

Courses

(9th & 10th Grade)

Programming for Engineers I

This course is designed for students to understand programming techniques and subsequently be able to learn basic syntax and basic computer programming utilizing real-world applications and freelance gaming techniques through C++ and video game Development through I-Support Software.

Digital Electronics & Robotics

In this course, engineering fundamentals to all branches of engineering is the process of design, a systematic procedure that begins with the formulation of a precise specification of the problem at hand and ends with the specification of a procedure and/or mechanism that meets the requirements outlined in the problem specification utilizing Lego Mind-storm Robotics and curriculum.

Introduction to Engineering Design

This course is designed to introduce students to the engineering design process utilizing 3D Computer Aided Design software Solid Works. This software's emphasis on 3D skills and relevant applications in engineering principles, technology, mathematics, and science is explored through a series of lessons, based exercises and team projects. Interactive process is utilized to develop products across a variety of industries: Process, Power, Civil, Agriculture, Electronics, Aerospace, and Automotive and Transportation.

BEA ACADEMIC GRID

(4-year Sequence)

If Algebra is taken in Middle School

GRADE	MATH	SCIENCE	ELECTIVE
9 TH	<i>Geometry</i>	<i>Biology</i>	<i>Digital Electronics/ Robotics & Computer Applications for Engineers</i> (LEGO ROBOTICS)
10 TH	<i>Algebra II w/ Trigonometry</i>	<i>Chemistry</i>	<i>Introduction to Engineering Design & Programming for Engineers I (C++)</i>
11 TH	<i>Pre-Calculus</i>	<i>Chemistry II or AP-Biology</i>	<i>Fundamentals of Engineering I</i> (VEX ROBOTICS)
12 TH	<i>Calculus</i>	<i>Physics</i>	<i>Fundamentals of Engineering II</i>

Courses

Fundamentals of Engineering I

Fundamentals of Engineering I is a math and science-based engineering and technology elective course that provides students with a firm foundation in the basics of engineering.

This course will not only spark student interest in technical fields but will enable them to think and work like real engineers by utilizing the practical application of scientific and mathematical principals in solving real world and/or simulated problems, as well as communicating technical information, and providing education and training in current emerging technologies using VEX robotic automation

Fundamentals of Engineering II

A course that advances students involvement in the practical application of scientific and mathematical principles of solving real world and/or simulated problems, communicating technical information and providing education and training in current and emerging technologies. Lab-View software will be used to collect data and perform data analysis. Exposure to real world engineering will be granted through multiple field-trips to companies specializing in each discipline of engineering such as: Civil, Electrical, Computer, Mechanical, Aerospace, etc. The student will also master the Lab View computer programming language and will complete design projects, which include class presentations.

