

Principles of Engineering (PLTW)

8441 36 weeks

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Course Description

Suggested Grade Level: 10 or 11

Prerequisite: 8439

In this Project Lead the Way (PLTW) course, students explore the engineering profession and the fundamental aspects of engineering problem solving. Students study the historical and current impacts of engineering on society, including ethical implications. Mathematical and scientific concepts will be applied to fundamental engineering topics, including mechanics and electrical-circuit theory.

Curriculum Framework

Project Lead The Way (PLTW) curriculum guides and course competencies are only available to PLTW affiliated schools through agreement with PLTW. To obtain additional information contact: Project Lead The Way 3939 Priority Way South Drive, Suite 400 Indianapolis, IN 46240 Toll Free: 877.335.PLTW (7589) Local: 317.669.0200 <https://www.pltw.org>

Entrepreneurship Infusion Units

Entrepreneurship Infusion Units may be used to help students achieve additional, focused competencies and enhance the validated tasks/competencies related to identifying and starting a new business venture. Because the unit is a complement to certain designated courses and is not mandatory, all tasks/competencies are marked “optional.”

Appendix: Credentials, Course Sequences, and Career Cluster Information

Industry Credentials: Only apply to 36-week courses

- College and Work Readiness Assessment (CWRA+)
- Engineering Technology Examination
- National Career Readiness Certificate Assessment
- Pre-Engineering/Engineering Technology Assessment
- Project Lead the Way End-of-Course Assessments
- Workplace Readiness Skills for the Commonwealth Examination

Concentration sequences: *A combination of this course and those below, equivalent to two 36-week courses, is a concentration sequence. Students wishing to complete a specialization may take additional courses based on their career pathways. A program completer is a student who has met the requirements for a CTE concentration sequence and all other requirements for high school graduation or an approved alternative education program.*

- Engineering Practicum IV (8453/36 weeks)
- Introduction to Engineering Design (PLTW) (8439/36 weeks)

Career Cluster: Science, Technology, Engineering and Mathematics	
Pathway	Occupations
Engineering and Technology	Aerospace Engineer Aerospace Engineering Technician Biomedical Engineer Civil Engineer Civil Engineering Technician Electrical Engineer Electrical Engineering Technician Electro-Mechanical Technician Engineering Technician Materials Engineer Mechanical Engineer Mechanical Engineering Technician Nuclear Engineer Petroleum Engineer Power Systems Engineer
Science and Mathematics	Materials Scientist