

Course Name: Principles of Engineering

Duration: 1 Semester Full Year

Grade Level: 9th 10th 11th 12th (check all that apply)

Are there any prerequisites for the course?

- Algebra 2
- Introduction to Engineering Design or Advance Engineering from SAC

WHAT this course is about:

Through problems that engage and challenge, we explore a broad range of engineering topics, including mechanisms, the strength of structures and materials, and automation, and kinematics. You will develop skills in problem solving, research, and design while learning strategies for design process documentation, collaboration, and presentation.

WHY take this course:

Principles of Engineering is a foundation course of the high school engineering pathway. This survey course exposes students to some of the major concepts that they will encounter in a postsecondary engineering course of study. The course applies and concurrently develops secondary level knowledge and skills in mathematics, science, and technology.

WHAT you'll learn:

- Energy and Power
- Materials and Structures
- Control Systems (Robotics)
- Statistics and Kinematics

WHAT you'll do:

Introduction to mechanisms, energy sources, and alternative energy applications. You will learn engineering through materials properties and statics. You will also learn to control mechanical systems by recognizing computer outputs and gaining an understanding of how to write code to control them. You will also gain an understanding of fluid power, both hydraulic and pneumatic.

WHERE this could take you:

- Mechanical Engineering
- Robotics and Automation Engineering
- Energy and Power Engineering

OPTIONAL Course Outline (“scope and sequence”, sequence chart, etc.)

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