

Mining Engineering

CAREER PROFILE

What is mining engineering?



Mining engineering is about the safe, efficient, and responsible extraction of natural resources from the earth, including minerals, metals, coal, oil, and gas. Mining engineers are essential for meeting global demands for these raw materials while adhering to ethical and ecological standards. There are several sub-specializations including geotechnical engineering, environmental engineering, mining operations engineering, and mineral processing engineering.

What do mining engineers do?

Mining is a complex and expensive undertaking. Mining engineers work along the full value chain from the exploration of new deposits to the responsible closure of old mines. Specific roles vary with industry, project, and level of expertise. Here are some of the main roles.

- They help conduct geological surveys to identify the quality and quantity of new deposits and the feasibility of new mining operations.
- They design and plan new mining operations including mine layout, optimal extraction process, and safety procedures.
- They manage the drilling and blasting operations needed to extract the resources safely and efficiently.
- They ensure that mining operations comply with environmental regulations and practices and work to minimize the environmental impact of mining activities.
- They plan and oversee the responsible closure of old mines and land reclamation and restoration processes.

How do you become a mining engineer?

As with all engineering fields it is important to take and excel at **science and mathematics** at school. Most mining engineers get a **mining engineering bachelor's degree**. Many specializations require a master's (or higher) degree.

Here are some general tips for choosing a university or college:

- Make sure the program is **fully accredited** locally and/or internationally.
- Investigate the backgrounds and expertise of the **faculty members** in the mining engineering department.
- Assess the **facilities and resources** provided by the school.
- Consider accredited engineering programs offered by **technical or community colleges** as well.

WHAT IS MINING ENGINEERING?



WHAT DO MINING ENGINEERS DO?



TYPICAL EMPLOYERS

Typical employers include large private companies and research organizations:

- BHP Billiton
- BP
- De Beers
- Government regulators
- Mining consultancies
- Geology consultancies



What are the careers prospects for a mining engineer?

Mining engineers are in greatest demand in regions or countries with large and successful mining industries. The nature of the work also means that many jobs are in remote areas far from urban centers. Globally, demand for mining engineers is expected to grow in the coming years, in some regions by up to **16%**. Average annual salaries are about **US\$100,000**.

Meet some mining engineers

Watch the following videos to meet some inspiring mining engineers.

BAILEIGH SIRMAN

In this video interview, Baileigh offers detailed and valuable insights into what it is like to work as a mining engineer.



OLIVIA GALL

Watch Olivia Gall, a mine planning engineer, describe what it is like working as a mining engineer, what skills it requires, and why she loves it so much.



MELANIE STARE

Melanie began her journey to becoming a chief mine engineer later in life. She started out studying architecture but in her second year, the mining bug bit. The rest is history.

