules listed and described in the Steeleville High School Student Handbook. **It is expected that students wear appropriate attire (safety glasses, closed-toe shoes, protective clothing, etc.) during shop work.** Students will be expected to arrive daily with a writing utensil, notepad and calculator.

Teaching Methods

Agricultural Mechanics and Technology is a course taught through a wide variety of teaching methods, but with a dominant focus through hands-on learning. Students will learn through class lecture, small group discussion, class debate, lab exercises, video, readings, independent study, games, individual and group projects, and more.

Assessments

Students will be assessed through regular completion of homework, projects, class participation, and labs. Quizzes will assess students throughout each unit and a test will be given upon completion of each unit.

Grading Policy

Assignments will vary in points.

The school's standard grading scale will be used in the class

A	89.5% - 100%	B	79.5 – 89.4%	C	69.5% - 79.4%
D	59.5% - 69.4%				

Missed/Late Work

Late homework assignments will automatically be dropped 25% for each day late, unless prior arrangements have been made or the missed assignment was due to an excused absence. Missed quizzes or tests due to an unexcused absence will result in a zero. Make-up dates will be allowed for all quizzes and tests missed due to an excused absence.

Academic Honesty

Academic integrity is a vital component for individual success within Steeleville's Agriculture Department. Plagiarism and cheating by any student will result in a zero for the grade of the assignment and will follow punishment described in the student handbook.

Text

A variety of text material will be given in this course. The primary text material will be MyCaert Agriculture Education State Curriculum readings. Text material will also include, but is not limited to, various textbook chapters, newspaper clippings, pamphlets, Internet articles, news articles, and short narrative briefs.

*The order of units and modules are subject to change. Students will be given a notice

Unit 1: What is Agriculture?	
Module 1	Opportunities in FFA
Module 2	Achievement in FFA
Module 3	Leading the FFA Chapter
Module 4	SAE's: Types, Keeping Records, and Implementing
Unit 2: Introduction to Mechanics and Technology	
Module 5	Identifying Basic Areas of Ag. Mechanics
Module 6	Exploring Careers in Ag. Mechanics
Module 7	Identifying Hazards in Agricultural Mechanics
Module 8	Personal Safety in Agricultural Mechanics
Unit 3: Mechanical Systems & Technology	
Module 9	History of Agricultural Mechanics & Technology
Module 10	Recognizing the Impact of Technological Advances in Ag. Mechanics
Module 11	The Future of Agricultural Mechanics & Technology
Unit 4: Land Measurement	
Module 12	Understanding Land Measurement and Legal Descriptions
Module 13	Using Surveying Equipment
Module 14	Applying Profile Leveling Techniques
Module 15	Applying Differential Leveling Techniques
Module 16	Land Use CDE
Unit 5: Soil and Environmental Systems	
Module 17	Managing Soil, Water, and Waste
Module 18	Soil & Construction
Module 19	Water Quality & Pollution Control Technologies
Module 20	Waste Management Technologies
Unit 6: Team Building Project	
Module 21	Tool ID- Refresher
Module 22	Shop Safety
Module 23	Team Project: Flower Box, Dog house,
Unit 7: Electrical Motors	
Module 24	Introducing Electrical Motors
Module 25	Selecting and Maintaining Electrical Motors & Controls
Module 26	Disassembly and Reassembly of Electric Motors
Unit 8: Sources of Power	
Module 27	Generating Hydroelectric Power
Module 28	Generating Solar Power
Module 29	Generating Power from Wind
Module 30	Growing Biomass for Power
Unit 9: Advanced Metal Fabrication	
Module 31	Metal Fabrication (Foundry, Lathe, & Plasma Cutting)
Module 32	MIG Welding