

## Introduction to Engineering Design First Year Course



### Introduction to Engineering Design (IED)

- ✓ Learn the Engineering Design Process; concept to creation.
- ✓ Create Engineering Drawings with pencil and then with Computer Design Tools.
- ✓ Use AutoDesk Inventor CAD Software to create 3D models of parts and engineering drawings.
- ✓ Create a wooden puzzle cube prototype from engineering drawings.
- ✓ Present product ideas to others using modeling tools and prototypes.

## Engineering Science Second Year Course



### Principles of Engineering (POE)

- ✓ This course explores the wide variety of careers in engineering and technology.
- ✓ Students learn to design mechanical machines, electronic control and structural integrity.
- ✓ Activities include building a car powered by water (hydrogen fuel cell) and solar cells.
- ✓ Through projects, students learn how engineers use math, science, and technology in an engineering problem-solving process, to benefit people.
- ✓ Students learn how math and science is used by engineers to design products.

## Civil Engineering & Architecture Aerospace Engineering Third Year Courses



### Civil Engineering & Architecture (CEA)

- ✓ Students learn important aspects of building and site design and development.
- ✓ Apply math, science, and standard engineering practices to design both residential and commercial projects.
- ✓ Document their work using 3-D architectural design software.

### Aerospace Engineering (AE)

- ✓ Students learn the fundamentals of atmospheric and space flight.
- ✓ Students design airfoil, propulsion system, and rockets.

## Engineering Design & Development Practicum Fourth Year Courses

### Engineering Design & Problem Solving (EDPS)

- ✓ Invent a new product or innovate an existing product.
- ✓ Brainstorm a problem to solve and possible ways to solve it.
- ✓ Do a patent search to research existing solutions.
- ✓ Create design documentation, then build and test a product prototype.

### Practicum In STEM

- ✓ Get experience and licensing as a UAS pilot
- ✓ Learn about the opportunities available to UAS operators

## PLTW Engineering Teachers at Little Elm High School:



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Research shows that Project Lead The Way® (PLTW) students are more likely than their peers to pursue science, technology, engineering and math (STEM) majors in college.

Project Lead The Way® (PLTW) began as a school improvement initiative designed to address the shortage of engineers in the United States. The basic concept was simple—combine a rigorous and relevant curriculum with project- based and problem-based instruction. After over a decade, almost 3,000 schools in the U.S. offer PLTW courses.



## Forging the Innovation Generation

### Little Elm HS PLTW Courses:

- Introduction to Engineering (IED)
- Engineering Science
- Civil Engineering & Architecture (CEA)
- Aerospace Engineering (AE)
- Engineering Design & Problem Solving (EDPS)
- Practicum in STEM

