

**Spring Grove Area School District
Course Proposal for 2023 – 2024**

Course Name: STEM Design and Fabrication

Course Description: This class explores the essential elements of STEM theory, problem solving, building, and design. Students will apply the design process in real-world situations. Examples may include, but are not limited to, construction, computer science, electronics, robotics, transportation, manufacturing, audio/visual, information technology, etc. This course is a building block of the STEM Department. This course will encourage students, based on their aspirations and interests, to examine their role in a global work force that requires advanced technological training, a post-secondary degree, or other field specific certification(s).

Rationale: Students will rotate through different areas involving the theory, practice, design, and fabrication process. Students will participate in final projects that are student and teacher led based on their interests in a particular field of study. As students gain minimum competency skills in various fields, they will gain a better understanding of where their talents and interests lie. This course is a building block of the STEM Department. This course will encourage students, based on their aspirations and interests, to examine their role in a global work force that requires advanced technological training, a post-secondary degree, or other field specific certification(s).

Credit Value: .5

Meetings Per Cycle: 6

Length: 40 minutes

Weighted Value: 1.0

Grade Level: 9

Core or Elective: Core

Prerequisite: None

Pennsylvania Academic Standards: HS-ETS1-1 - Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
HS-ETS1-2 - Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
HS-ETS1-3 - Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.
HS-ETS1-4 - Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.