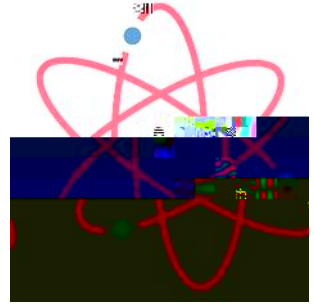


# Aiken High School

## Project Lead The Way (PLTW) Engineering Pathway



### Introduction to Engineering Design (IED) (Honors)

*Students beginning the PLTW Engineering Pathway*

*\* Typically 9<sup>th</sup> graders*

### Principles Of Engineering (POE) (Honors)

*2<sup>nd</sup> course in the PLTW Engineering  
Pathway*

*\* Typically 10<sup>th</sup> graders*

### Civil Engineering and Architecture (CEA) (Honors)

*3<sup>rd</sup> course in the PLTW Engineering  
Pathway*

*\* Typically 11<sup>th</sup> graders*

*\* Could be taken before POE if the  
student is an 11<sup>th</sup> or 12<sup>th</sup> grader*

### Engineering Design and Development (EDD) (Honors)

*Final PLTW Engineering Pathway course (capstone course)*

# PLTW Course Descriptions

## **Introduction to Engineering Design (IED) (Honors)**

Grades 9 - 12                      1 Honors Credit                      Course Code 605100HW

*Prerequisite: Concurrent Enrollment in College Preparatory Mathematics*

Introduction to Engineering Design (IED) is the first Project Lead The Way (PLTW) course in the PLTW Engineering Pathway. The major focus of this course is on design. In this course students will be exposed to an engineering design process, research and analysis, teamwork, communication methods, engineering standards, and technical documentation. Students use 3D solid modeling design software (Autodesk Inventor) to help them design solutions to solve proposed problems and learn how to document their work and communicate their solutions to peers and members of the professional community.

## **Principles Of Engineering (POE) (Honors)**

Grades 10 - 12                      1 Honors Credit                      Course Code 605000HW

*Prerequisite: Concurrent Enrollment in College Preparatory Mathematics and completion of Introduction to Engineering Design (IED)*

Principles Of Engineering (POE) is the second Project Lead The Way (PLTW) course in the PLTW Engineering Pathway. The major focus of this course is on engineering. In this course students will be exposed to major engineering and scientific concepts in the solution of engineering design problems. They develop problem-solving skills and apply their knowledge of research and design to create solutions to various challenges, documenting their work and communicating solutions to peers and members of the professional community.

## **Civil Engineering and Architecture (CEA) (Honors)**

Grades 11 - 12                      1 Honors Credit                      Course Code 605800HW

*Prerequisite: Concurrent Enrollment in College Preparatory Mathematics and completion of Introduction to Engineering Design (IED)*

Civil Engineering and Architecture (CEA) is the third Project Lead The Way (PLTW) course in the PLTW Engineering Pathway. The major focus of this course is on civil engineering and architecture. In this course students apply what they learn about various aspects of civil engineering and architecture to the design and development of a property. Working in teams, students explore hands-on activities and projects to learn the characteristics of civil engineering and architecture. In addition, students use 3D design software to help them design solutions to solve major course projects. Students learn about documenting their project, solving problems and communicating their solutions to their peers and members of the professional community of civil engineering and architecture.

## **Engineering Design and Development (EDD) (Honors)**

Grades 11 - 12                      1 Honors Credit                      Course Code 605400HW

*Prerequisite: Concurrent Enrollment in College Preparatory Mathematics and completion of Introduction to Engineering Design (IED), Principles Of Engineering (POE), and Civil Engineering and Architecture (CEA)*

Engineering Design and Development (EDD) is the capstone course in the PLTW Engineering Pathway. It is the final PLTW course in the PLTW Engineering Pathway. It is an engineering research course in which students work in teams to design and develop an original solution to a valid open-ended technical problem by applying an engineering design process. Students will perform research to choose, define, validate, and justify a technical problem. After carefully defining the design requirements and creating multiple solution approaches, teams of students will select an approach and the design, build, and test their solution. Student teams will present and defend their original solution to an outside panel. While progressing through the engineering design process, students will work closely with experts and will continually hone their organizational, communication and interpersonal skills, their creative and problem solving abilities, and their understanding of the design process. The course applies and concurrently develops secondary level knowledge and skills in mathematics, science, and technology.