Science, Technology, Engineering & Math Cluster

STEM Endorsement

Questions to Ask When Exploring Careers :

1. What careers relate to things I like to do?
2. Show me the $$! What are the potential salaries of my careers of interest?
3. Are my careers of interest projected to grow? (Job Outlook)

Do you….

- ✓ have a gift for determining better solutions to scientific and engineering problems?
- ✓ love to determine how mechanical structures operate and are created?
- ✓ have a fascination with creating better modes of transportation?
- ✓ have the ability to envision new inventions and innovations for the future?
- ✓ Excel in the subjects of math and science?

Take the first steps in turning your visions into reality. Explore the career possibilities in STEM!

Many of the world's greatest innovators were visionaries who saw things that had yet to be created. Masters at problem solving, along with tenacity, engineers have advanced civilizations throughout the centuries. Maybe **your concepts** will lead to major breakthroughs in the future? *Endless possibilities!!!!*

Get started in high school.

Sample Fastest Growing STEM Careers-Salary Ranges in Texas	Bottom 10% & Under	50%	Top 10% & Up
Mechanical Engineers	$58,050	$92,330	$159,200
Economists	$46,230	$102,240	$187,200
Biomedical Engineers	$46,610	$85,870	$124,600
Chemists	$36,980	$61,390	$121,630
Mathematicians	$18,720	$53,900	$164,760
Statisticians	$41,660	$74,960	$121,270
Civil Engineers	$55,160	$87,910	$158,490
Economists	$46,230	$102,240	$187,200+
Microbiologists	$33,700	$47,940	$90,210

Careers to Consider with a 4-Year College Degree and Higher:

- ➢ Remote Sensing Technicians
- ➢ Cartographers
- ➢ Aerospace Engineer
- ➢ Bioinformatics Technicians

With a 2-Year College Degree:

- ➢ Electrical Drafter
- ➢ Automotive Engineering Technician
- ➢ Civil Drafters

Certificate or HS Diploma

- ➢ Surveying Technicians
- ➢ Avionics Technicians

Career & Technical EDUCATION
SPRING BRANCH INDEPENDENT SCHOOL DISTRICT

Spring Branch Independent School District
Inspiring minds. Shaping lives.

Career Pathways in STEM (CTE)

	Pathways and Required Courses				
Civil Engineering-PLTW MHS	**Introduction to Engineering Design (IED)**	**Principles of Engineering**	**Civil Engineering**	***Engineering Design and Development OR Internship in Civil Engineering**	**Certification: AutoDesk Inventor**
Computer Integrated Manufacturing-PLTW MHS	**Introduction to Engineering Design (IED)**	**Principles of Engineering**	**Computer Integrated Manufacturing**	***Engineering Design and Development OR Internship in CIM related area**	**Certification: AutoDesk Inventor**
Digital Electronics-PLTW MHS, SHS, SWHS	**Introduction to Engineering Design (IED)**	**Principles of Engineering**	****Digital Electronics**	***Engineering Design and Development OR Internship in Digital Electronics**	**Certification: AutoDesk Inventor**

Refer to the Spring Branch ISD High School Program of Studies for more detailed information regarding course descriptions, prerequisites, career pathways , endorsements, and certifications.

***Satisfies 3rd or 4th Year Science Graduation Requirement with required prerequisites.**
****Satisfies 3rd Year Mathematics Graduation Requirement with required prerequisites.**

Samples of the professional experiences and the programs that students will enjoy in our STEM courses:

Introduction to Engineering Design (PLTW) • an overview of the engineering design process • prerequisite for all PLTW courses

Biotechnology • study emerging fields of biotechnology such as agricultural, medical, regulatory and forensics • use sophisticated lab equipment, perform statistical analysis • study structures and functions of cells, nucleic acids, proteins, and genetics

Civil Engineering (PLTW) •apply math, science, and standard engineering to design residential and commercial civil engineering projects •work with 3D CAD software •study important aspects of construction and building

Computer Integrated Manufacturing (PLTW) • learn about modern manufacturing methods • robotics and automation • manufacturing processes • computer modeling • rapid prototyping • CNC programming

Digital Electronics (PLTW) • study electronic circuits used to process and control digital signals • analyze, design & build digital electronic circuits

Engineering Mathematics • solve and model robotic design problems • analyze problems involving data acquisition, spatial applications, electrical measurement, and much more with computer programming

Engineering Design and Development (PLTW) • **capstone of the PLTW high school engineering course** •work in teams, using engineering design processes to research, design to develop an original solution to a valid open ended technical problem

Engineering Mathematics • solve and model robotic design problems • analyze problems involving data acquisition, spatial applications, electrical measurement, and much more with computer programming

Principles of Engineering (PLTW) • a higher education engineering program • study mechanisms, energy, statics, materials, kinematics, computer control systems knowledge of math, science and design used to create solutions to various challenges

Principles of Technology •apply physics concepts and perform lab experimentations using safe practices • scientific field investigations •samples of topics include thermodynamics, electricity, momentum, magnetism, and laws of motion

For more information, contact your school counselor or:
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Sources: Achieve Texas, O*Net Online, Labor Market and Career Information, CareerOneStop.org, U.S. Bureau of Labor & Statistics