

## Some Careers You Can Really Dig ...

### REGION RICH IN MINING/GEOLOGICAL ENGINEERING JOBS

Mining and geological engineers are involved in finding, extracting and preparing coal, metallic ores, nonmetallic minerals, and building materials so they can be used by manufacturing and utility companies. Those working in the Gulf Coast region primarily focus on searching for oil and natural gas. Mining and geological engineers are in short supply here and starting salaries are very high. While the demand for natural resources continues to grow, the number of new mining and geological engineering graduates has fallen, making it difficult to replace the current workforce that is retiring.



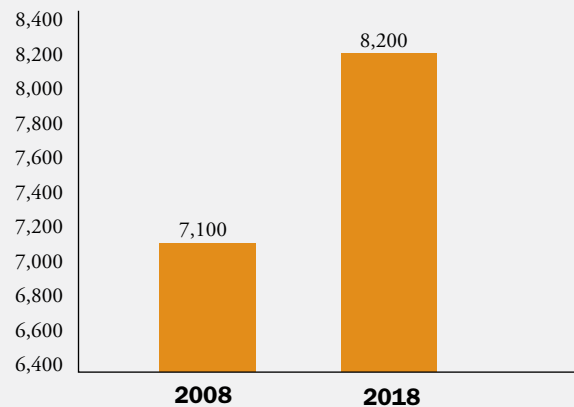
Factors contributing to the shortage:

- Oil bust of the 1980s that left a negative impression of the industry
- A workforce that is approaching retirement age
- Limited number of educational programs

**AN ESTIMATED 8,200 MINING AND GEOLOGICAL ENGINEERS WILL BE WORKING IN THE U.S. BY 2018.**



Mining and Geological Engineers in the U.S.

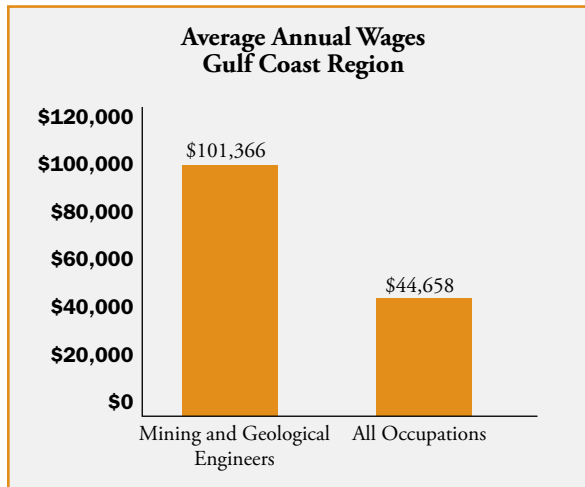


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Latest data available. May 2011.

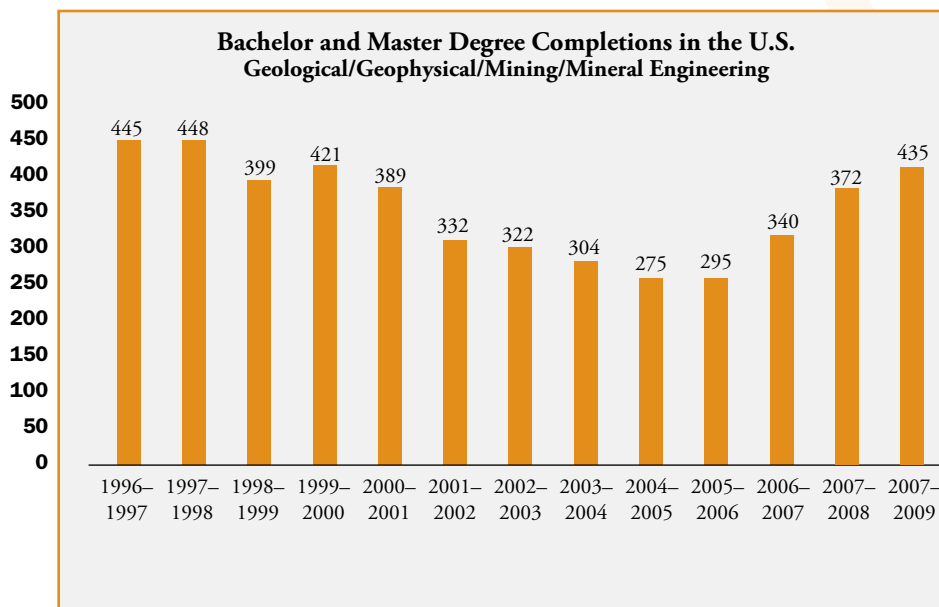
\*Includes the following counties: Austin, Brazoria, Chambers, Colorado, Fort Bend, Galveston, Harris, Liberty, Matagorda, Montgomery, Walker, Waller, and Wharton.

# FOCUS ON MINING/ GEOLOGICAL ENGINEER

## MINING AND GEOLOGICAL ENGINEERS EARN TOP WAGES



## INCREASING GLOBAL DEMAND HAS BUSINESSES STRUGGLING TO FIND QUALIFIED JOB CANDIDATES. THE WORD IS GETTING OUT AND THE NUMBER OF GRADUATES ARE RISING.



Source: National Center for Educational Statistics (NCES)

# FOCUS ON MINING/ GEOLOGICAL ENGINEER

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## **PATHWAY TO A MINING AND GEOLOGICAL ENGINEERING CAREER**

Most mining and geological engineers have at least a bachelor's degree. Those that earn a master's degree are more marketable and they have more employment opportunities and options. Some of the more complex jobs require a graduate degree. Bachelor's degree programs in engineering typically last four years, although many students take between four and five years to complete them and earn their degree. The first two years in a college engineering program are usually spent studying mathematics, basic sciences, introductory engineering, humanities, and social sciences. In the last two years, most courses are in the engineering specialty.



Additional information can be found at the Society for Mining, Metallurgy, and Exploration, Inc.: <http://www.smenet.org>

## **LICENSING INFORMATION**

The Texas Board of Professional Geoscientists is the licensing authority for geoscientists in Texas. <http://www.tbpg.state.tx.us/index.html>

The National Society of Professional Engineers provides information for professional engineer licensure. [www.nspe.org](http://www.nspe.org)

The Texas Board of Professional Engineers regulates and licenses professional engineering in Texas. [www.tbpe.state.tx.us](http://www.tbpe.state.tx.us)



## **START EARLY AND BE PREPARED**

Admission requirements for undergraduate engineering schools include a solid background in mathematics (algebra, geometry and calculus) and science (biology, chemistry and physics), with courses in English, social studies and humanities.

Strive for good grades throughout high school and seek college preparatory and advanced placement programs. Make note of admission application deadlines and take necessary action to apply in time.

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## PREPARING FOR AN ENGINEERING DEGREE \*

9th Grade			
Suggested Coursework			
	English I	World Geography	<b>Career-Related Electives:</b> Technology Systems (Modular Lab Based) Bio-related Technology
	Algebra I	Languages other than English I	
	Biology	Health/PE or Equivalent	
10th Grade			
Suggested Coursework			
	English II	World History	<b>Career-Related Electives:</b> Engineering Principals or Engineering Graphics
	Geometry	Languages other than English II	
	Chemistry	Technology Applications	
11th Grade			
Suggested Coursework			
	English III	United States History	<b>Career-Related Electives:</b> Geology, Meteorology, or Oceanography
	Algebra II	Communication Applications	
	Physics	PE or Equivalent	
12th Grade			
Suggested Coursework			
	English IV	Government/Economics	<b>Career-Related Electives:</b> Research Design and Development or Communication Graphics or Problems and Solutions in Technology or Communication Graphics or Computer Multimedia and Animation
	Calculus	Fine Arts	
	AP Physics		

\*Source: AchieveTexas.org

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## MINING AND GEOLOGICAL ENGINEERING PROGRAMS

### UNIVERSITIES

- Rice University
- Sam Houston State University
- Texas A&M University
- Texas Tech University
- University of Houston
- University of Texas

### MAJOR EMPLOYERS IN THE GULF COAST REGION

- Amerada Hess Corp
- Anadarko Petroleum Corporation
- Apache Corp
- Baker Hughes
- BHP Billiton Petroleum
- Citation Oil & Gas Corp
- ConocoPhillips
- Devon Energy
- El Paso Corporation
- EOG Resources
- ExxonMobil
- Halliburton
- Hilcorp Energy
- Marathon Oil Co.
- Newfield Exploration
- Noble Energy
- Oxy
- Saudi Aramco
- Shell
- Schlumberger



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