



Foundations of Technology

Course Syllabus 2021-2022

Mr. Von Volen (michael.vonvolen@hcps.org)

Course Description

Foundations of Technology is an activity-based course designed for students to learn about the nature of technology, the impact of technology on society, the engineering design and development process, the core technologies (the building blocks of the designed world) and the major enterprises that produce the goods and services of the designed world.

Students focus on the integration of technology, science, and mathematics to create solutions to problems associated with the major enterprises that produce the goods and services of the designed world. Problem solving experiences will center on the use of tools, machines, and materials to design and construct models, devices, and products that creatively solve complex technological problems.

Foundations of Technology has been designated as a required course for all students in Harford County Public Schools as part of the Maryland State Department of Education's graduation requirements.

Goals for Student Learning

The **goals** of this course are to meet in parts of the state of Maryland Content Standards for Technology.

1. Students will develop an understanding of the nature of technology.
2. Students will develop abilities to assess the impacts of technology.
3. Students will demonstrate knowledge of and apply the engineering design and development process.
4. Students will demonstrate knowledge of and skills related to the core technologies, the building blocks of the designed world.
5. Students will demonstrate knowledge of the major enterprises that produce the goods and services of the designed world.

Textbook and Materials

Protractor

Small 3 ring binder

Pencil/Pen

USB Flash drive

Compass

Ruler

Optional: Colored pencils, erasers, pencil sharpener, Sharpies,

Course Outline

Unit I Introduction to Technology

1. Defining Technology
2. Evolution Technology
3. History of Technology
4. Emerging Technologies
5. Design and Problem Solving
6. Impacts of Technology

Unit II Lab Safety

- 1. Band saw
- 2. Drill press
- 3. Miter saw
- 4. Power drill
- 5. Brad nailer
- 6. Hot glue gun

Unit III Core Technologies

- 1. Mechanical
- 2. Structural
- 3. Material
- 4. Electrical
- 5. Electronic
- 6. Thermal
- 7. Fluid
- 8. Optical
- 9. Biotechnology

Unit IV Resources and Methods of Technology

- 1. Resources
- 2. Technological Systems
- 3. Engineering

Unit V The Design World

- 1. Communication Technology
- 2. Manufacturing Technology
- 3. Construction Technology
- 4. Transportation Technology
- 5. Power and Energy Technology
- 6. Biotechnology Systems

HCPS Grading Policy

| Examples of Product, Process, and Practice | | |
|---|--|--|
| PRODUCT (50%) <i>Culminating Demonstration of Knowledge</i> | PROCESS (30%) <i>Addressing Specific Short-Term Learning Outcomes</i> | PRACTICE (20%) <i>Building Attitudes, Habits, and Skills</i> |
| Does it measure how well students achieved specific learning goals, standards, and/or competencies? | Does it provide feedback to students regarding growth towards the attainment of specific learning goals, standards and competencies? | Does it allow students to practice skills and/or reinforce content learning? |

| Examples of Product, Process, and Practice | | |
|--|--|---|
| PRODUCT (50%) <i>Culminating Demonstration of Knowledge</i> | PROCESS (30%) <i>Addressing Specific Short-Term Learning Outcomes</i> | PRACTICE (20%) <i>Building Attitudes, Habits, and Skills</i> |
| <ul style="list-style-type: none"> Primarily completed in presence of teacher Rubric aligned to standards Accuracy graded | <ul style="list-style-type: none"> Primarily completed in presence of teacher Rubric aligned to standards Accuracy graded | <ul style="list-style-type: none"> Graded for completion and participation |

Extra credit will not be given for non-academic purposes

Absent Work Policy

All assignments should be submitted on time. Students will be given the number of class periods equal to the number of lawful class periods absent to turn in completed make up assignments without penalty.

Late Work Policy

All assignments should be submitted on time in order to earn full credit. Any assignment, (*product, process, or practice*) will be allowed to be turned in late for one letter grade deduction from the grade a student earns on the assignment. In order to earn credit for late assignments, students must submit assignments by the end of the day on Wednesday (except for the last week of the quarter) following the designated HAC update. Students are only able to submit assignments that have an established due date within the grading window before the designated HAC update. Assignment that are turned in for late credit will be identified by a footnote in HAC to include a statement about the deduction of a letter grade due to the lateness of the assignment.

| Grading Window | Designated HAC Update | Late Work Due Date |
|---------------------------|-----------------------|---------------------|
| September 8- September 24 | September 24 | September 29 |
| September 27- October 13 | October 13 | October 20 |
| October 14- October 29 | October 29 | November 5 (Friday) |
| November 8- November 19 | November 19 | November 24 |
| November 22- December 10 | December 10 | December 15 |
| December 13- January 13 | January 13 | January 21 (Friday) |
| January 24- February 11 | February 11 | February 16 |
| February 14- February 25 | February 25 | March 2 |
| February 28- March 11 | March 11 | March 16 |
| March 14- March 25 | March 25 | March 31 (Thursday) |
| April 1- April 22 | April 22 | April 27 |
| April 25- May 6 | May 6 | May 11 |
| May 11- May 20 | May 20 | May 25 |

Academic Integrity

Academic integrity is taking responsibility for the quality and completion of one's own work. Academic dishonesty is taking someone else's work and claiming it as one's own. Students at Bel Air High School are responsible for knowing what is considered to be Academic Dishonesty and the subsequent consequences. More information can be found in the BAHS Student Planner.

Classroom Rules and Procedures

No eating in class
Be on time
Be respectful of peers
Be safe at all times

Cell Phone Policy

- Students will place their cellphones in a teacher designated area as they enter each classroom. Teachers will review with students the specific location for each room. The phones will remain in the teacher designated area unless teachers explicitly tell students to take out the phones for instructional use.
- Cellphones will remain in the teacher designated area during bathroom visits, assemblies and trips to the nurse/counseling office/main office.
- Cellphones will be retrieved from the teacher designated area at the end of class at the direction of the teacher.
- School-appropriate cellphone use is permitted during class changes and lunch. Students are not permitted to make phone calls during school hours.
- If the cell phone policy is violated, it is a referable offense.

Office hours in room A101

2:00pm-2:20pm

Foundations of Technology

2021-2022 School Year

Parent and Student Contract

Parent: Please sign showing you have read and understand the class policies and procedures on the previous pages.

Print Name: _____

Signature: _____

Cell Contact Number: () _____ - _____

Home Contact Number: () _____ - _____

E~Mail: _____ @ _____

E~Mail: _____ @ _____

Student: I have read and understand the class policies and procedures on the previous pages. I promise to abide by these guidelines and to be diligent in my effort during class.

Print name: _____

Signature: _____

Your E~Mail: _____ @ _____

IT IS THE STUDENTS RESPONSIBILITY TO REQUEST ANY MAKE UP WORK.

If you are overwhelmed or are having trouble, talk to me immediately. It is better to approach me for extra help than to wait until work is late or not to do it at all. I am here to help you any way I can.