

2025-2026 Course Offerings

CTE: STEM - Science, Technology, Engineering and Math

Career and Technical Education (CTE):

All courses listed under CTE count towards fulfilling the one-credit graduation requirement of CTE/Occupational Education. Please be advised, that courses listed in the course catalog are not necessarily offered at each high school, each trimester. See your school counselor for a CTE course offering list at your school. Our CTE courses are organized into one of six Career Pathways, which are aligned to the State's Program Areas.

Equivalency Credits:

CTE courses may also count towards an academic credit and/or graduation requirement. Credit equivalencies are listed in the course description.

Dual Credit/College Credit: Many CTE courses offer free college credits, known as Dual Credit, at local community and technical colleges. Students must earn a C or better and have met 80% of the college course competencies. Earning a C grade does not automatically qualify a student for dual credit. Dual credit opportunities are subject to change based on course offerings and approval at the community and technical colleges. Visit the [Dual Credit](https://pc3dualcredit.org/) page on the PC3 website for the most current information. <https://pc3dualcredit.org/>

CTE Graduation Pathway:

The state's graduation pathway requirements contain a CTE option of taking 2.0 credit (4 trimester courses) from the same pathway.

[Engineering](#) | [Drone Engineering](#)

CTE: Engineering

Design & Modeling (CTM 211)

Grade Level: 9, 10, 11, 12, or instructor's approval

Credit: Occupational/CTE, Fine Arts or Elective .5

This stand-alone trimester class is intended to introduce students to the concepts of design and modeling. Through the use of industry standard software, students will be able to unleash the power of CAD (Computer Aided Design) by creating and modeling unique creations of their own. Students will learn the tools needed to model designs that can then be created by 3D printing, laser engraving, and vinyl sign cutters. Note: For students interested in pursuing Engineering as a career pathway, please refer to the two-trimester course, Introduction to Engineering Design, as the Design & Modeling course is not a prerequisite for the Engineering Pathway. Students are encouraged to be involved in the Career Technical Student Organization within their school: First Robotics Competition

CTE: STEM - Science, Technology, Engineering and Math

Engineering Essentials A & B (CTM 101/102)

Grade Level: 9, 10, 11, 12

Credit: Occupational/CTE, Fine Arts, or Elective 1.0

In Engineering Essentials, students explore the work of engineers and their role in the design and development of solutions to real-world problems. The course introduces students to engineering concepts that are applicable across multiple engineering disciplines and empowers them to build technical skills through the use of a variety of engineering tools, such as geographic information systems (GIS), 3-D solid modeling software, and prototyping equipment. Students learn and apply the engineering design process to develop mechanical, electronic, process, and logistical solutions to relevant problems across a variety of industry sectors, including health care, public service, and product development and manufacturing. Students are encouraged to be involved in the Career Technical Student Organization within their school: First Robotics Competition

Intro to Engineering Design A & B (CTM 260/261)

Grade Level: 9, 10, 11, 12

Credit: Occupational/CTE, Fine Arts, or Elective 1.0

Dual Credit: College Credit may be available; see note at beginning of Career/Technical Education Section

Prerequisite: Successful completion of Algebra is recommended

This is the first class of a 3 year sequence. As PLTW and many college engineering and design programs require, IED is designed primarily as an introductory program to STEM careers at all levels. The major focus of IED is the design process and its application to the real world. Through hands-on projects, students apply engineering standards and document their work. Students use industry standard 3D modeling software to help them design solutions, solve problems, document their work in an engineer's notebook, and communicate solutions to peers and members of the professional community. In addition, students will use state of the art machines and tools (CNC mills, 3D printers, vinyl sign cutters) in the prototyping lab to design and model their creations. Students are encouraged to be involved in the Career Technical Student Organization within their school: First Robotics Competition

Principles of Engineering/Robotics A & B (CTM 263/264)

Grade Level: 10, 11, 12, or instructor's approval

Credit: Occupational/CTE, Lab based science or Elective 1.0

Prerequisite: Intro to Engineering Design or teacher permission. NCAA approval has been requested.

This is the second class of a 3 year engineering sequence. This survey course exposes students to major concepts they'll encounter in a post-secondary engineering course of study. Students will study mechanisms, energy, statics, materials, kinematics, programming, and utilize robotics as the medium to apply skills learned. Students will be challenged to problem-solve, research, and design to create solutions to various challenges, document their work, and communicate solutions. Students are encouraged to be involved in the Career Technical Student Organization within their school: First Robotics Competition

CTE: STEM - Science, Technology, Engineering and Math

Aerospace Engineering A & B (CTM 217/218)

Grade Level: 11, 12, or instructor's approval

Credit: Occupational/CTE or Elective 1.0 - NCAA approved

Prerequisite: Successful Completion of Algebra 1. Intro to Engineering Design is recommended.

This is the third class in a 3 year sequence at SLHS. Aerospace Engineering (AE) is one of PLTW's specialized courses. AE explores the evolution of flight, navigation and control, flight fundamentals, aerospace materials, propulsion, space travel, and orbital mechanics. In addition, this course presents alternative applications for aerospace engineering concepts. Students analyze, design, and build aerospace systems. They apply knowledge gained throughout the course in a final presentation about the future of the industry and their professional goals. This course is designed for 10th, 11th or 12th grade students. Students are encouraged to be involved in the Career Technical Student Organization within their school: First Robotics Competition

CTE: Engineering

Drone Design & Engineering (CTM 229)

Grade Level: 11, 12, or instructor's approval

Credit: Occupational/CTE or Elective .5

*Dual Credit: College Credit **may** be available; see note at beginning of Career/Technical Education Section*

Prerequisite: Successful Completion of Algebra 1 or Drone Piloting

The use of drones in industry is emerging daily. New uses and FAA approval is frequently in our news. This course will provide students with experiences working in the emerging field of Unmanned Aircraft Aerial Systems (UAS), more commonly known as drones. Students will explore the engineering concepts presently utilized in this expanding field and will develop knowledge and understanding of basics of UAS design, Computer Aided Design (CAD), Computer Aided Manufacturing (CAM), Additive Manufacturing (AM), basic control system design and implementation, circuit assembly, and aircraft flight testing. Students are encouraged to be involved in the Career Technical Student Organization within their school: First Robotics Competition

Drone Piloting (UAS) (CTM 317)

Grade Level: 11, 12, or instructor's approval

Credit: Occupational/CTE or Elective .5

*Dual Credit: College Credit **may** be available; see note at beginning of Career/Technical Education Section*

Prerequisite: Students should be 16 or turning 16 during the trimester

The use of drones in industry is emerging daily. New uses and FAA approval is frequently in our news. This course will provide students experiences in engineering and design concepts of unmanned aircraft systems or more commonly known as drones (Drones). Students will learn the technology, legal and safety aspects as well as experience hands-on construction configuration and training in flight of unmanned aircraft. Students will gain knowledge of careers in this field. Students work towards taking the FAA Part 107 license upon completion. Students must be 16 to earn the FAA Part 107 license. Students are encouraged to be involved in the Career Technical Student Organization within their school: First Robotics Competition.