



Principles of Applied Engineering

Level 1

Principles of Architecture
Geographic Information Systems (GIS)

Level 2

Raster-Based Geographic Information Systems

Scientific Research and Design

Level 3

Practicum in Science, Technology, Engineering and Mathematics

Level 4

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
Autodesk-Certified Professional or User in AutoCAD	National Society of Professional Surveyors (NSPS) Certified Survey Technician Program Level 1	Survey Technology/ Surveying	Civil Engineering	Civil Engineering
			Geoscience	Geoscience

Occupations	Median Wage	Annual Openings	% Growth
Cartographers and Photogrammetrists	\$58,926	162	27%
Surveyors	\$56,326	333	9%
Surveying and Mapping Technicians	\$40,477	806	9%
Geoscientists, Except Hydrologists and Geographers	\$121,368	855	9%
Survey Researchers	\$48,485	84	31%

Additional industry-based certification information is available on the TEA CTE website. For more information on postsecondary options for this program of study, visit TXCTE.org.

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Participate in competitions like Skills USA	Surveying internship

The Geospatial Engineering and Land Surveying regional program of study focuses CTE learners on the development of skills in surveying, automated computer aided drafting, geographical information systems and raster-based geographic information systems. This regional program of study also includes exploration into remote sensing, geoscience and mapping.



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.

Successful completion of the Geospatial Engineering and Land Surveying regional program of study will fulfill requirements of the Business and Industry or STEM Endorsement if the math and science requirements are met. See the regions approved to offer this program of study at <https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/regional-programs-of-study>. Revised - July 2020



COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITES (PREQ) COREQUISITES (CREQ)	Grade
Principles of Applied Engineering	13036200 (1 credit)	None	9-10
Principles of Architecture	13004210 (1 credit)	None	9-12
Scientific Research and Design	13037200 (1 credit)	PREQ: Biology, Chemistry, Integrated Physics and Chemistry (IPC) or Physics	11-12
Geographic Information Systems (GIS)	N1302805 (1 credit)	None	10-12
Raster-Based Geographic Information Systems	N1302806 (1 credit)	None	10-12
Practicum in Science Technology, Engineering and Mathematics	13037400 (2 credits) 13037405 (3 credits) 13037410 (2 credits) 13037415 (3 credits)	PREQ: Algebra I and Geometry	12

FOR ADDITIONAL INFORMATION ON THE SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS CAREER CLUSTER, PLEASE CONTACT: CTE@tea.texas.gov
<https://tea.texas.gov/cte>