

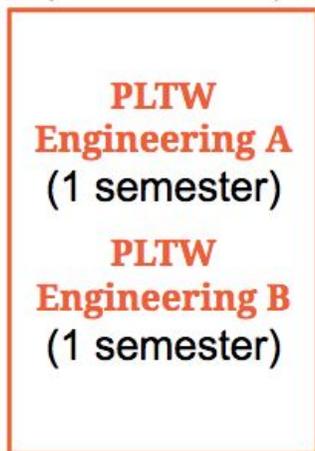
Program Overview: The Erie Academy of Engineering and Aerospace offers a four year trajectory beginning with PLTW Engineering A. Students can take one course or an entire four-year sequence; students are not committed to the pursuing the Engineering Diploma by trying out an engineering class. Students elect in their 2nd semester to take either PLTW Engineering B, or else transition to an aviation elective toward a career track in aeronautics. AP Computer Science and/or Aerospace Engineering are electives in the academic track toward the Engineering Diploma. We recommend students choose the gray or light orange pathway during sophomore and junior year to specialize in either computational thinking or aerospace, based on individual interest. During senior year students reunite in Senior Design, and the variety in background and specialized skill set will prove useful to collaborative teams. Students also practice and refine their collaboration and public speaking skills in an ongoing manner throughout the course sequence. We include many hands-on activities, field trips and guest speakers to help students connect academics to the workforce and gain insight into what professional engineering careers look like.

NO APPLICATION REQUIRED

Engineering Diploma Pathway* (2018-19)

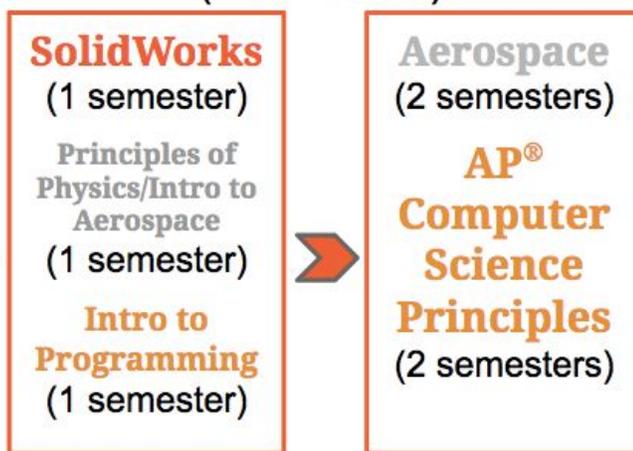
FOUNDATION

(2 semesters)



SPECIALIZATION

(4 semesters)



CAPSTONE

(2 semesters)



*This pathway assumes student begins engineering coursework in 9th grade.

CS120A & 120B PLTW Engineering A and B (this is a year long class) Grade 9-12 2 semesters/1.0 credit
 Practical Art Elective Prerequisite or concurrent: Algebra 1
 Estimated homework: approximately 30 minutes per class session.

This course propels students' learning in the fundamentals of the engineering design process, visualization in 3D, drafting techniques by hand and with computer-aided design (CAD) program AutoDesk Inventor, reverse engineering, and designing solutions to real-world problems by using the design process in collaborative teams. Students gain experience using Excel for collecting, analyzing and presenting data. Students also practice and refine their collaboration and public speaking skills.

Principles of Physics (1 semester class) Grade 10 1 semester/.5 Science Credit
Prerequisite: Algebra 1 Estimated homework: approximately 30 minutes per class session.

Physics is a laboratory science course designed for students who plan to pursue either non-science or science-related careers. The course is also designed for students planning to enter military or civilian technical schools. The course covers mechanics, heat, sound, light, electricity, nuclear energy, and relativity, with a focus on pre-aerospace topics. Laboratory activities will be performed with each topic to reinforce the theory of physics. The emphasis in this course will be on learning concepts rather than on mathematical analysis of data.

Aeronautics Pathway

Erie H. S., Innovation Center & Aims Community College



*These are currently in development with Aims Community College and approval from SVVSD.

CS120A PLTW Engineering A

Grade 9-12 2 semesters/1.0 credit

Practical Art Elective

Prerequisite or concurrent: Algebra 1

Estimated homework: approximately 30 minutes per class session.

This course propels students' learning in the fundamentals of the engineering design process, visualization in 3D, drafting techniques by hand and with computer-aided design (CAD) program AutoDesk Inventor, reverse engineering, and designing solutions to real-world problems by using the design process in collaborative teams. Students gain experience using Excel for collecting, analyzing and presenting data. Students also practice and refine their collaboration and public speaking skills.

PS240 AIMS AVT 107 Aviation Discovery (Spring 2019)

Grade 10-12 1 semester/.5 credit

Practical Art Elective

Prerequisite: CS120A or CTE84110

Estimated homework: Less than one hour per week.

This course will be offered at Erie High School and carries Aims Community College equivalency

ATV 107 and explores from the beginnings of aviation to aviation in the future. Included in this course will be a look at history of airships, aviation pioneers, Federal Aviation Administration, Air Traffic Control, aviation airspace, aviation weather, future aviation and careers in aviation.

CTE83150 UAS Flight Concepts and Training (1 semester class, Fall 2018) Grade 10-12 1 semester/.5 credit

Prerequisite: CS122

Estimated homework: Less than one hour per week.

This course will be offered at the SVVSD Innovation Center in south Longmont.

Introduces and develops flight control and piloting techniques for common UAS platforms. Students will learn and demonstrate maneuvers, procedures, and best practices for safe UAS operation on fixed wing and rotary wing unmanned aircraft systems. Develops the skills and knowledge required to be a pilot of a UAS in the National Airspace System. Students who are new to aviation will develop functional knowledge in the areas of pilot-in-command responsibilities, aerodynamic principles, aviation meteorology, and the flight environment.

CTE83155 UAV Engineering and Design (1 semester class, Spring 2019) Grade 10-12 1 semester/.5 credit

Prerequisite: CTE83150

Estimated homework: Less than one hour per week.

This course will be offered at the SVVSD Innovation Center in south Longmont and carries Aims Community College equivalency: ATV 155 & 156. Utilizing the design cycle and fabrication laboratory equipment, student will have the opportunity to engineer and design UAV (unmanned aerial vehicle) recreational and commercial fixed wing and multirotor aircraft.