

Technology can be simply defined as the application of scientific knowledge to solve problems or make life easier. During this class, students will be given the opportunity to learn basic science skills, and then apply those skills to solve real-world problems. Emphasis will be on working and communicating as part of a high-functioning group.

Students who successfully complete this course will gain experience in researching topics, using scientific methods, applying technology, solving problems, communicating both orally and in writing, collaborating as part of a group, and publicly presenting their ideas and solutions to challenges.

I. Organization:

The technology lab is divided into four sections called “suites”. Each suite has three stations called “harbors”. During the course of this school year, students will work in small groups to complete each harbor in three of the four suites.

II. Materials:

Students will be expected to keep detailed notes of their work in a hard covered composition-style notebook. Your teacher will provide you with a notebook as well as instructions for setting it up and using it in the lab.

Students will not be issued a textbook for this course. The technology lab is stocked with a library containing the materials that students will need as they work through the class. All books should remain in the lab.

III. Course Website

The website for this class can be accessed through the Eudora Schools website or through www.eudoraschools.org/ehsmagette. Students should check this website frequently for important information and announcements.

IV. Grades:

Final grades for each quarter will be calculated based on the percentage of points earned according to the following scale:

- 90%-100%: A
- 80%-89%: B
- 70%-79%: C
- 60%-69%: D
- 0%-59%: F

Semester grades will be calculated based on the following formula:

- 40% quarter 1 grade
- 50% quarter 2 grade
- 10% semester final exam

V. Class rules: (PROPS)

- P**- Promote an effective learning environment
- R**- Respect people and property
- O**- Observe computer use guidelines
- P**- Pick up after yourself and your classmates
- S**- Smile and have fun

VI. Objectives:

Aerospace Rocketry Suite

- Understand and practice safe launch procedures
- Measure and record flight telemetry data
- Calculate a rocket's altitude and speed
- Measure drag forces on a rocket using the vertical wind tunnel and analyze the effects of drag on a rocket during flight
- Apply Newton's first and second laws of motion to principles of aerodynamics including
- Identify the types of stability and analyze how manipulating the center of pressure and center of gravity can affect the stability of a rocket
- Design a rocket that will remain stable and perform to specifications
- Perform experiments and test launches to determine the optimal fuel mixture for a bottle rocket
- Calculate the thrust, duration, acceleration, and velocity of a rocket in flight
- Monitor weather patterns to ensure optimal launch conditions

AgriBiotechnology Suite

- Practice safe laboratory techniques and procedures
- Demonstrate the basic techniques used in a biotechnology lab
- Utilize the methods of science to solve problems and answer questions in a biotechnology lab setting
- Apply math skills including statistics and data handling to assist in the interpretation of scientific results
- Demonstrate proper protocols for preparing bacterial plates
- Perform experiments to analyze the ability of various cleaning products to inhibit bacterial growth
- Define the density of a substance, and calculate the densities of several common liquids
- Demonstrate the proper procedures for setting up, loading, running, and interpreting the results of gel electrophoresis
- Describe the historical and current trends in genetically engineering animals and plants.
- Model the structure and function of DNA and chromosomes in cells

Intelligent Systems Suite

- Describe the basic robotic components of automated systems
- Demonstrate and understanding of electrical current and the role that electrical components play in automated systems
- Analyze the role of sensors in automated systems
- Examine the role of software components in automated systems
- Describe how basic binary logic can be used to create simple circuits and programs to run automated systems
- Create computer programs the use external sensors to control various output devices
- Demonstrate the use of robotic components to accomplish simple tasks
- Design and build simple machines and robots to accomplish specific jobs
- Explore the basics of robotics and their uses in bio-related industry, automated systems, and medicine
- Apply various sensory devices to perform specific tasks

VII. Expectations:

- Students will be expected to follow course rules and procedures.
- Students will be expected to be on time for class and remain in the classroom until dismissed.
- Students will be expected to be an active participant in the class.
- Students will be expected to complete the work assigned for this class.
- Students will be expected to use class time efficiently and purposefully.
- Students will be expected to be successful in this class.

Student's Signature

Date

Parent/Guardian Signature

Date