Ninth Grade Courses Offered

Honors Principles of Engineering

Recommended for any of these reasons:
Students taking Geometry
Enjoys math/science/programming
Honors class/basic tech credit
Best option for students interested in a STEM field
Highly recommended by students enrolled/have enrolled

Practical Programming & Engineering Design Concepts

Recommended for any of these reasons:
Students taking Algebra
Meets basic tech credit

Pathway Offerings

PROJECT LEAD THE WAY (PLTW)

Grade	Course
9	H PRINCIPLES OF ENGINEERING (POE)
10	H ENGINEERING DESIGN & DEVELOPMENT 1 (IED)
11	H DIGITAL ELECTRONICS (DE)
12	H ENGINEERING DESIGN & DEVELOPMENT 2 (EDD)

COMPUTER SCIENCE

Grade	Course
9	H PRINCIPLES OF ENGINEERING (POE) or PRACTICAL PROGRAMMING /ENGINEERING DESIGN CONCEPTS
10	AP COMPUTER SCIENCE PRINCIPLES
11	AP COMPUTER SCIENCE A
12	AACC

INTERACTIVE MEDIA PRODUCTION (IMP)

Grade	Course
9	H PRINCIPLES OF ENGINEERING (POE) or PRACTICAL PROGRAMMING /ENGINEERING DESIGN CONCEPTS
	H INTERACTIVE MEDIA PRODUCTION 1
	H INTERACTIVE MEDIA PRODUCTION 2
	H INTERACTIVE MEDIA PRODUCTION 3

If you have any questions, please do not hesitate to email Mr. Bernstein at sbernstein@aacps.org

Ninth Grade
CTE FAQ

? My child is interested in Science and Math, but they are taking a lot of other Honors courses. Should they take Honors Principles of Engineering or Practical Programming/Engineering Design Concepts?

They are recommended to take Honors Principles of Engineering.

? My child is playing sports, in the band, and/or will have other extracurricular commitments, should they take Honors Principles of Engineering or Practical Programming/Engineering Design Concepts?

There are 4.5 hours built into the school day, each week for students to work with peers on homework, study, and meet with teachers for additional help. If they are interested in Principles of Engineering and/or are generally Honors level students, they are recommended to take Honors Principles of Engineering. In all high school-level courses, students are encouraged in all classes, to create peer study groups to help with material, outside of school.

? My child is not sure if they are interested in engineering or computer science, what should they take?

Honors Principles of Engineering has an entire unit called Control Systems, where students will build and program systems using a language called VexCode Pro which is based on traditional C++. They will not only learn about the basics of programming structure and logic but will be able to apply it to hardware. If they enjoy that unit, then we would recommend they take Intro to Robotics Engineering (0.5 credits) in 10th grade and/or AP Computer Science Principles in 10th, 11th. and/or 12th grade.

? What is the difference between the Practial Programming/Engineering Design Concepts classes and Honors Principles of Engineering?

Honors Principles of Engineering (POE) is the first of a series of courses offered at SPHS as part of the Project Lead the Way Pre-Engineering Pathway. The subsequent courses are NOT REQUIRED. Honors POE covers a breadth of topics related to engineering, and although rigorous, is quite engaging. Honors POE, will fulfill their state-mandated technology education credit by the end of their freshman year because it is a full credit. Practical Programming & Engineering Design Concepts are semester-long classes, and the student would enroll in both. These two classes are not Honors.
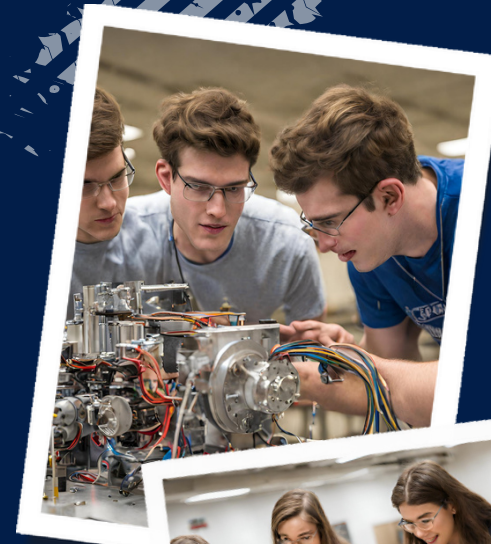
HONORS PRINCIPLES OF ENGINEERING
Student Profile

- Students possibly interested in science, technology, engineering, art, and math career paths:
- Students who did well in math (Algebra 1, STEM 8, or ABOVE)
- Students who have a natural curiosity toward discovering how things work
- Students who are otherwise enrolled in Honors level courses.

90% Agreed or Strongly Agreed: with this statement: "Overall I would say POE has made me a much better student than if I did not take it."

with this statement: "Overall, I think that my teachers at SPHS for POE, have given me several opportunities to be successful in the course, and think that they did a good job this year. **93% Agreed or Strongly Agreed**

84% of the students: enrolled in the second course: Honors Intro Engineering Design (Autodesk).

Graduate Testimonials

Kate Bickel (SPHS '19)

Milwaukee School of Engineering - Mechanical Engineering
"I just wanted to reach out and say thanks again to you and the other PLTW teachers at SPHS for getting me into engineering. I started an internship with Northrop Grumman last summer and they asked me to keep working during the school year. I just got out of a meeting with my manager and we were talking about classes and he mentioned how a big reason I got hired was because I was able to talk about the projects I did in high school and how it was more than some college students had even done. Freshman year of high school I never would have thought that I could make it this far or that anything I did in high school would matter to anyone. I know your classes are a big reason I'm where I'm at so I just wanted to thank you again for the positive impact and let you know how much it meant to me."

Julianna Ricci (SPHS '14)

Stevens Institute of Technology - Biomedical Engineering (BS);Mechanical Engineering (MS)
"PLTW introduced me to engineering when I thought I would be a Chiropractor for a long time. Due to my background from PLTW, the college intro "weed out" classes seemed like a breeze. I knew I wanted to be an engineer the second that I learned about the PLTW program and from then on, I told my parents I wanted to be an engineer and that really helped narrow my college choices. After completing the PLTW program, I knew anything was possible and went on to pursue a career at Northrop Grumman (way outside my field of study)."

Jake Wachs (SPHS '16)

University of Alabama - Computer Science
"PLTW's approach to "learning how to learn" served as a major leg up as I entered college. I can't count how many of my friends "never had to study in high school" and immediately dropped their pre-med or engineering majors for business."