

GREAT PLAINS Technology Center

Pre-Engineering High School Program

Apply your math and science skills in this two-year college prep program to get you ready for a rigorous engineering or technology degree. Earn 3 credits each year with college credit options.



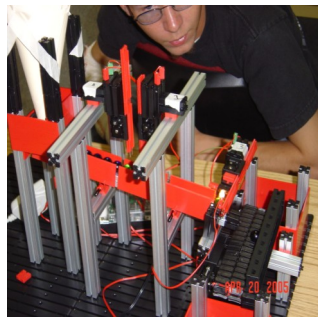
Pre-AP and AP Physics B

Kinematics, energy, collisions, fluids, heat, optics, electricity, magnetism, sound, light waves, modern and nuclear topics

Pre-Calculus and AP Calculus

GPTC exceeds state and national pass rates on AP Calculus national exam

Pre-Engineering Courses



Principles of Engineering-This foundational course provides an overview of engineering and engineering technology. This course provides a hands-on approach to the application of physics and math principles.

Introduction to Engineering Design-This foundational course introduces sketching and 3-D modeling using the professional software design program Autodesk Inventor.

Digital Electronics-This required foundation course introduces students to the concepts of digital electronics and applied logic. Students learn how to design, build, test, and troubleshoot electronic circuits and projects.



Aerospace Engineering-This elective specialization course introduces students to the concepts of aerodynamics, astronautics, space-life, and systems engineering through problems and projects.

Civil Engineering and Architecture-This elective specialization course provides an overview of the field of civil engineering and architecture using project and site planning, building design, and project documentation and presentation.



For more information or personalized tours, please feel free to contact one of the following pre-engineering faculty:

Tracy Wicker 580-250-5647

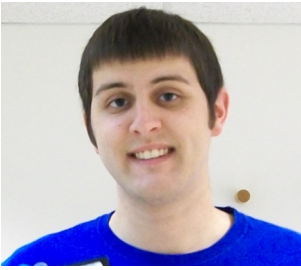
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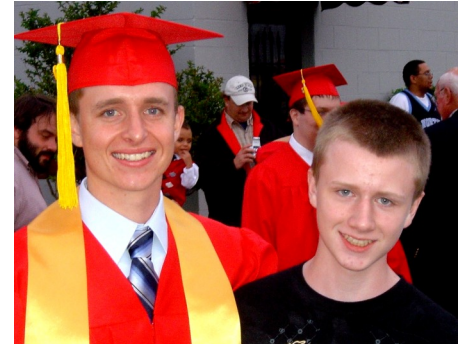
OSU Electrical Engineering Technology Senior-Robert Schlecht

When I first entered the Pre-engineering program at GPTC, I wasn't sure if I wanted to be an engineer let alone what kind I would want to be. However because of the talented, hardworking teachers and the wide array of disciplines covered, I was able to get into the swing of things easily and learned a lot about the engineering world. I am now almost finished with a degree in Electrical Engineering Technology and will be working with a company called L-3 communications this summer. I feel that I have this program to thank, and that it was one of the most important decisions I have made in my life.

OSU Mechanical Engineering Junior-Chris Duncan

I am so glad I took physics and calculus in pre-engineering at GPTC. The fundamentals you learn will give you a solid foundation for understanding college engineering mathematics and physics. However it's not always about the final solution. It's whether or not you understand the theory and principles. Pre-engineering strengthened my ability in these areas.

While attending pre-engineering at GPTC, I had the chance to intern with Goodyear. The experience has helped me tremendously in college. My third summer of college, I interned with International Paper in Valliant, OK. They acknowledged my achievements in the pre-engineering program and the internship with Goodyear. I am so happy to see my younger brother, Justin, attending the pre-engineering program and how it has grown so much.



OSU Architectural Engineering Junior-Erica Castillo

My high school pre-engineering classes helped build confidence and prepared me for college. One of the biggest helps was learning how to manage my homework. I also have a good understanding of math and physics. So do my friends from pre-engineering, and they are here with me at OSU. We learned we are interested in the same things and we still help each other out. We learned how to study together and to work in teams.

In college, freshmen have to decide which type of engineering career to focus on. That would be hard to do, but pre-engineering helped me figure it out. I like art, but had no idea it could combine with engineering. Now, I'm studying to become an architectural engineer.

Dee Jarvis: Tire Assembly - Mechanical / Electrical Design Engineer for The Goodyear Tire & Rubber Company

At the Lawton-based Goodyear plant I am one of 10 engineers and the only one from Oklahoma. Lawton is my hometown. I've been on the advisory committee of the pre-engineering program at GPTC since its inception seven years ago. We review curriculum and equipment to ensure the program is up to date with industry and teaching the right stuff. PLTW is right on. Students are getting expanded engineering experience in areas such as design. Goodyear provides mentors and internships to the students and actively recruits for engineers at the state colleges. The company hopes to be able to hire some good "homegrown" engineers who want to stay closer to home to work. We have a high turnover rate because engineers come from far-away states and end up wanting to get back closer to home. We hope to hire more engineers from the local area who will want to stay with us.

Barry Beauchamp, Superintendent, Lawton Public Schools

Great Plains and Lawton Public Schools have had an informal partnership for years. Seven years ago we formalized an active program with LPS to provide staff and other resources to make this type of program available to our students and enhance its value. I've seen the number of students participating grow about four-fold during its seven years. This is a wonderful opportunity to take classroom knowledge and theory and put it into practice. CareerTech's pre-engineering program gives students a jumpstart on a career path or an early ability to identify a different path.

The greatest value, though, is realizing that when different entities collaborate there is so much more that can be done for the people they serve.

Jeanie Caldwell, Lawton High School Advisor

PLTW is exciting. The program enables not just the students with straight A's, but B and high C students with a keen interest to make it. They ALL love it. These students have all the ability in the world but it hasn't being used in the regular classroom setting. They surprise themselves that they can learn this difficult curriculum and they feel special. Straight A students love it, too. They love the application of math and science and to see how it all works together by doing projects.

A barrier to overcome is to understand that the program is not for straight A students only, but for those who are genuinely interested in math and science. Many are afraid that the class might be too hard for them. Sometimes fear of the unknown is also a barrier, but 99 percent of the students feel they are treated more like adults as they learn to apply their newly acquired knowledge to industry.



Pre-Engineering

