

Engineering

Programs of Study: Engineering Foundations

Chapter 127. Texas Essential Knowledge and Skills for Career Development and Career and Technical Education Subchapter I. Engineering

	1st Six Weeks	2nd Six Weeks	3rd Six Weeks	4th Six Weeks	5th Six Weeks	6th Six Weeks
7th Grade Introduction to Engineering	Course Introduction, Systems, and Procedures	Measuring 101: Engineering Standards and Measuring Tools	Introduction to Drafting and Technical Drawing	Introduction to Computer Aided Drafting (CAD)	Introduction to Electrical Engineering	Introduction to Programming and Automation
	The Evolution of Engineering					
Principles of Applied Engineering	What is Engineering?	Engineering Design	Researching Designs	Modeling, Testing and Final Outputs	Manufacturing Engineering	Civil Engineering
	Engineering as a Profession	Defining Problems and Brainstorming	Communicating Solutions	Mechanical Engineering	Electrical Engineering	Aerospace Engineering
Introduction to Robotics	Introduction to Robotics Speedbot Build Torque, Levers, and Gears Clawbot - Center of Gravity Notebooking and Schematics	Engeneering Notebooks & Schematics Coding Autonomous Circuits	Sensors - Vex Speed, Velocity, Accelerations & Vectors	Physics Concepts Demonstration Design Specification Engineering Notebooks & CAD	Engineering Notebooks & CAD VEX build Material Analysis Sensors & Autonomy	Drivertrains & Gearboxes Robot Challenges Engineering Notebook and Inventories
Manufacturing Engineering Technology 1 and 2	Professionalism and Employability	Solidworks - Prototyping, Exam Prep, Exam	CNC Milling Coding	CNC Turning Coding	Robotics and Automation	Electrical and Thermal Systems
	Mathematical Processes		CNC Milling CAM and SiemensLevel 1 Milling Certification			CNC Turning CAM and SIEMENS Level 1 Turning
	Solidoworks - Introduction					
Drone Engineering	Scientific Principles Impacting Flight	Airport Operations	Alternating Content: FAA Part 107 Prep and Testing	Drone Design, Build and Operations	Flight Courses and Competitions	IR Imaging and Photogrammetry
	Weather and the Flying Environment		Block and Python Coding - Tello Drones			Arduino Microcontrollers and Final Projects
	Aviation Weather Services	Aeronautical Charts and Airspace				
Aerospace Engineering	Course Introduction	Applied Math and Science	Gen 4 Teambuilding and Rocket Design	Gen 4 Rocket Build	Gen 4 Rocket Build	Gen 4 Rocket Build
	Applied Math in Rocket Science			Material Ordering and Mock Build	Project Management and Teambuilding with Final Gen 4 Rocket Design	Final Design Field Readiness Cross Examination
	Engergy and Electronics					
	Gen 1 Build and Launch					
	Gen 2 Build and Launch					
	Applied Science for Rocket Design	Recovery Systems				
Pilot Ground School	Scientific Principles Impacting Flight	Airport Operations	Alternating Content: FAA Pilot Prep and Testing	Flight Simulators	Flight Simulators	Flight Simulators
	Weather and the Flying Environment					
	Aviation Weather Services	Aeronautical Charts and Airspace				