

Program of Studies Highlights 2018-2019



Applied Engineering and Technology Education

Building a Strong Foundation for College and Career

Each PLTW Engineering course engages students in interdisciplinary activities like working with a client to design a home, programming electronic devices or robotic arms, or exploring algae as a biofuel source. These activities not only build knowledge and skills in engineering, but also empower students to develop essential skills such as problem solving, critical and creative thinking, communication, collaboration, and perseverance.

Introduction to Engineering Design

Principles of Engineering

Aerospace Engineering

Civil Engineering and Architecture

Computer Integrated Manufacturing

Computer Science Principles

Digital Electronics

Environmental Sustainability

Engineering Design and Development

Introduction to Engineering Design

Students dig deep into the engineering design process, applying math, science, and engineering standards to hands-on projects. They work both individually and in teams to design solutions to a variety of problems using 3-D modeling software, and use an engineering notebook to document their work.



Students Learn, Apply Engineering Skills by Designing and Manufacturing Alpine Skis

[Read More](#)

Bringing Solutions to Real-World Problems to Life

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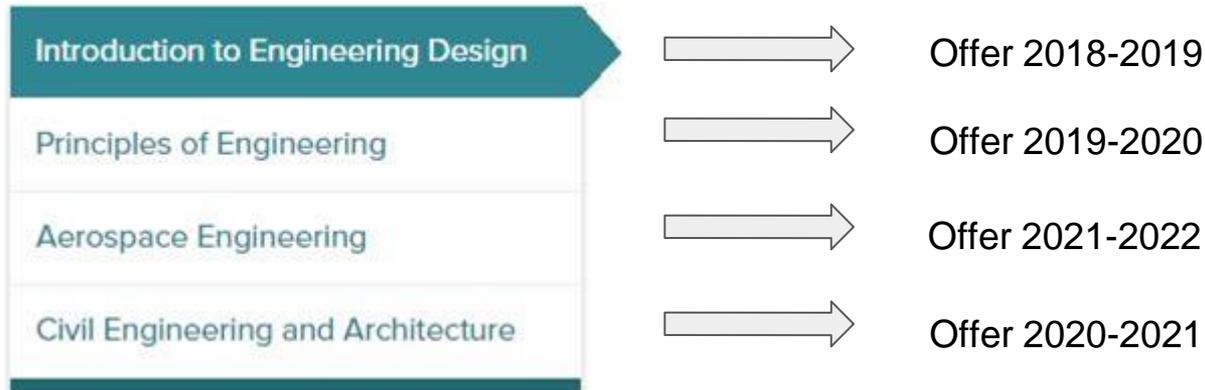


PLTW: Intro to Engineering & Design *(Honors & Academic)* (18 week course)

Will replace the current course:

Fundamentals of Design & Engineering (18 week course)

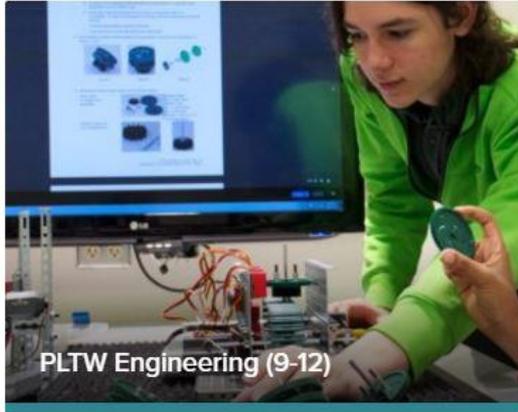
Long-Term PLTW & PHS Course Offering



PLTW Costs

<p>Registration as a PLTW School (Annually)</p> <p>Includes:</p> <ul style="list-style-type: none">● Curriculum for All PLTW Courses● Software for Curriculum● AP Test/EOY Exam● IT Support for myPLTW online	<p>\$ 3000</p>
<p>PLTW Teacher Certification:</p> <p>Professional Development (One Time Fee)</p>	<p>\$2400</p>

College Transcript Credit



AP + PLTW: Partnering to Create More Opportunities for Students

Level	Engineering
College – AP courses	AP Biology AP Calculus AB AP Calculus BC AP Chemistry AP Computer Science Principles AP Environmental Science AP Physics 1: Algebra-Based AP Physics 2: Algebra-Based AP Physics C: Electricity and Magnetism AP Physics C: Mechanics AP Statistics
Career – PLTW courses	Introduction to Engineering Design* ²⁰¹⁸⁻¹⁹ Principles of Engineering Aerospace Engineering Civil Engineering Architecture Computer Integrated Manufacturing Digital Electronics Environmental Sustainability

Students who take **3 classes** from this list while in High School will earn a college transcript credit while in high school. *(2 AP courses + 1 PLTW) or (2 PLTW courses + 1 AP)*

PLTW BENEFITS

- Alignment with Common Core State Standards for Mathematics and English Language Arts and Next Generation Science Standards.
- PLTW + AP = College Credit for PHS Students
- Nationally Developed Curriculum & PD for Teachers
- Includes all software and support necessary for curriculum



PLTW High Schools in PA

ART

Stained Glass Techniques 2

Prerequisite: Stained Glass Techniques 1

9 weeks 0.5 credit

Stained Glass Techniques 2 is a continuation of Stained Glass Techniques 1. Students will develop advanced design and stained glass skills. Students may be introduced to glass etching, sand blasted and warm glass techniques such as fusing, slumping and painting. Students may be required to purchase supplies in addition to the \$40.00 lab fee.

Grades 11, 12

Advanced Placement Art History

18 weeks 1.0 credit

This is an advanced, college level course which explores such topics as the nature of art, its uses, its meanings, art making, and responses to art. Through investigation of diverse artistic traditions from antiquity through modern day. The course fosters in-depth understanding of the history of art from a global perspective. AP Art History is designed to be the equivalent of a two-semester introductory college or university art history survey course. The course will prepare the student to take the advanced placement examination and earn college credit.

Students who have been successful in humanities courses such as history and literature or in studio art courses are especially encouraged to enroll since those experiences will likely support and enrich the context of the art history course.

Note: A summer assignment is assigned at the end of the prior school year and is expected to be completed by the first day of class. It is the student's responsibility to listen for announcements about this assignment and to secure the necessary materials before the end of the prior school year.

Grade 12

Advanced Placement Art History

Textbook Cost \$242 per book: Class set \$7,241.10

Supplementary Text: \$13.50 per text: Class set \$450.00

Teacher Training Cost: estimated \$1500.00

Teacher Materials:

English

English 11 Year-Long

36 weeks 2.0 credits

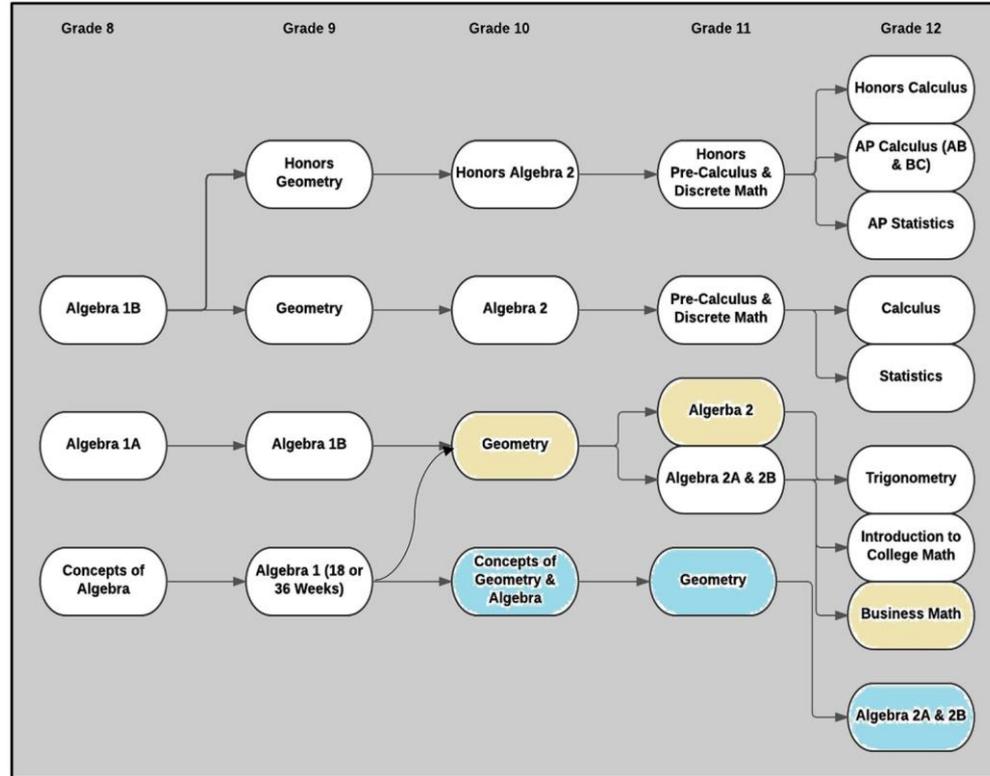
This year-long course focuses on the study of a range of works from classic to modern pieces. Students will have the opportunity to continue the development of skills related to literary analysis and nonfiction analysis. Emphasis will be placed on skills necessary to produce well-considered essays, particularly elements of style and the choices available to good writers. Additionally, students will be expected to hone their skill in oral rhetoric. An added component to this course will involve a focus on individualized reading via Scholastic's *Read 180*. This program directly addresses individual needs through adaptive instructional software, high interest fiction and nonfiction pieces, and direct instruction in reading skills.

2018-2019 Staffing Implications may include certified special education teacher. (possible .5 English teacher, .5 Special Ed teacher)

Grade 11

Mathematics

Mathematics Course Progression



Concepts of Algebra and Geometry

18 weeks 1.0 credit

In this course, students learn basic concepts of geometry as topics relate to Algebra. Topics include properties of Algebra, expressions and equations, radicals, and tools of geometry. Emphasis is placed on the relationship between Algebra and Geometry.

Upon completion of this course, students who were not proficient on the PA Algebra 1 Keystone exam will be required to retake the exam.

Grades 10, 11, 12

Physical Education and Health

Exercise Physiology with Lab

New Course - *Counts as PE or general elective*

9 weeks .25 credit

Students will demonstrate the ability to use scientific principles to design and participate in a regular, moderate to vigorous physical activity program that contributes to personal health and enhances cognitive and physical performance in a variety of academic, recreational, and life tasks. Students will: investigate the benefits of physical activity; analyze the effects of physical activity on the body systems, the relationship between nutrition and physical activity, and the components necessary to design a fitness plan. This course is recommended for students interested in pursuing careers in kinesiology, health sciences, physical therapy, sports medicine, athletic training, personal training, nutrition, etc.

Grades 11, 12

JROTC

Cultural Studies/Leadership Education 3

Cultural Studies: An Introduction to Global Awareness: This is a customized course about the world's cultures. It introduces students to the world's cultures through the study of world affairs, regional studies, and cultural awareness. The course delves into history, geography, religions, languages, culture, political systems, economics, social issues, environmental concerns, and human rights. It looks at major events and significant figures that have shaped each region. Throughout the course, there are readings, video segments, hands-on activities, other optional activities, technology enrichment, and assessments to guide in the reinforcement of the materials.

Leadership Education 300: Life Skills and Career Opportunities: This course provides an essential component of leadership education for today's high school students. It is designed to prepare students for life after high school in the high-tech, globally oriented, and diverse workplace of the 21st century. Students will learn how to become a more confident financial planner and to save, invest, and spend money wisely, as well as how to avoid the credit trap. They will learn about real-life issues such as understanding contracts, leases, warranties, legal notices, personal bills, practical and money-saving strategies for grocery shopping, apartment selection, and life with roommates. The Holland Interest Inventory and other self-assessments will help them to reveal their attitudes, aptitudes, and personal skills. This self-understanding will allow them to explore career paths and understand requirements that they will need to be successful at work and in life.

Changes for Future Consideration

Social Studies: Changed Courses

AP Modern European History

change from 18 wks./1 credit to **36 wks./2 credits**

AP United States History

change from 18 wks./1 credit to **36 wks./2 credits**

Health and Phys Ed: New Courses:

Senior Seminar

12th grade, 9 wks./ .25 cr

Sports Leadership

11th and 12th grades, 9 wks./ .25 cr

Mindful of Your Health

11th and 12th grades, 9 wks./ .25 cr