Engineering Academy

Innovation • Design • Technology

Engineering at DVRHS

The Engineering Academy (EA) is a sequence of courses using the nationally recognized Project Lead the Way (PLTW) curriculum, that is based on a hands-on, real-world, problem-solving approach to learning.

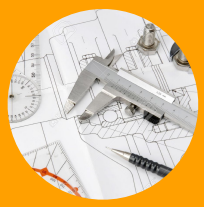
Throughout this program, students learn and apply the design process, acquire strong teamwork and communication proficiency, and develop organizational, critical-thinking, and problem-solving skills. The academy is designed to prepare students to pursue post-secondary education, training, and careers in STEM-related fields.

OVERVIEW

In order to satisfy the EA graduation requirements, students must complete three engineering courses (15 credits) as well as twenty credits of math including either Honors or AP Calculus.

Students must have completed Algebra I to enroll in Intro to Engineering Design.

Students who have successfully completed the EA requirements will receive a special designation on both their DVRHS diploma and official transcript.



Hands-on
Students learn to apply theory to real-world situations and product design.

Future-Ready
DVRHS was one for the first schools in NJ to earn the "Future Ready" designation.

Opportunity
The demand for technicians and engineers in a variety of fields continues to be strong.

COURSE SEQUENCE AND DESCRIPTIONS

1

Design and Materials Processing (DMP): This course aims to provide students with hands-on experience in technical drawing, design, prototyping, and fabrication. Students will engage in several project-based units throughout the course of the year, which will provide them with an excellent foundation for further Engineering Academy courses.

2

Introduction to Engineering Design (IED): Students are introduced to the engineering design process, applying math, science, and engineering standards to hands-on projects like designing a new toy or improving an existing product. They work both individually and in collaborative teams to develop and document design solutions using engineering notebooks and 3D modeling software.

3

Civil Engineering and Architecture (CEA): In this course students are introduced to 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 architectural design software.

4

Digital Electronics (DE): Digital electronics is the study of electronic circuits that are used to process and control digital signals. In contrast to analog electronics, where information is represented by a continuously varying voltage, digital signals are represented by two discrete voltages or logic levels. This distinction allows for greater signal speed and storage capabilities and has revolutionized the world of electronics.

MATRICULATION

It is important to note that admission into the program in the first year is entirely probationary. A student's progress is closely monitored by the faculty and area administrators. Students who successfully complete DMP and wish to continue in the EA program will fill out a formal application in the early spring of their first year in the program.

It is also notable that DMP also satisfies the New Jersey graduation requirement for five credits of a practical art course. A student may choose not to continue in the EA beyond the first year, but the credit earned in that course will still count toward graduation in the state of New Jersey.

For more information you can find us on the web: www.dvrhs.org/domain/1150