Science Technology Engineering Math (STEM)
Pre-Engineering/Engineering Technology

Pre-Engineering & Engineering Technology

These project-based classes are part of the Project Lead the Way (PLTW) national course offering for students thinking they may want to pursue a career in engineering or engineering technology. An Engineer typically has a four year college degree while an Engineering Technician is typically a graduate of a two year technical college. Each course is a full year course and follows the rigorous curriculum outlined by PLTW. Some midwest colleges, Univ. of MN system included, now recognize PLTW course participation on their applications.
See www.pltw.org for more information.

INTRODUCTION TO DESIGN for ENGINEERING and ARCHITECTURE (IDEA)

9-10
(1Credit-1 Year) **361**
362

This **design-oriented** class is a foundation course in the national pre-engineering curriculum outlined by Project Lead the Way (PLTW). IDEA follows the design process from concept to selection to drawing to presentation. The curriculum is presented out of the Computer Aided Drafting laboratory and is a recommended course before taking additional Project Lead the Way courses. **In-class student presentations are required and prospective ninth graders should be scoring proficient or above in reading, science, and math.**

College Credit – students must pass a national final exam to qualify for credit in affiliated college engineering programs.

PRINCIPLES of ENGINEERING
10-12
(1Credit-1 Year) **357**
358

Principles of Engineering is a course that helps students understand the field of engineering and engineering technology. Exploring various technology systems and manufacturing processes help students learn how engineers and technicians use math, science, and technology in an engineering problem solving process to benefit people. This course also addresses concerns about social and political consequences of technological change. Success in Principles of Engineering requires the ability to use (or learn) algebra and basic trigonometry.

College Credit – students must pass a national final exam to qualify for credit in affiliated college engineering programs.

Science Technology Engineering Math (STEM)
Pre-Engineering/Engineering Technology

DIGITAL ELECTRONICS
10-12
(1Credit-1 Year) **363**
364

Digital Electronics is a course in applied logic that encompasses the application of electronic circuits and devices. Computer simulation software is used to design and test digital circuitry prior to the actual construction of circuits and devices.

Success in Digital Electronics requires the ability to use Algebra.

College Credit – students must pass a national final exam to qualify for credit in affiliated college engineering programs.

CIVIL ENGINEERING and ARCHITECTURE
10-12
(1Credit-1 Year) **365**
366

Civil Engineering and Architecture provides an overview of the fields of Civil Engineering and Architecture, while emphasizing the interrelationship and dependence of both fields on each other. Students use state of the art software to solve real world problems and communicate solutions to hands-on projects and activities. This course covers topics such as:

- The Roles of Civil Engineers and Architects
- Project Planning
- Site Planning
- Building Design
- Project Documentation and Presentation

College Credit – students must pass a national final exam to qualify for credit in affiliated college engineering programs.
