

(PLTW) PROJECT LEAD THE WAY ENGINEERING COURSE PATHWAY OPTIONS		
Course	Course Requirements	Description
<u>INTRODUCTION TO ENGINEERING (CP)</u> <i>(GE-INTROENG)</i>	Grade 9-10 Year-long course HS -Technology, Practical Skills or General Elective PREREQUISITE -None UC/CSU – subject g	This course is designed for the student interested in an engineering related field of study. The major focus of this course is to expose students to the design process, research and analysis, teamwork, various communication methods, engineering standards, and technical documentation. Through hands-on projects, students apply engineering standards while documenting their work in design. Students use industry standard 3D modeling software to help design solutions to solve proposed problems, document their work using an engineer’s notebook, and communicate solutions to peers and members of the professional community. The course assumes no previous knowledge, but students should be concurrently enrolled in mathematics and science courses. This course will be the first of a four-year commitment to the Oak Park High School engineering track.
<u>AEROSPACE ENGINEERING (H)</u> <i>(GE-AEH)</i>	Grade 10- 12 Yearlong Course HS - Technology, general elective or practical skills Prerequisite - A grade of “C” or better in Intro to Engineering or Teacher permission. UC/CSU – subject g Honors	This 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. They also explore robot systems through projects such as remotely operated vehicles. This is a part of Oak Park’s Engineering Design pathway.
<u>DIGITAL ELECTRONICS (H)</u> <i>(GE-DIGITE)</i>	Yearlong Course Grades 10 – 12 HS - Technology, Practical Skills or General Elective PREREQUISITE – A grade of “C” or better in Intro to Engineering or Teacher permission. UC/CSU – subject g Honors	From smart phones to appliances, digital circuits are all around us. This course provides a foundation for students who are interested in electrical engineering, electronics, or circuit design. Students study topics such as combinational and sequential logic and are exposed to circuit design tools used in industry, including logic gates, integrated circuits, and programmable logic devices. This is the second course of the four year Engineering track.
<u>CIVIL ENGINEERING AND ARCHITECTURE (CP)</u> <i>(GE-CIVIL)</i>	Yearlong Course Grades 10 – 12 HS - Technology, Practical Skills or General Elective PREREQUISITE – A grade of “C” or better in Intro to Engineering or Teacher permission. UC/CSU – subject g	Students learn important aspects of building and site design and development. They apply math, science, and standard engineering practices to design both residential and commercial projects and document their work using 3D architecture design software. This course is part of multiple Career Technical Education pathways offered at OPHS.
<u>MECHATRONICS ENGINEERING LAB (H)</u> <i>(GE-EDD)</i>	Yearlong Course Grades 10 – 12 HS - Technology, Practical Skills or General Elective PREREQUISITE – A grade of “C” or better in Intro to Engineering or Teacher permission. UC/CSU – subject g Honors	Engineering design and development uses the knowledge and skills students acquire throughout PLTW to come together as they identify an issue and then research, design, and test a solution, ultimately presenting their solution to a panel of engineers. Students apply the professional skills they have developed to document a design process to standards, completing Engineering Design and Development ready to take on any post-secondary program or career.