

**8340C Introduction to Engineering Design (IED) - PLTW**

Credit: 1

Prerequisite: None

If you can imagine it, you can design and engineer it in the Introduction to Engineering Design class. Students who want to use software and other technology to solve problems through designing and translating the design into a real product will enjoy this hands-on approach to exploring engineering as a career. This course can earn college credit based on Articulation agreements, which are subject to change.

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**PLTW Engineering Specialization Courses**

Credit: 1

Prerequisite: Introduction to Engineering Design

What would it feel like to have the expertise to build a school that could withstand an earthquake, help design the space vehicles that take people to Mars, develop systems to use computers that help humans and robots to efficiently interact, or develop artificial lenses that restore sight to blind people? The Engineering Specialization allows students to apply what they have learned in STEM courses to a more specific area of engineering. \*Campus specific course.

**8331C AeroSpace Engineering LCHS, THS**

Students will explore the physics of flight and bring what they're learning to life through hands-on projects such as designing a glider and creating a program for an autonomous space rover. This course can earn college credit based on Articulation agreements with the Rochester Institute of Technology, which are subject to change.

**8332C Civil Engineering & Architecture THS, LCHS, GRHS**

Students will learn important aspects of building and site design and development, and then they will apply what they know to design a commercial building. This course can earn college credit based on Articulation agreements with the Rochester Institute of Technology, which are subject to change.

**8333C Computer Integrated Manufacturing FHS, CFHS**

Students will discover and explore manufacturing processes, product design, robotics, and automation, and then they will apply what they have learned to design solutions for real-world manufacturing problems. This course can earn college credit based on Articulation

agreements with the Rochester Institute of Technology, which are subject to change.

**8334W Environmental Sustainability GRHS, FHS, CFHS**

In Environmental Sustainability, students investigate and design solutions in response to real-world challenges related to clean and abundant drinking water, food supply, and renewable energy. Applying their knowledge through hands-on activities and simulations, student's research and design potential solutions to these true-to-life challenges.

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**8330C Engineering Science - PLTW**

See Science section for Science credit

Credit: 1

Prerequisite: A PLTW Engineering Specialization course

This survey course of engineering exposes students to major concepts they'll encounter in a post-secondary engineering course of study. Students employ engineering and scientific concepts in the solution of engineering design problems. They develop problem-solving skills and apply their knowledge of research and design to create solutions to various challenges, documenting their work and communicating solutions to peers and members of the professional engineering community. This course can earn college credit based on Articulation agreements with the Rochester Institute of Technology, which are subject to change.

**8320C Digital Electronics (DE) – PLTW**

See Math section for Math credit

Credit: 1

Prerequisite: A PLTW Engineering Specialization course

Digital Electronics is the foundation of all modern electronic devices such as cellular phones, MP3 players, laptop computers, digital cameras and high-definition televisions. The major focus of this course is to expose students to the process of combinational and sequential logic design, teamwork, communication methods, engineering standards and technical documentation. This course can earn college credit based on Articulation agreements with the Rochester Institute of Technology, which are subject to change.

**8326C Engineering Design & Problem Solving: PLTW**

See Science section for Science credit

Credit: 1

Prerequisite: Three PLTW credits, Algebra II, Chemistry &amp; Physics

This engineering research course allows students to work in teams to research, design, and construct a solution to an open-ended engineering problem. Students apply principles developed in previous PLTW courses and must present progress reports, submit a final written report and defend their solutions to reviewers. This course can earn college credit based on Articulation agreements with the Rochester Institute of Technology, which are subject to change.