MSDE Approved CTE Program of Study:

PLTW Advanced Engineering

5 Course Pathway

- Introduction to Engineering Design (IED) – Tech Credit
- Principles of Engineering (POE)
- Digital Electronics (DE)
- Civil Engineering and Architecture (CEA)
- Engineering Design and Development (EDD) – Capstone

Sponsors that we have worked with:

Each teacher has received PLTW Engineering Certifications through University of Maryland Baltimore County.

Gezell_A_Washington@mcpsmd.org

- PLTW Certified in IED

Pamela_A_Tyler@mcpsmd.org

- PLTW Certified in IED, DE, and EDD

Tashia_E_Tillett@mcpsmd.org

- Engineering Coordinator
- PLTW Certified in IED, POE, DE, CEA
- Contact for more ?s & info: 301.388.9944

Paint Branch HS MCPS CTE Program

PLTW Engineering

Project Lead The Way Engineering Courses

provide transformative learning experiences and helps Paint Branch HS create an engaging, rigorous, hands-on classroom environment through project based learning. Many of the 5 courses in this elite MSDE CTE Program of study gives students an opportunity to earn college credit, awards Advanced Level Credit, and puts them into contact with community engineers.

Principal:
Dr. Afie Mirshah-Nayar

Introduction to Engineering Design (IED)

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.

Principles of Engineering (POE)

Through problems that engage and challenge, students explore a broad range of **mechanical engineering** topics, including mechanisms, the strength of structures and materials, **robotics**, and automation. Students develop skills in problem solving, research, **programming in C++** and design while learning strategies for design process documentation, collaboration, and presentation.

Digital Electronics (DE)

From smartphones to appliances, digital circuits are all around us. This course provides a foundation for students who are interested in **electrical engineering**, electronics, or circuit design. Students study topics such as combinational and sequential logic and are exposed to circuit design tools used in industry, including logic gates, **integrated circuits**, and programmable logic devices.

Civil Engineering and Architecture (CEA)

Students learn important aspects of building and site design and development. They apply math, science, and standard engineering practices to design both residential and commercial projects and document their work using **3-D architectural design software, REVIT**.

Engineering Design and Development (EDD) – Capstone Course

The knowledge and skills students acquire throughout PLTW Engineering come together in Engineering Design and Development as they identify an issue and then **research**, design, and test a solution, ultimately presenting their solution to a panel of engineers. Students apply the professional skills they have developed to document a design process to standards, completing Engineering Design and Development ready to take on any **post-secondary program or career**.