



CAREER PATH

# Industrial & Engineering Technology

CAREER CLUSTER

Science, Technology, Engineering and Mathematics

CAREER PATHWAY

Engineering and Technology



## MINING AND GEOLOGICAL ENGINEER

Determine the location and plan the extraction of coal, metallic ores, nonmetallic minerals, and building materials, such as stone and gravel. Work involves conducting preliminary surveys of deposits or undeveloped mines and planning their development; examining deposits or mines to determine whether they can be worked at a profit; making geological and topographical surveys; evolving methods of mining best suited to character, type, and size of deposits; and supervising mining operations.

### Knowledge and Skills Needed

In addition to courses required for high school graduation, essential skills and knowledge needed for a career as a mining and geological engineer or a mining safety engineer are reinforced by taking rigorous and relevant courses, as well as participating in work-based experiences and student organization activities.

(See the Sample Personal Plan of Study for suggested coursework, activities, and knowledge and skills to pursue in preparation of an occupation in this Career Cluster.)

### Education Requirements

Occupation	Percent of Missouri employees aged 25 to 44 in the occupation whose highest level of educational attainment is:		
	High School or Less	Some College	Bachelor Degree or More
Mining and geological engineers, including mining safety engineers	0%	17.6%	79.6%
Engineers	2.5%	16.1%	81.4%
Architecture and engineering	10.3%	31.0%	58.6%

Most Common Educational Level: Bachelor's degree

Note: Be sure to learn whether your occupation has a specific requirement for education or licensing. Apprenticeships are available for more than 240 occupations. Visit [www.oa.doleta.gov/bat.cfm](http://www.oa.doleta.gov/bat.cfm)

### National and State Wage Information

Location	Pay Period	2007		
		Entry*	Median	Experienced**
United States	Hourly	\$27.41	\$35.74	\$45.97
	Yearly	\$57,000	\$74,300	\$95,600
Missouri	Hourly	\$22.56	\$34.13	\$43.00
	Yearly	\$46,900	\$71,000	\$89,400

Based on (\*) lower 25% and (\*\*) upper 25% percentile of wages

### National and State Employment Trends

Mining Engineer	Employment		Percent Change	Job Openings*
	2006	2016		
United States	7,100	7,800	+ 10%	230
Missouri	100	90	N/A	N/A

\*The estimate for Job Openings includes both turnover that results from people who leave the occupation (e.g. quit, retire, death) and new jobs that are created.

### Educational Opportunities

Note: This list may not be all inclusive. For more information about Missouri schools and programs, visit [www.dhe.mo.gov](http://www.dhe.mo.gov)

### Missouri University of Science and Technology

Rolla, MO  
(573) 341-4111  
[www.mst.edu](http://www.mst.edu)



[www.missouriconnections.org](http://www.missouriconnections.org)

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[www.dese.mo.gov](http://www.dese.mo.gov)

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