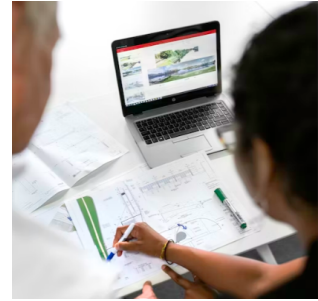


MOLINE-COAL VALLEY
SCHOOL DISTRICT



Engineering Career Pathway

Background

"The Bureau of Labor and Statistics (BLS) projects there to be 140,000 new jobs for engineers by the year 2026. It expects many of these jobs to go to civil engineers, mechanical engineers and industrial engineers, some of the most popular engineering branches."

The Moline-Coal Valley School District and local industry partners are providing school-based coursework, coupled with industry-based on the job training through a collaborative internship with a local engineering company, primarily over the summer between junior and senior years.

Facts

The MHS engineering curriculum is rooted in the Project Lead the Way national curriculum, which focuses on hands-on application of real-world problems and projects. According to the PLTW website, 92% of students enrolled in a high school PLTW course indicated that the coursework increased their interest in STEM.

Program Purpose

- To introduce students to the field of engineering and expose them to a variety of specialties within the engineering field
- To increase student exposure to STEM programming and challenging curriculum focusing on math and science
- To provide students to workplace opportunities within the engineering field and expose students to work life and career connections in our community and beyond.

Program Benefits

- Training, experience, and employability in a high-demand field
- Exposure to a variety of specialties within the engineering industry
- Paid work from the summer following 11th grade and possible expansion beyond that
- Encouraging students to persist in a STEM related field

Engineering Curriculum Overview

Freshman Course: Introduction to Engineering Design (IED)

This entry level Engineering course is a project based class. Students will use a 3-D Modeling CAD program in designing projects. Students will

Sophomore Course: Principles of Engineering (POE)

This entry level Engineering course introduces students to the application of engineering systems. Students will participate in hands-on

<p>learn proper drafting techniques used in industry. Projects will be researched from concept sketching, detailed design, market and component research, cost and production analysis and marketing. Students will be introduced to various careers in engineering and develop a portfolio. This is a challenging course of highly motivated students interested in pursuing a career in engineering.</p>	<p>activities and projects to apply mathematical and scientific concepts. This course includes the study of mechanics, thermodynamics, controls, strength and property of materials. Students will prepare records and presentations on activities and projects. This is the second course in a sequence for highly motivated students interested in pursuing a career in engineering.</p>
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**Junior Course: (CIM)
Computer Integrated Manufacturing**

This secondary level Engineering course allows students to study and apply prior skills to manufacturing techniques. Students will participate in hands on activities and projects to apply mathematical and scientific concepts. This course includes lessons and projects utilizing computer modeling, CNC machining, robotics and computer integrated manufacturing, CAM systems and flex manufacturing systems. Students will prepare and produce individual and team centered projects demonstrating the concepts and techniques taught in this course. This is the third course in a sequence for highly motivated students interested in pursuing a career in engineering.

**Senior Course:
Civil Engineering & Architecture**

This secondary Engineering course is the final course in the PLTW sequence. Students will 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 for highly motivated students who are interested in pursuing a career in engineering and/or construction management.

Internship

After touring one or more partner companies in March of the junior year, students will have the opportunity to apply for a 5-day paid spring break internship program with that company. During the 5-day paid internship, students will rotate through various engineering specialties and job tasks to get an overview of working in an engineering firm. Those students who excel during the 5-day intern program may have the opportunity to extend their connection with the partner company by establishing a regular work schedule with the engineering department over the summer.

Our Partners

