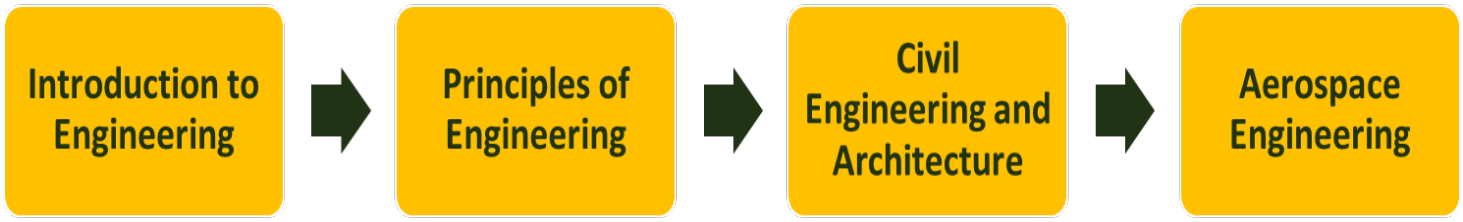
PLTW Engineering



Introduction to Engineering Design

Introduction to Engineering Design ™ (IED) is a high school level course with honors weighting that is appropriate for 9th or 10th grade students who are interested in design and engineering. The major focus of the IED course is to expose students to design process, engineering standards, research and analysis, technical documentation, global and human impacts, communication methods, and teamwork. IED gives students the opportunity to develop skills and understanding of course concepts through activity-, project-, and problem-based (APPB) learning. Used in combination with a teaming approach, APPB-learning challenges students to continually hone their interpersonal skills, creative abilities and understanding of the design process. It also allows students to develop strategies to enable and direct their own learning, which is the ultimate goal of education. At the end of this course, students will take an end of course assessment. Students who score a 6 on this exam will receive dual credit course weighting.

Principles of Engineering

<u>Prerequisites:</u> Students must have passed Introduction to Engineering Design and Algebra I. Students must have been accepted in the Engineering Major.

Principles of Engineering ™ (POE) is a high school level course with honors weighting that is appropriate for 10th-12th grade students who are interested in science, math, and engineering. The major focus of the POE course is to explore the wide variety of careers in engineering and technology and cover various technology systems and manufacturing processes. Using activities, projects, and problems, students learn first hand how engineers and technicians use math, science, and technology in an engineering problem solving process to benefit people. The course also addresses concerns about social and political consequences of technological change. POE gives students the opportunity to develop skills and understanding of course concepts through activity-, project-, and problem-based (APPB) learning. Used in combination with a teaming approach, APPB-learning challenges students to continually hone their interpersonal skills, creative abilities and understanding of the design process. It also allows students to develop strategies to enable and direct their own learning, which is the ultimate goal of education. At the end of this course, students will take an end of course assessment. Students who score a 6 on this exam will receive dual credit course weighting.

Civil Engineering & Architecture

Prerequisites: Must have passed previous courses

Civil Engineering and Architecture is the study of the design and construction of residential and commercial building projects. The course includes an introduction to many of the varied factors involved in building design and construction including building components and systems, structural design, storm water management, site design, utilities and services, cost estimation, energy efficiency, and careers in the design and construction industry. The major focus of the CEA course is to expose students to the design and construction of residential and commercial building projects, design teams and teamwork, communication methods, engineering standards, and technical documentation.

Utilizing the activity-project-problem-based (APPB) teaching and learning pedagogy, students will analyze, design and build electronic and physical models of residential and commercial facilities. While implementing these designs students will continually hone their interpersonal skills, creative abilities and understanding of the design process. Civil Engineering and Architecture is a high school level course that is appropriate for 10th or 11th grade students interested in careers related to civil engineering and architecture. Civil Engineering and Architecture is one of four specialization courses in the Project Lead The Way® high school pre-engineering program. The course applies and concurrently develops secondary level knowledge and skills in mathematics, science, and technology. At the end of this course, students will take an end of course assessment. Students who score a 6 on this exam will receive dual credit course weighting.

Aerospace Engineering

Prerequisites: Must have passed previous courses

This PLTW course propels students' learning in the fundamentals of atmospheric and space flight. As they explore the physics of flight, students bring the concepts to life by designing an airfoil, propulsion system, and rockets. They learn basic orbital mechanics using industry-standard software and explore robot systems through projects such as remotely operated vehicles. At the end of this course, students will take an end of course assessment. Students who score a 6 on this exam will receive dual credit course weighting.

Engineering Dual Enrollment

Conway High School is proud to have partnered with Horry Georgetown Technical College to offer dual enrollment Engineering courses to our STEM students. The program is designed for high school juniors and seniors who have already completed engineering based courses within their high school curriculum. Parent permission is required for admission to the program which is part of the Dual Enrollment Application. In addition, the student's high school guidance counselor and the Engineering teacher must sign the recommendation portion of the application for the students to be eligible for the program.

The STEM Engineering Dual Enrollment program provides an opportunity for students to earn a total of 20 college credit hours at HGTC. Students must contact the four year university they plan to transfer to and confirm course transferability. Students wishing to transfer to Clemson University for a our year degree in Construction Management may potentially transfer 17 of the 20 credit hours earned at HGTC to Clemson.

These placement score requirements must be met for acceptance into the program:

SAT		ACT			ACCUPLACER		
Reading	Math	Reading	Math	Writing	Reading	Math	Writing
380	440	14	21	12	56	76	58

1st Fall Semester—Juniors

EGT 101 Basic Technical Drawing	2 credits
EGR 170 Engineering Materials	3 credits

1st Spring Semester—Juniors

EGR 190 Statics	3 credits
AET 101 Building Systems 1	3 credits

2nd Fall Semester—Seniors

EGR 275 Intro to Eng/Auto Cad	3 credits
CET 140 Construction Financial Mgt	3 credits

2nd Spring Semester—Seniors

CET 245 Cost Estimating	3 credits

For information on ACCUPLACER testing, please visit
https://www.hgtc.edu/admissions/testing_center/accuplacer.html