



ACHIEVE TEXAS

ALIEF ISD COUNSELORS: PROMOTING COLLEGE AND CAREER READINESS

Students eager to be at the vanguard of 21st century technology innovation and problem solving, will find plenty to keep them captivated in the Science, Technology, Engineering and Mathematics (STEM) Career Cluster.

Sample Occupations:

- ◆ Biologist or microbiologist
- ◆ Chemist
- ◆ Biochemist or biophysicist
- ◆ Mathematician
- ◆ Statistician
- ◆ Engineer: Aerospace, industrial, biotechnology, chemical, marine, materials, civil, petroleum
- ◆ Atmospheric or space scientist
- ◆ Geoscientist or materials scientist
- ◆ Surveying and mapping technician
- ◆ Hydrologist
- ◆ Materials lab and supply technician
- ◆ Quality technician
- ◆ Nuclear equipment operation or monitoring technicians

2 Career Pathways within the cluster:

1. Engineering and technology
2. Science and math

Fast-Growing Careers

Occupation	% Growth (2006-2016)	New Jobs (2006-2016)
Agricultural Engineer	50.0%	150
Atmospheric and Space Scientist	39.0%	900
Cartographers and Photogrammetrists	33.0%	800
Medical Scientist	32.0%	10,600
Forensic Science Technician	31.0%	1,700
Geoscientist	31.0%	11,650
Biomedical Engineer	30.0%	650
Environmental Scientists	28.0%	5,900
Petroleum Engineer	28.0%	10,950
Biochemist	30.0%	1,050

This is a projection of 10 fast-growing careers in Science, Technology, Engineering & Mathematics in Texas from the year 2006 to 2016 and the number of new jobs created in each occupation. Note that while the percentage of growth in jobs may be high, the actual number of jobs created may be low. For example, there will be only 50 new jobs for physicists created in Texas during the decade that the data covers. Source: Texas Workforce Commission.





Top-Paying Careers

Occupation	Average Wage	Entry-Level Wage	Experienced Wage
<i>Petroleum Engineer</i>	\$60.85	\$33.20	\$74.67
<i>Geoscientist</i>	\$59.48	\$31.01	\$73.72
<i>Natural Sciences Manager</i>	\$56.72	\$36.31	\$66.93
<i>Agricultural Engineer</i>	\$51.10	\$27.34	\$61.49
<i>Physicists</i>	\$45.96	\$24.46	\$56.71
<i>Civil Engineer</i>	\$40.41	\$24.54	\$48.34
<i>Biochemist</i>	\$38.95	\$20.82	\$48.01
<i>Atmospheric and Space Scientist</i>	\$32.76	\$12.44	\$42.92
<i>Materials Scientist</i>	\$34.84	\$19.40	\$42.56
<i>Biomedical Engineer</i>	\$29.15	\$18.17	\$34.64

Source: Achieve Texas In Action Magazine (www.achievetexas.org)

STEM— Q & A

1. What is the oldest Marine lab in Texas?
2. What was the number one engineering graduate school for Hispanics in 2005 and 2006?

STEM —Courses in Alief

STEM

1. Gateway to Technology -8th grade for high school credit
2. Introduction to Engineering Design
3. Principles of Engineering
4. Civil Engineering & Architecture
5. Aerospace Engineering



Required Knowledge and Skills

Texas students can focus their high school studies on Science, Technology, Engineering & Mathematics. Preparation for a career in this cluster should start with rigorous academic courses.

Math and science are the most important classes for this cluster. Students in Science, Technology, Engineering & Mathematics programs of study should take four years of advanced math and four years of advanced science.

In math, the recommended courses are Algebra I and II and Geometry, as well as Calculus or Statistics, depending on which career program of study you choose to pursue. In science, the recommended courses are Biology, Chemistry, and Physics. For the fourth science, a number of options are available, including Earth and Space Science, Environmental Systems, and Engineering.

In addition to academic studies, it is recommended that you take career-related electives. These classes give you specialized knowledge and hands-on experience in your chosen program of study.

What if you love technology, but don't have the funds or desire to go to a four-year college? There are plenty of careers in this cluster that require less than a bachelor's degree, particularly technician positions. Some jobs require a two-year associate's degree in engineering, engineering technology, or computer science. Other careers require only a certification you can earn during or after high school.

Source: Achieve Texas In Action Magazine (www.achievetexas.org)

For more information on courses in the STEM cluster in Alief, go to the Achieve Texas Student Career Planner under Students on the Alief homepage (www.aliefisd.net).

Alief STEM

