

# Science, Technology, Engineering, and Mathematics Career Cluster

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.

## Geospatial Engineering and Land Surveying Regional Program of Study



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.

### Secondary Courses for High School Credit

#### Level 1

- Principles of Applied Engineering

#### Level 2

- Principles of Architecture
- Geographic Information Systems (GIS)
- Raster-Based Geographic Information Systems

#### Level 3

- Scientific Research and Design

#### Level 4

- Practicum in Science, Technology, Engineering and Mathematics

### Postsecondary Opportunities

#### Associates Degrees

- Survey Technology/Surveying

#### Bachelor's Degrees

- Civil Engineering
- Geoscience

#### Master's, Doctoral, and Professional Degrees

- Civil Engineering
- Geoscience

### Work-Based Learning and Expanded Learning Opportunities

#### Exploration Activities

- Participate in SkillsUSA competitions

#### Work-Based Learning Activities

- Intern at a surveying firm

### Industry-Based Certifications

- ESRI ArcGIS Desktop Entry

\*IBC sunsetting 8/31/24



### Aligned Occupations

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%

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. Revised – August 2022

# Geospatial Engineering and Land Surveying Course Information

## Level 1

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Principles of Applied Engineering	13036200 (1 credit)	None	None

## Level 2

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Principles of Architecture	13004210 (1 credit)	None	None
Geographic Information Systems (GIS)	N1302805 (1 credit)	None	None
Raster-Based Geographic Information Systems	N1302806 (1 credit)	None	None

## Level 3

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Scientific Research and Design	13037200 (1 credit)	Biology, Chemistry, Integrated Physics and Chemistry (IPC) or Physics	None

## Level 4

COURSE NAME	SERVICE ID	PREREQUISITES	COREQUISITES
Practicum in Science, Technology, Engineering and Mathematics	13037400 (2 credits) 13037405 (3 credits) 13037410 (2 credits) 13037415 (3 credits)	Algebra I and Geometry	None

FOR ADDITIONAL INFORMATION ON THE SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS CAREER CLUSTER,

PLEASE CONTACT: [CTE@tea.texas.gov](mailto:CTE@tea.texas.gov)  
<https://tea.texas.gov/cte>

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