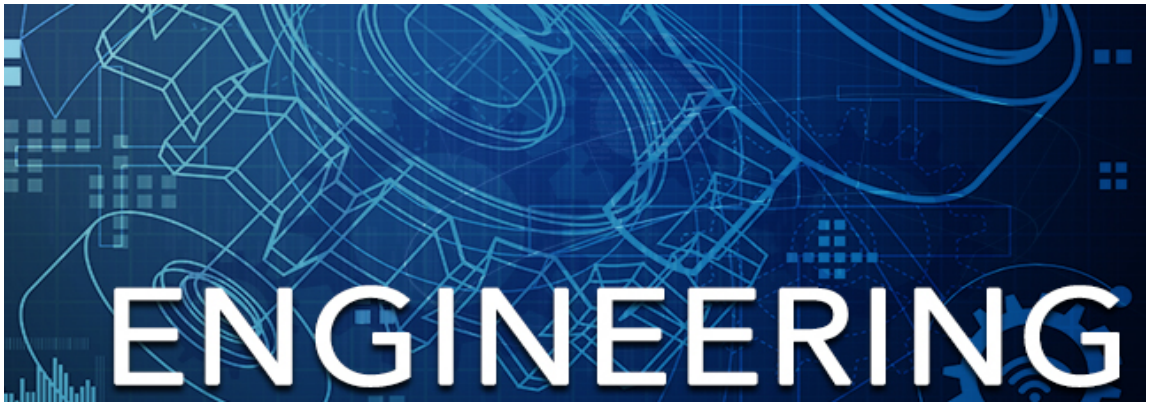

Whether a student is curious to understand more about engineering, has decided to pursue it as a career, or simply want to think critically, work collaboratively and explore how math and science work in his or her everyday life, thePathway to Engineering Program provides a track for success. Students engage in open-ended problem solving, learn and apply the engineering design process, and develop vital teamwork, communication and critical thinking skills. Throughout the courses, students use the same industry-leading technology and software as the world's top companies. The exciting and challenging fields of engineering come alive in this program, which is designed to prepare students for careers or post-secondary study in STEM fields.

We encourage you to explore as many courses as you would like, but if you think you might enjoy a career in engineering, we encourage you to make plans to join us on a path of courses. These pathways will allow you the opportunity to be college and career ready by participating and *achieving certificate status in the EOP after 2 courses* as well as being recognized as a special completer in our department after 4 courses.

To be eligible to be recognized as college and career ready, the following pathway is designed for your area of interest. (Again, choosing 2 courses)

Pathway to Engineering

Engineering I Engineering II Manufacturing Engineering Introduction to 3D Printing	AP Physics

1231 Engineering I Grade 9-12 **(semester long course)**
21st CENTURY SKILLS FOCUS AREA: Teamwork, Critical Thinking, Communication
This course applies the skills, concepts, and principles of engineering. Students explore various technological systems and engineering processes in related career fields. Topics include investigating technological systems, design optimization, and problem solving. Students utilize CAD (computer-aided design) and physical and virtual modeling concepts to construct, test, collect, and report data. Computer design and 3D Printing will be major focuses for the class.

1235 Engineering II Grade 10-12 **(semester long course)**
ALG I Required
ALG II Recommended
21st CENTURY SKILLS FOCUS AREA Critical Thinking, Problem Solving, Collaboration/Team Work, Technical Literacy
A project and research based course that extends the learning experiences where students focus on mechanical, electrical, fluid and thermal systems allowing in depth exploration in selected disciplines of engineering areas such as simple mechanisms, manufacturing, power/energy/transportation, robotics, hydraulics, electricity/electronics, alternative energy, computer-aided design, and problem solving.

1236 Manufacturing Engineering Grade 9-12 **(semester long course)**
21st CENTURY SKILLS FOCUS AREA Critical Thinking, Problem Solving, Collaboration/Team Work, Technical Literacy
Manufactured items are part of everyday life, yet most students have not been introduced to the high-tech, innovative nature of modern manufacturing. This course illuminates the opportunities related to understanding manufacturing. At the same time, it

teaches students about manufacturing processes, product design, robotics, and automation. CNC milling and lathing will be explored as well as CNC lasers and 3D printing among other technologies.

332001 Introduction to 3D Printing Technology Grades 9-12 (Semester Long Course)
An Introduction to additive rapid prototyping manufacturing 9three-dimensional printing), and its applications in conjunction with computer technology, including hardware, software, three- dimensional printing technology, file management, internet, security, and computer intellectual property ethics. Presents basic use of applications, programming, systems and utility software.

2532 PHYSICS Grades 11-12 **(semester long course) (NOT OFFERED in 25-26)**
21st CENTURY SKILLS FOCUS AREA: Critical Thinking, Collaboration & Teamwork, Time Management & Organization
Physics is an elective subject which studies the various aspects of science (mechanics, heat, momentum, electricity). The course is math-intensive consisting of lecture, video, lab experiences, and book work. Students should expect daily in-class work with a moderate amount of outside class assignments. Physics is recommended for students planning careers in engineering and math-related fields.
PREREQUISITES: Algebra I & II MUST be completed prior to enrollment.

2519 AP Physics Grades 11-12 **(year-long course/weighted)**
21st CENTURY SKILLS FOCUS AREA: Critical Thinking, Collaboration & Teamwork, Time Management & Organization
A.P. AP Physics 1 is an algebra-based, introductory college-level physics course. Students cultivate their understanding of Physics through inquiry-based investigations as they explore topics such as Newtonian mechanics (including rotational motion); work, energy, and power; mechanical waves and sound; and introductory, simple circuits.
PREREQUISITES: Algebra I & II MUST be completed prior to enrollment, with a 'B' average or better.