



Approved Innovative Course

- *Districts must have local board approval to implement innovative courses*
- *Innovative courses may meet state elective credit only*
- *CTE Innovative courses may not be the final course in a coherent sequence for an endorsement*
- *Course requirements must be met without modification*

Course: Introduction to Engineering Design

PEIMS Code: N1303742

Abbreviation: IED

Grade Level(s): 9-12

Number of Credits: 1.0

Course description:

Students study the engineering design process, applying math, science, and engineering standards to identify and design solutions to a variety of real problems. They work both individually and in collaborative teams to identify, research, test, refine, develop, and communicate design solutions using industry practices, standards, and tools. Utilizing PLTW's activity-project-problem-based teaching and learning strategies students' progress from structured activities to complex projects that require detailed planning, documentation, and communication. The course's rigorous pace requires students to develop an engineering mindset. Students apply industry accepted technical communication skills in visual representation using industry-standard 3D design technology as well as professional and industry specific documentation processes. The development of computational methods in engineering problem solving, including statistical analysis and mathematical modeling are emphasized.

Teacher qualifications:

An assignment for Introduction to Engineering Design is allowed with one of the following certificates as well as successful completion of the Project Lead The Way's Core Training requirements for Introduction to Engineering Design.

PLTW Core Training:

PLTW's Core Training requires approximately 90 hours of instruction led by PLTW approved Master Teachers. Course mastery is demonstrated by the submission and approval of a course portfolio that meet's PLTW's requirements. After successful completion of Core Training, teachers receive access to the National PLTW Engineering Professional Learning Community, course-specific student and classroom instructional resources, and Ongoing Training resources through the PLTW Content Management System.

- Master Science Teacher (Grades 8-12).



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- Mathematics/Physical Science/Engineering: Grades 6-12.
- Mathematics/Physical Science/Engineering: Grades 8-12.
- Physical Science: Grades 6-12.
- Physical Science: Grades 8-12.
- Physics/Mathematics: Grades 7-12.
- Physics/Mathematics: Grades 8-12.
- Science: Grades 7-12.
- Science: Grades 8-12.
- Science, Technology, Engineering, and Mathematics: Grades 6-12.
- Secondary Industrial Arts (Grades 6-12).
- Secondary Industrial Technology (Grades 6-12).
- Secondary Physics (Grades 6-12).
- Secondary Science (Grades 6-12).
- Secondary Science, Composite (Grades 6-12).
- Technology Education: Grades 6-12.
- Master Mathematics Teacher (Grades 8-12).
- Mathematics: Grades 7-12.
- Mathematics: Grades 8-12.
- Secondary Mathematics: Grades 6-12
- Chemistry: Grades 7-12
- Chemistry: Grades 8-12
- Secondary Chemistry (Grades 6-12)
- Secondary Physical Science (Grades 6-12)
- Technology Applications: Grades EC-12
- Technology Applications: Grades 8-12
- Secondary Physical Science (Grades 6-12)
- Trade and Industrial Education: Grades 6-12. This assignment requires appropriate work approval.
- Trade and Industrial Education: Grades 8-12. This assignment requires appropriate work approval.
- Vocational Trades and Industry (Grades 6-12). This assignment requires appropriate work approval.
- Vocational Trades and Industry Pre-Employment Laboratory (Grades 6-12). This assignment requires appropriate work approval.
- Vocational Trades and Industry Co-op (Grades 6-12). This assignment requires appropriate work approval.



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Additional information:

Districts may use these courses only with the approval of Project Lead The Way. All requirements of Project Lead The Way must be met. Please contact Project Lead The Way directly for these requirements:

Project Lead The Way
Solution Center
Toll Free: 877.335.PLTW (7589)
solutioncenter@pltw.org