



Harmony High School
Vocational Department
Longhorn Engineering & Drafting Academy
2017 – 2018 PLTW Engineering



Teacher:	Scott Grieve	Phone:	407-933-9900 x 55754
Subject:	PLTW Pre-Engineering Career Pathway	Email:	grieves@osceola.k12.fl.us
Room:	6-108	Planning:	Period 5
		School Website:	hrhs.osceola.k12.fl.us

Program Description:

The purpose of this program is to provide students with a foundation of knowledge and technically oriented experiences in the study of the applications of engineering and its effect upon our lives and the choosing of an occupation. The content and activities will also include the study of entrepreneurship, safety, and leadership skills. This program focuses on transferable skills and stresses understanding and demonstration of the technological tools, machines, instruments, materials, processes and systems in business and industry

Course Descriptions:

8600550-Introduction to Engineering Design (IED): This course exposes students to the design process, research and analysis, teamwork, communication methods, global and human impacts, engineering standards, and technical documentation. Students will employ engineering and scientific concepts in the solution of engineering design problems. In addition, they will learn to use 3D solid modeling design software to design solutions to problems. Students will develop problem-solving skills and apply their knowledge of research and design to create solutions, document the process, and communicate the results.

8600520-Principles of Engineering (POE): This course helps students understand the field of engineering/engineering technology and prepares them for postsecondary engineering programs by developing a more in-depth mastery of the required knowledge and skills in mathematics, science, and technology. Through problem-based learning strategies, students study key engineering topics, including mechanisms, energy sources, energy applications, machine control, fluid power, statics, material properties, material testing, statistics, and kinematics. 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. The course also includes concerns about social and political consequences of technological change.

8600530-Digital Electronics (DE): This is a course in applied logic that encompasses the application of electronic circuits and devices. Students are exposed to the design process of combinational and sequential logic design, teamwork, communication methods, engineering standards, and technical documentation. Computer simulation software is used to design and test digital circuitry prior to the actual construction of circuits and devices.

8600590-Civil Engineering & Architecture (CEA): This course 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, and Project Documentation and Presentation.

8600650-Engineering Design & Development (EDD): The purpose of this course is to serve as a capstone course to provide students with the opportunity to develop a solution to a design problem from start to finish. Students work in teams to design, engineer, create a prototype, perform product testing, and then produce a finished product. This would involve

using ALL of the knowledge previously learned, not only in technology education, but across the curriculum. Students will be expected to create and deliver a formal report on the project.

Resources:	
Supplemental resources:	• Handouts, worksheets, internet, class library
Websites	My.PLTW.org, PLTW.org, Innovation Portal, Office 365

Materials:
Notebook/Journal, Graph Paper, Loose-leaf paper & Printer Paper, Pens, pencils, eraser, Colored Pencils, etc.

Osceola County Grading Scale:		Approximate Grading Breakdown:	Remind 101
90-100	A	Projects/Presentations = 30% Assessments = 20% Classwork = 15% Homework = 15% Notebook = 15% Attendance/participation = 5%	IED Text: 81010 @Sgrieve Email: Sgrieve@mail.remind.com
87-89.9	B+		POE Text: 81010 @e2fa63 Email: e2fa63@mail.remind.com
80-86.9	B		DE Text: 81010 @e9663k Email: e9663k@mail.remind.com
77-79.9	C+		CEA Text: 81010 @d97bg6 Email: d97bg6@mail.remind.com
70-76.9	C		EDD Text: 81010 @9838e3 Email: 9838e3@mail.remind.com
67-69.9	D+		
60-66.9	D		
0-59.9	F		

NOTES:

- *These are college style hybrid courses. All content is available on-line including lectures, notes, videos and assignments. Students can access curriculum anywhere they have internet access.*
- *There is a course EOC that will be administered to verify student mastery at the end of the course.*
- *Industry Certification exams will be administered at the end of unit or end of the course to verify student mastery of software/skills used.*
- *All school and county policies will be followed as per the Osceola County Student Code of Conduct.*
- *Make Up work will be followed according to the Osceola County Student Code of Conduct. **Due dates are set and students are expected to follow them.** A course calendar is used and will be followed.*
- *Material in course outline is subject to modification by instructor if deemed necessary.*
- *I am usually available 30 minutes before and after school for tutoring other times available upon request as schedule allows.*
- *The use of computers or other electronic devices to play games or any non-class related activity during class time is not tolerated and will be strictly enforced. **1st – warning and call home, 2nd detention and call home, 3rd referral!***