**8340C Introduction to Engineering Design - 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.

**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.

**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 Rochester Institute of Technology and are subject to

change.

**8320C Digital Electronics – 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 Rochester Institute of Technology and 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 &**

**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 Rochester Institute of Technology and are subject to

change.