



ACADEMY OF SCIENCE & TECHNOLOGY: ENGINEERING PATHWAY

Overview

The goal of the engineering major at MOT Charter High School is to expose students to the primary engineering disciplines and provide foundational engineering knowledge and skills to prepare them for college and industry success.

Engineering courses at MOT Charter:

Engineering & Design I Introductory course required for all STEM major students as it teaches a problem solving process (the Engineering Design Process) which is then applied in other pathway coursework. Through a project based learning approach, students are introduced to various Engineering fields such as Civil Engineering, Mechanical Engineering, Electrical/Electronic Engineering, Computer/Robotics Engineering, and Alternative Energy.

Engineering & Design II Utilizing numerous projects and simulations, the courses focus much of the content on Engineering Design including units such as, Structural Design, Elements of Design, and Foundations of Engineering Design. Additionally, students complete a 3D Modeling course with an introduction to 3D Printing, and learn the skills and knowledge principles involved with Project Management.

Engineering & Design III An in depth look into various Engineering technologies such as Manufacturing Technologies, Energy and Power Technologies, Construction Technologies, and Transportation Technologies. The course also includes a major project where students conduct research into Ocean Engineering and underwater technologies concluding with teams of students building an unmanned underwater robotic vehicle. Students complete a mini capstone engineering project at the end of the course.

Engineering & Design IV Provides advanced coursework typically required in college level Engineering curricula such as an industry level Computer Aided Design course, a Robotics curriculum with programming, an advanced Mathematical Analysis modeling program, and also complete a major team project that applies all the knowledge and skills learned in the previous 3 years of Engineering. Students have the opportunity to earn college level credits, industry certifications, and technical certificates of completion.

