

Parkland High School currently has three engineering pathways for students in the TSTEM Academy. The pathways are:

1. PLTW Engineering

This pathway uses the PLTW National Pre-Engineering curriculum, is recommended for students that want to study engineering in college. This pathway offers certification opportunities in Autodesk Inventor and Revit.

- a. Freshman study Introduction to Engineering Design: students learn about engineering design concepts, technical drawing, and computer-aided design. Students will take a certification test on Inventor at the end of the year.
- b. Sophomore students study Principles of Engineering: a survey course covering many of the topics college engineering students take their Freshman and Sophomore years of college. This course is helpful for students wishing to specialize in technical careers in the military.
- c. Juniors choose between civil engineering and digital electronics courses. Students make their selection during their Sophomore year based on their career interests.
- d. Seniors take Engineering Design and Development: students in this class participate in teams. The team focuses on using their engineering knowledge to design, build and test an innovation or new project.

2. Computer Science

We designed this pathway for students planning on studying computer science in college. This pathway offers certification opportunities in Python.

- a. In the Freshman year, students take Fundamentals of Computer Science. This course will focus on teaching students the Python programming language.
- b. In the Sophomore year, students take Computer Science 1. This course will focus on teaching students the Java programming language.
- c. In the Junior year, students take Computer Science 2. This course will focus on extending students' knowledge of Python and Java. Computer Science students will test for certification in Python.

- d. In the Senior year, students will take the OnRamps Computer Science course: a dual enrollment course offered by UT Austin.

3. Advanced Manufacturing Pathway

We design this pathway for students who like to create and build things and have an interest in applying skills learned in the classroom to actual projects.

- a. In the Freshman year, students take the Principles of Applied Engineering. This class introduces engineering concepts and focuses on mechanical drawing and computer-aided design concepts.
- b. In the Sophomore year, students take Robotics 1. Students learn to design, build, program, and test robots. Robotics is an engaging way to learn building and programming skills.
- c. In the Junior year, students take Engineering Design and Presentation. This course is a complement to the Principles of Applied Engineering studied during the Freshman year.
- d. In the Senior year, students take Robotics 2. This course expands on the designing, building, programming, and testing skills learned during Robotics 1.