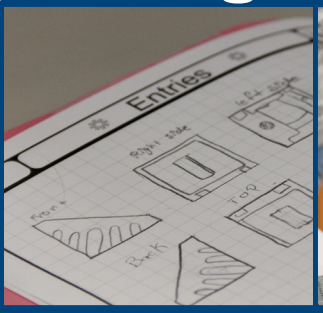
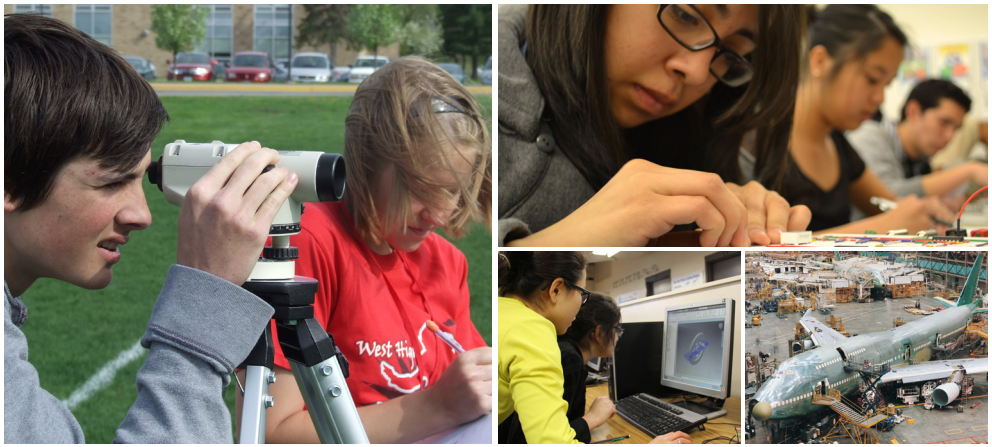
PROJECT LEAD THE WAY

PLTW

Pathway To Engineering





Whether a student is curious to understand more about engineering, has decided to pursue it as a career, or simply wants to **think critically, work collaboratively, and explore** how math and science work in his or her everyday life, **PLTW's Pathway To Engineering (PTE) Program** provides a track for success. Students engage in open-ended problem solving, learn and apply the engineering design process, and develop vital teamwork, communication, and critical-thinking skills. Throughout the courses, **students use the same industry-leading technology and software as the world's top companies**. The exciting and challenging fields of engineering come alive in the PTE program, which is designed to prepare students for careers or post-secondary study in STEM fields.

Schools must offer a **minimum of three courses by the end of the third year of implementation**. These include Introduction to Engineering Design, Principles Of Engineering, and any specialization course or the capstone course.

Foundation Courses

IED — Introduction to Engineering Design

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 3D modeling software and document their work in an engineering notebook.

POE — Principles Of Engineering

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

Specialization Courses

AE — Aerospace Engineering

This course propels students' learning in the fundamentals of atmospheric and space flight. As they explore the physics of flight, students bring the concepts to life by designing an airfoil, propulsion system, and rockets. They learn basic orbital mechanics using industry-standard software and explore robot systems through projects such as remotely operated vehicles.

BioE — New! Biological Engineering

Starting in the 2015-16 school year with Core Training in summer 2015

The growing market for jobs in biological engineering is playing a central role in energy and agricultural sustainability solutions. The BioE course develops students' thinking skills and prepares them for emerging careers through topics like genetic engineering, biofuels, and biomanufacturing.

*BioE will replace Biotechnical Engineering (BE), which PLTW will continue to offer until the end of the 2016-17 school year. BE End-of-Course Assessments will no longer be available after spring 2015.

CEA — Civil Engineering and Architecture

Students learn important aspects of building and site design and development, applying math, science, and standard engineering practices to design both residential and commercial projects. They document designs using 3D architecture design software. Some students have seen these designs come to life through partnerships with local housing organizations.

CIM — Computer Integrated Manufacturing

Manufactured items are part of everyday life, yet most students have not been introduced to the high-tech, innovative nature of modern manufacturing. This course illuminates the opportunities related to understanding manufacturing while teaching students about manufacturing processes, product design, robotics, and automation. Students can earn a virtual manufacturing badge recognized by the National Manufacturing Badge system.

DE — Digital Electronics

From smart phones 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.

Capstone Course

EDD — Engineering Design and Development

The knowledge and skills students acquire on the 'Pathway To Engineering' come together in EDD 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 EDD ready to take on any post-secondary program or career.

Preparing Students for the Global Economy

Project Lead The Way (PLTW) is a 501(c)(3) non-profit organization and the nation's leading provider of in-school STEM curriculum. Through world-class, activity-, project-, and problem-based curriculum, a high-quality teacher professional development model, and an engaged network of educators and corporate partners, PLTW helps students develop the skills needed to succeed in our global economy.

PLTW courses are aligned with Common Core State Standards for Math and English Language Arts, Next Generation Science Standards, and other national and state standards. Courses and units are designed to complement math and science courses and in some instances are used as the core curriculum.

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