ENGINEERING: Project Lead the Way™ (PLTW) ACADEMY

College credits earned: up to 18.0 (varies by program location)

Why College Credit in High School?

… Find your passion
… Get a head start
… Experience college-level expectations with rock star teachers
… Earn free college credit
… Why not!

Experience

What if there was a class where curiosity ruled? Where you learned not only how things worked, but how you might make them work better. Where the biggest challenge was between you and your imagination. Discover engineering.

Outcome

Through project-based curriculum, problem-solve real-world engineering challenges through nationally recognized, pre-engineering curriculum.

Better prepared for demanding rigor of two- and four-year engineering programs.

PLTW alumni are studying engineering and technology in greater numbers than the national average, with a higher retention rate in college engineering, science and related programs than non-PLTW students.

Career Focus

Determine if engineering is the right career path for you.

The Kirkwood PLTW Academy provides students with a jump start to earning an associates, bachelors and/or graduate degree. Examples of college majors include, but are not limited to: Electronics Engineering Technology and Engineering in a wide variety of disciplines. If you're planning to transfer to a four-year college or university after attending Kirkwood, specific transfer information can be found at the following link: www.kirkwood.edu/fouryeartransfer

Iowa Average Salaries in Engineering

Electronic Engineering Technician: $49,140
Computer Engineers: $98,610
Civil Engineers: $77,990
Biomedical Engineers: $81,540
More info can be found at: www.bls.gov

College credit courses included in this academy experience:

EGT-400 Introduction to Engineering Design™ (IED)

Uses a design development process while enriching problem-solving skills; students create and analyze models using specialized computer software.

EGT-410 Principles of Engineering™ (POE)

Explores technology systems and manufacturing processes; addresses the social and political consequences of technological change.

EGT-440 Biotechnical Engineering (BE)

In this course students explore the diverse fields of biotechnology. Hands-on projects engage students in engineering design problems related to biomechanics, cardiovascular engineering, genetic engineering, tissue engineering, biomedical devices, forensics and bioethics. Students, usually at the 11th and 12th grade level, apply biological and engineering concepts to design materials and processes that directly measure, repair, improve and extend living systems.

EGT-460 Civil Engineering and Architecture (CEA)

Students learn about various aspects of civil engineering and architecture and apply their knowledge to the design and development of residential and commercial properties and structures. In addition, students use 3D design software to design and document solutions for major course projects. Students communicate and present solutions to their peers and members of a professional community of engineers and architects. This course is designed for 11th or 12th grade students.

EGT-450 Computer Integrated Manufacturing (CIM)

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? While students discover the answers to these questions, they're learning about the history of manufacturing, robotics and automation, manufacturing processes, computer modeling, manufacturing equipment, and flexible manufacturing systems. This course is designed for 10th, 11th or 12th grade students.

EGT-440 Digital Electronics (DE)

Digital electronics is the foundation of all modern electronic devices such as mobile phones, MP3 players, laptop computers, digital cameras and high-definition televisions. Students are

introduced to the process of combinational and sequential logic design, engineering standards and technical documentation. This course is designed for 10th or 11th grade students.

EGR-430 Aerospace Engineering (AE)

AE explores the evolution of flight, navigation and control, flight fundamentals, aerospace materials, propulsion, space travel, and orbital mechanics. In addition, this course presents alternative applications for aerospace engineering concepts. Students analyze, design, and build aerospace systems. They apply knowledge gained throughout the course in a final presentation about the future of the industry and their professional goals. This course is designed for 10th, 11th or 12th grade students. (High school and EGR transfer credit only)

Capstone Course

Engineering Design and Development (EDD)

In this capstone course, students work in teams to design and develop an original solution to a valid open-ended technical problem by applying the engineering design process. Students perform research to choose, validate, and justify a technical problem. After carefully defining the problem, teams design, build, and test their solutions while working closely with industry professionals who provide mentoring opportunities. Finally, student teams present and defend their original solution to an outside panel. This course is appropriate for 12th grade students. (High school credit only)

Need to Know …

- All courses are available as dual credit courses and students may be eligible for Regent-accepted, transferrable (EGR) engineering credit. All courses are worth 3 credit hours. In order to receive transferrable EGR credit, students must receive a stanine score of 6 or greater on the end of course assessment. If a student does not achieve this they will still receive EGT credit from Kirkwood.
- Prerequisites: Introduction to Engineering Design is considered a prerequisite to Principles of Engineering. Students should have completed Algebra I (or currently enrolled in while in Introduction to Engineering Design). Students enrolled in Principles of Engineering should also be enrolled in a college-prep math course.
- Students enrolled will receive credit from their high school and college credit from Kirkwood. The college tuition is paid for by the high school district.
- The grade earned in this course will be reflected on the student's official college transcript. Students not planning to attend Kirkwood after high school graduation should plan to include this transcript as part of your application process to other colleges or universities. www.kirkwood.edu/transcript
- As part of earning college credit for this academy, students must complete an online application to Kirkwood Community College, and must provide a social security number as part of the secure online college application process to create the official student record.

Program Details …

- Course offerings vary by location.
- Check with your guidance counselor to see if the Project Lead the Way Academy is at a location near you.

How to Get Started

- Talk to your parents and your guidance counselor.
- Go to www.kirkwood.edu/apply and click "Earn College Credit in High School."