

02 Lab Safety and Machine Use

Content Area: **Technology**
Course(s):
Time Period: **Full Year**
Length: **1.5 Weeks**
Status: **Published**

General Overview, Course Description or Course Philosophy

This full year honors course continues to emphasize the application of integrated STEM (Science, Technology, Engineering and Mathematics) principles and the design method to invent solutions to real world problems through robotic applications. Students will identify problems, research, design and fabricate solutions. Problem solving, critical thinking and design skills are taught through a variety of activities. Hands-on themes include structural and robotic systems, as well as system control technology. This course provides all students with valuable skills such as: problem solving, design, creative thinking, systems thinking, team work, documentation, programming and computer applications.

OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS

Rules and procedures help students work safely in the lab and work area. Recognizing and describing potential risks and hazards associated with not following lab/equipment rules is essential for success in the classroom and workplace.

CONTENT AREA STANDARDS

TECH.8.2.12.D.3	Determine and use the appropriate resources (e.g., CNC (Computer Numerical Control) equipment, 3D printers, CAD software) in the design, development and creation of a technological product or system.
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RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion Standards are Required)

CRP.K-12.CRP2	Apply appropriate academic and technical skills.
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STUDENT LEARNING TARGETS

Declarative Knowledge

Students will understand that:

- It is necessary to be certified on all equipment in order to use it safely.
- There are negative health and safety consequences to not following lab safety rules.
- The health and longevity of the lab equipment is dependent on students utilizing them properly.

Procedural Knowledge

Students will be able to:

- Determine the appropriate resources (lab and safety equipment) in the design, development and creation of a technological product or system.
- Use the appropriate resources (lab and safety equipment) in the design, development and creation of a technological product or system.
- apply appropriate academic and technical skills.

EVIDENCE OF LEARNING

Formative Assessments

Safety quizzes: General lab safety, Band saw, Drill press, Hand tools, Eye Safety, Scroll Saw and any other appropriate material processing equipment quizzes.

Observation of hands on activities.

Summative Assessments

Material processing widget

RESOURCES (Instructional, Supplemental, Intervention Materials)

Teacher notes and quizzes available through Google Classroom/Drive.

Material processing project rubric.

INTERDISCIPLINARY CONNECTIONS

Educational Technology: Use of Google resources

ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS

See link to Accommodations & Modifications document in course folder.