

Engineering CTE Program

Auburn High School is a Project Lead The Way (PLTW) affiliate school. All Engineering courses are taught by PLTW certified instructors and use the PLTW course standards, objectives and learning management system.

Introduction to Engineering Design

Course Code: TBD

1 Credit

Prerequisite: Required 70 average in Algebra I or Automation and Robotics

Course Fee: \$15

This course develops student problem solving skills, with emphasis placed upon the concept of developing a 3-D model or solid rendering of an object. Students focus on the application of visualization processes and tools provided by modern, state-of-the art computer hardware and software. This modern computer-based process complements the traditional hand drawing methods. The course will emphasize the design development process of a product and how a model of that product is produced, analyzed and evaluated, using a computer aided design system. Various design applications will be explored with discussion of possible career opportunities.

Principles of Engineering

Course Code: TBD

1 Credit

Prerequisite: Required 70 average in Geometry or Algebra II w/ Trig

Course Fee: \$15

This introductory course is a broad-based survey course designed to help students understand the field of engineering and engineering technology and its career possibilities. Students will develop engineering problem solving skills that are involved in post-secondary education programs and engineering careers. They will explore various engineering systems and manufacturing processes. They will also learn how engineers address concerns about the social and political consequences of technological change. The main purpose of this course is to experience through theory and hands-on-problem solving activities what engineering is all about and to answer the questions, "Is a career in engineering or engineering technology for me?"

Digital Electronics

Course Code: TBD

1 Credit

Prerequisite: Introduction to Engineering Design and Principles of Engineering

Course Fee: \$15

This course is a study of applied digital logic and is patterned after the first semester course in Digital Electronics taught in two and four-year colleges. Students will study the application of electronic logic circuits and devices and apply Boolean logic to the solution of problems. Such circuits are found in watches, calculators, video games, computers and thousands of other devices. The use of smart circuits is present in virtually all aspects of our lives and its use is increasing rapidly, making digital electronics an important course of study for a student exploring a career in engineering/engineering technology. Using circuit simulation software, students will test and analyze simple and complex digital circuitry. Students will design circuits, using simulation software and breadboarding to construct the design using IC chips and other components.

Aerospace Engineering

Course Code: TBD

1 Credit

Prerequisite: Introduction to Engineering Design and Principles of Engineering

Course Fee: \$15

Students explore the physics of flight and bring what they're learning to life through hands-on projects like designing a glider and creating a program for an autonomous space rover. Using 3-D design software, students will collaborate on engineering design problems related to the aerospace industry and encountered by aerospace engineers.

Introduction to Robotics

Course Code: TBD

1 Credit

TSA membership and Student Application Required

Course Fee: \$15

This one-credit course is designed to provide students with the fundamental knowledge and skills of robotics. Emphasis is placed on fundamentals of electrical current, digital circuits, electronic control systems, and the design and operation of robotic systems. This course requires an accepted application and full participation in the competitive robotics team at Auburn High. Applications can be picked up from Mrs. S. Sharman at AJHS or Mrs. J. Middleton at AHS.