Career/ Tech Ed Department

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Photo Courtesy of Project Lead the Way

Project Lead the Way Program link:

https://www.montgomeryschoolsmd.org/career-readiness/plans/engineering.aspx

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More info at:

https://www.ibo.org/

International Baccalaureate Career Related Pathway (IBCP)

Photo Courtesy of the International Baccalaureate

Project Lead the Way

Photo Courtesy of the International Baccalaureate

What Does the IBCP Enable Students To Do?

The CP enables students to:

- follow their chosen education and career pathways in life
- combine academic subjects with their personal and professional interests and skills
- engage in learning that makes a positive difference to their community
- think critically and creatively
- communicate clearly and effectively in a variety of situations
- work independently and in collaboration with others
- consider new perspectives and other points of view
- develop greater self-confidence and self-awareness
- demonstrate high levels of resilience and flexibility
- be internationally-minded and globally aware
- apply their knowledge to real-world scenarios and situations.

*According to IBO.org

Core Components of the IBCP

• Personal and Professional Skills
The goal of Personal and Professional Skills in the IB program is to help students develop better learning skills. These skills fall under categories of communication, social, self-management, research, and thinking.

• Community and Service
Students work with members of the community to satisfy local/global needs. This section of the core emphasizes the need to serve as contribution to academic value and career knowledge. Other characteristics that are developed through the Community and Service component include civic responsibility and social aptitude.

• Language Development
Language Development targets the oral, visual, and written abilities of a student. To develop their language skills, students participate in a monitored self-directed study. IBCP students are required to keep track of their progress in a language portfolio

• The Reflective Project
An in-depth investigation focused on an ethical dilemma within the career study that combines knowledge gained from IBDP courses, sections of the CP core and other career-related work.
- The Reflective Project must contain:
•Awareness of ethical consequences on the community
•An explanation showing knowledge and understanding of the issue chosen
•Research and evaluation of evidence and differing viewpoints
•Valid citations and bibliography
•A word limit of 3,000 words

The PLTW Pathway

Students in the IBCP Project Lead the Way Programme must:
♦Take at least two IB classes (**one must be over the course of two years**)
♦Complete a career pathway program
♦Complete the core components

PLTW Career Pathway Program:

INTRODUCTION TO ENGINEERING DESIGN A/B Corequisite: Algebra 1 or higher **5152/5153** TE CM 0.5 credit
Satisfies Technology Education Graduation Requirement.
May be taken in 8th grade at select middle schools.
This introductory course develops students' problem-solving skills, with emphasis on visualization and communication skills, using a computer and a 3-D solid modeling software. This course emphasizes the development of a design using computer software to produce, analyze, and evaluate models of projects and solutions. Students will study the design concepts of form and function and then use state-of-the-art technology to translate conceptual design into reproducible products.
PRINCIPLES OF ENGINEERING A/B Prerequisites: Algebra 1 and Introduction to Engineering Design B Corequisite: Geometry or higher **5187/5188** (AL) 0.5 credit
This is a broad-based survey course to help students understand engineering and engineering technology and identify career possibilities. This course provides an overview of engineering and engineering technology. Students develop problem solving skills by tackling real-world engineering problems. Through theory and practical hands-on experiences, students address the emerging social and political consequences of technological change.
DIGITAL ELECTRONICS A/B Prerequisite: Principles of Engineering and Introduction to Engineering Corequisite: College prep math course **5156/5157** CM (AL) 0.5 credit
This course introduces students to applied digital logic, a key element of careers in engineering and engineering technology. Students explore the smart circuits found in watches, calculators, video games, and computers. Students use industry-standard computer software to test and analyze digital circuitry. They design circuits to solve problems and use appropriate components to build their designs. Students use mathematics and science in solving real-world engineering problems.
CIVIL ENGINEERING AND ARCHITECTURE A/B Prerequisite: Introduction to Engineering, Principles of Engineering Corequisite: College prep math course and Digital Electronics A/B **4255/4256** CM (AL) 0.5 credit This course provides an overview of the fields of civil engineering and architecture, emphasizing the interrelationship and interdependence of both fields. Students use state-of-the-art software to solve real-world problems and communicate solutions. Students learn about the roles of civil engineers and architects, project planning, site planning, building and engineering design, and project documentation and presentation.
ENGINEERING DESIGN AND DEVELOPMENT A/B Prerequisite: All courses in the PLTW sequence of courses leading up to this capstone course Corequisite: College prep math course **5158/5159** CM (AL) 0.5 credit
This is the capstone course for the Project Lead The Way (PLTW) advanced engineering program. At the end of the course, teams present their research papers and defend their projects to a panel of engineers, business leaders, and engineering college educators for a professional review and feedback. This course equips students with the independent study skills that they will need in postsecondary education and careers in engineering and engineering technology.

Certifications and College Credit Options
College Credit - Based on articulation agreements and dual enrollment options in the program, students can obtain TSAs once they have passed course requirements and are eligible to receive college credit.

Descriptions taken from the WMHS 2019 Course Offerings