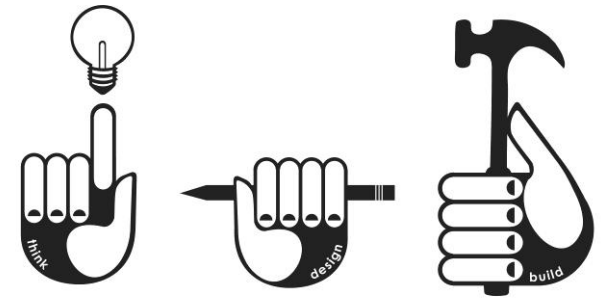


# Hawthorne High School of Engineering Parent Fact Sheet



**Award Winning** Comprehensive Pre-Engineering Program

Named **1 of 6 Schools** in the Nation for **Excellence in Manufacturing Education**

by “**The SME Education Foundation**” October 2011

hawthorne high / **school of engineering**

First South Bay School to offer **Pre-Engineering Curriculum** by *Project Lead the Way*

**9 years** of Experience

**Four Year Program** (see reverse) \***Sophomore Junior and Senior Level Classes are for College Credit**

Hands on Projects Created in state of the art Manufacturing Facility

High Degree of Professional Support from Local Industry

**Walt Disney Imagineering, Northrop Grumman, Boeing, Ace Clearwater, Google**

Student Engineering Competitions:

**FIRST Robotics and VEX Robotics**

**F1 in School Technology Challenge**

**Northrop Grumman Design Challenge**

**PLTW California Design Challenge**

Testing and Graduation Rates are significantly higher than Hawthorne High School\* Graduation rate 2011 @ 91% API 678

AVID Strategies are blended with all Engineering Classes and Core Academic Classes

Industry Job Shadowing Programs with Northrop Grumman, Boeing Space Technology and Mattel\* Based on Availability

**hhscougars.org/ea**

## **Introduction to Engineering Design**

In this course, students use 3D solid modeling design software to help them design solutions to solve proposed problems. Students will learn how to document their work and communicate solutions to peers and members of the professional community. This course is designed for 9th or 10th grade students. The major focus of the IED course is to expose students to the design process, research and analysis, teamwork, communication methods, global and human impacts, engineering standards and technical documentation.

## **Principles of Engineering**

This survey course of engineering exposes students to some of the major concepts they'll encounter in a postsecondary engineering course of study. Students have an opportunity to investigate engineering and high-tech careers and to develop skills and understanding of course concepts. Students employ 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. Students also learn how to document their work and communicate their solutions to peers and members of the professional community. This course is designed for 10th or 11th grade students.

## **Computer Integrated Manufacturing**

The major focus of this course is to answer questions such as: How are things made? What processes go into creating products? Is the process for making a water bottle the same as it is for a musical instrument? How do assembly lines work? How has automation changed the face of manufacturing? As students find the answers to these questions, they learn about the history of manufacturing, a sampling of manufacturing processes, robotics and automation. The course is built around several key concepts: computer modeling, Computer Numeric Control (CNC) equipment, Computer Aided Manufacturing (CAM) software, robotics and flexible manufacturing systems. This course is designed for 10th, 11th or 12th grade students.

## **Engineering Design & Development**

This capstone course allows students to design a solution to a technical problem of their choosing. They have the chance to eliminate one of the "Don't you hate it when..." statements of the world. This is an engineering research course in which students will work in teams to research, design, test and construct a solution to an open-ended engineering problem. The product development life cycle and a design process are used to guide and help the team to reach a solution to the problem. The team presents and defends their solution to a panel of outside reviewers at the conclusion of the course. The EDD course allows students to apply all the skills and knowledge learned in previous Project Lead The Way courses. The use of 3D design software helps students design solutions to the problem their team has chosen. This course also engages students in time management and teamwork skills, a valuable set for students in the future. This course is designed for 12th grade students.