



**NORTH**  
KANSAS CITY SCHOOLS



North Kansas City Schools is proud to offer **world-class high school engineering** courses. Whether a student is curious to understand more about engineering, has decided to pursue it as a career, or simply wants to **think critically, work collaboratively, and explore** how math and science work in his or her everyday life, **PLTW's Pathway To Engineering (PTE) Program** provides a track for success. Students engage in open-ended problem solving, learn and apply the engineering design process, and develop vital teamwork, communication, and critical-thinking skills. Throughout the courses, **students use the same industry-leading technology and software as the world's top companies.** The exciting and challenging fields of engineering come alive in the PTE program, which is designed to prepare students for careers or post-secondary study in STEM fields.



Preparing students for the global economy

#### Foundation Courses

IED

##### **Introduction to Engineering Design**

Students dig deep into the engineering design process, applying math, science, and engineering standards to hands-on projects. They work both individually and in teams to design solutions to a variety of problems using 3D modeling software and document their work in an engineering notebook.

POE

##### **Principles Of Engineering**

Through problems that engage and challenge, students explore a broad range of engineering topics including mechanisms, the strength of structures and materials, and automation. Students develop skills in problem solving, research, and design while learning strategies for design process documentation, collaboration, and presentation.

#### Specialization Courses

AE

##### **Aerospace Engineering**

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 and explore robot systems through projects such as remotely operated vehicles.

CEA

##### **Civil Engineering and Architecture**

Students learn important aspects of building and site design and development, applying math, science, and standard engineering practices to design both residential and commercial projects. They document designs using 3D architecture design software. Some students have seen these designs come to life through partnerships with local housing organizations.

DE

##### **Digital Electronics**

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.

#### Capstone Course

EDD

##### **Engineering Design and Development**

The knowledge and skills students acquire on the 'Pathway To Engineering' come together in EDD 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 EDD ready to take on any post-secondary program or career.

