

STEM

SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (STEM)

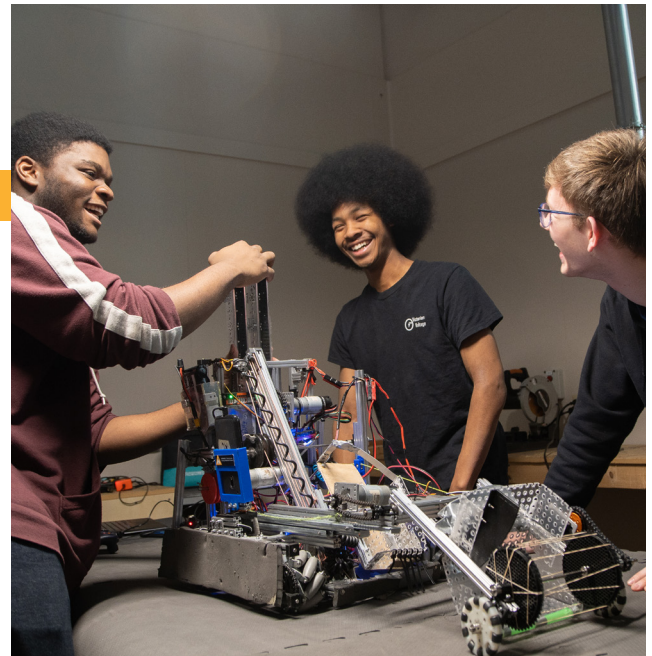
ENGINEERING-PLTW

PROGRAM OF STUDY

The Engineering program of study focuses on the application of science, mathematical methods, and design thinking to solve real-world problems. Areas of focus include technical communication, 3D CAD modeling, technical drawings and schematics, automation, mechanisms, structural analysis and design, material testing, circuit design, combinational and sequential logic, physics of flight, orbital mechanics, technical specifications, documentation and presentations.

Texas Data: Collected by TEA October 2019

OCCUPATIONS	MEDIAN WAGE	ANNUAL OPENINGS	% GROWTH
Aerospace Engineers	\$110,843	481	9%
Industrial Engineers	\$97,074	1,263	10%
Mechanical Engineers	\$91,707	1,535	11%
Chemical Engineers	\$112,819	474	9%
Electrical Engineers	\$98,405	1,137	10%



RECOMMENDED COURSE SEQUENCE

- 1 LEVEL** Introduction to Engineering Design
- 2 LEVEL** Aerospace Engineering, Digital Electronics
- 3 LEVEL** Engineering Science, Computer Integrated Manufacturing (RHS)
- 4 LEVEL** Practicum in STEM: Engineering, Scientific Research and Design

NOTE: See reverse for additional course sequence options and endorsement requirements. Course descriptions and details can be found in the course catalog.

WORK-BASED LEARNING EXPERIENCES	CAREER AND TECHNICAL STUDENT ORGANIZATIONS
Guest Speakers; Campus Service; Project-based Learning; COOL Experiences	FIRST Robotics; SkillsUSA; BEST; TSA; NTHS; CyberPatriots; Women in STEM



The Science, Technology, Engineering, and Mathematics (STEM) Career Cluster focuses on planning, managing, and providing scientific research and professional and technical services, including laboratory and testing services, and research and development services.

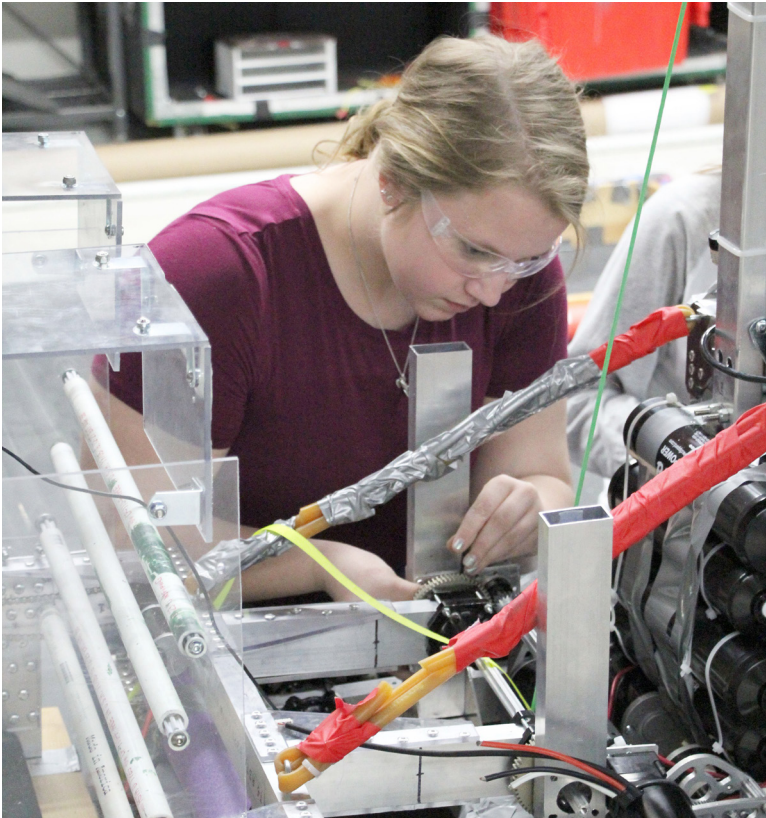
Non-Discrimination Statement

It is the policy of Leander ISD not to discriminate on the basis of race, color, national origin, sex or handicap in its Career and Technology Education Programs, services, or activities. Leander ISD will take steps to assure that lack of English language skills will not be a barrier to admission and participation in all educational and vocational programs. Es norma de Leander ISD de no discriminar por motivos de raza, color, origen nacional, sexo o impedimento, en sus programas, servicios o actividades vocacionales. Leander ISD tomará las medidas necesarias para asegurar que la falta de habilidad en el uso de la lengua inglés no sea un obstáculo para la admisión o participación en todos los programas educativos y vocacionales.

ENGINEERING (PLTW)

SCIENCE, TECHNOLOGY, ENGINEERING
AND MATHEMATICS (STEM)

A student may earn a STEM endorsement by completing foundation and general endorsement requirements including Algebra II, Chemistry and Physics. Endorsement course options for the Engineering program of study are listed below.



7 CREDITS REQUIRED

Required Courses:

- Algebra II
- Chemistry
- Physics
- Introduction to Engineering Design
- Engineering Science

Choose at least 1 additional credit from the following:

- Aerospace Engineering
- Digital Electronics
- Computer Integrated Manufacturing (RHS)
- Practicum in STEM: Engineering
- Scientific Research and Design

Choose additional credit, if needed, from the following:

- Electrical Technology (LHS)
- Architectural Design I
- Principles of Construction (GHS, LHS)
- Agriculture Mechanics and Metal Technologies
- Professional Communications
- Career Preparation

NOTE: Students who do not complete Algebra II, Chemistry and Physics, but earn four credits in the Engineering Program of Study, are eligible to earn a Business and Industry Endorsement.

INDUSTRY-BASED CERTIFICATION | CERTIFICATION COURSE ALIGNMENT | CERTIFICATION DESCRIPTION

***SolidProfessor** may be an option for students to prepare for the Inventor Certification Exam. SolidProfessor is free through a recent partnership with PLTW. Students will need their my.pltw.org account login information.

Autodesk Certified Professional or User (ACU) – Inventor

An Autodesk Inventor Certified User certification demonstrates entry-level knowledge that includes creating, modifying, formatting, and sharing 2D sketches, creating parts, viewing and animating assemblies, and creating presentations and drawings.

The Autodesk Certified Professional certification assesses professional users' knowledge of the tools, features, and common tasks of AutoCAD. Earners of this certification have demonstrated knowledge of dimensioning, basic drawing skills, using hatching and gradients, and more.

For additional information, please visit the following link:
<https://certipoint.pearsonvue.com/Certifications/Autodesk/Certifications/Certify>

NOTES:
