

Hillsboro High School

Academy of IB Diploma Programme

Advanced STEM Applications Pathway



Mission:

We will provide our community with accessible college and career pathways where academic rigor and international-mindedness develop students who aspire to make a positive impact on the world.

The Advanced STEM Applications is a three year engaging and interactive pathway sponsored in-part by the Amazon Future Engineers program. The pathway builds fundamental understandings, curiosity, and skills in the high-demand fields of STEM (science, technology, engineering, and mathematics).

STEM is taught through the lens of the International Baccalaureate and students are required to take IB Personal and Professional Skills with the expectation of enrolling in the IB Career-related Programme (IBCP). Fine arts classes are encouraged to further spark students' imagination, design thinking, and contribute to their multidisciplinary growth in STEM.

Students take Industry Certification exams and receive four additional grade points. Upon completion of this pathway, students will be prepared to pursue advanced study in the STEM field of their choice at postsecondary institutions and seek careers with industry leaders.

Advanced STEM Applications I

- Foundational, cross-disciplinary overview of STEM
- Develop skills to identify, explain, and implement scientific inquiry and engineering design
- Practice conducting research, developing meaningful questions, investigations and solutions, evaluating, modeling, and analyzing data, and effectively communicating solutions and scientific explanations to others

Advanced STEM Applications II

Students also take IB Personal and Professional Skills I

- A project-based experience for students to further Explore, develop dynamic STEM career skills in course-long project selected by instructor with student input
- In collaboration with STEM and Robotics Club, students integrate coding language skills
- Project scope within traditional science and scientific



inquiry reflecting interests of class as whole,
to benefit of the defined community

- Proficient students will complete course with a thorough understanding of how scientists research problems and methodically apply STEM knowledge and skills.
- Students will be able to present and defend a scientific explanation and/or design solutions to STEM scenarios

Advanced STEM Applications III

Students also take IB Personal and Professional Skills II

- An applied course where STEM professional trainees with collaboratively in groups to solve problems and answer scientific questions from real world, local contexts.
- Project based learning to hone and practice industry preparedness skills of project management, team communication and effective criticism, leadership, sustainability, decision making, and working within deadlines and constraints
- Projects should be developed to extent of exposition and competition within state STEM expos and will prepare students for industry connections and internships
- Provides third science credit

Industry Certifications (students receive 4 extra grading points)

Microsoft Suite of Assessments

OSHA 10

Autodesk Inventor

International Baccalaureate (IB) Offerings

Students are enrolled in the International Baccalaureate Career-related Programme (IBCP) their junior and senior year

Elective Courses

AP Computer Science Principles

IB Biology SL/HL

IB Environmental Systems and Societies SL

IB Sports, Exercise, and Health Science SL

IB Math Applications SL/HL

IB Business and Management SL/HL

IB Theatre SL/HL

IB Visual Arts SL/HL

Dual Credit STEM II, III

Statistics

Computer Applications

Digital Art and Design

Journalism / Yearbook

Student Organization/Club

First Tech Challenge (Robotics/Computer Science Club)

STEM BUSINESS PARTNERS:

