

MINING-RELATED DEGREES

With 41 mining-related degrees, you can find your path to limitless opportunities in this industry!


College of Agriculture, Life & Environmental Sciences Biosystems Analytics and Technology Environmental and Water Resource Economics Environmental Science Natural Resources	College of Engineering Biosystems Engineering Chemical Engineering Civil Engineering Computer Science and Engineering Electrical and Computer Engineering Engineering Management Environmental Engineering Industrial Engineering Materials Science and Engineering Mechanical Engineering Mining Engineering	College of Humanities Interdisciplinary Studies College of Information Science Information Science College of Science Accounting Business Administration Business Economics Business Management Economics Management Information Systems Mei & Emil Zuckerman College of Public Health Public Health College of Social and Behavioral Sciences American Indian Studies Anthropology
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THE UNIVERSITY OF ARIZONA
School of Mining & Mineral Resources
MINING.ARIZONA.EDU

CAREER PATHS IN MINING

Mining Engineer

"I design solutions that safely and efficiently extract valuable minerals from the Earth."



EDUCATIONAL REQUIREMENTS
 Bachelor's degree in Mining Engineering (ME) Engineering, or related fields such as Environmental Engineering, Hydrology, or Geotechnical Engineering

JOB TITLES

- Mining Engineer
- Geological Engineer
- Mine Safety Engineer
- Mineral Processing Engineer
- Rock Mechanics Engineer

AVERAGE STARTING SALARY
\$70,000 - \$90,000

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WHAT DOES A MINING & GEOLOGICAL ENGINEER DO?
 Mining and geological engineers focus on designing safe and efficient mines for extracting gems, minerals and metals. In this role, you help plan and execute mining projects and ensure compliance with civic, environmental and safety regulations. You may work to improve mining processes, develop or implement new technologies, and help manage the impact of mining activities. You'll collaborate with geologists and other specialists to evaluate earth materials and ensure successful resource extraction, providing economic growth and ensuring sustainable mineral resources for the world.

PREPARING FOR A MINING & GEOLOGICAL ENGINEER CAREER
 Choose from four tracks in high-demand fields: mining, metallurgy, environmental protection, and manufacturing. Explore how our world-class faculty, state-of-the-art facilities, and industry connections can help you carve out a successful and impactful career.

LEARN MORE
MGE.ARIZONA.EDU

THE UNIVERSITY OF ARIZONA
School of Mining & Geological Engineering

Geosciences

"I uncover Earth's history and help find the resources that power the future."

AVERAGE STARTING SALARY
\$60,000 - \$85,000

JOB TITLES

- Geomorphologist
- Environmental Geologist
- Exploration Geologist
- Geophysicist

WHAT DOES AN EXPLORATION GEOLOGIST DO?
 Exploration geologists are vital in responsibly identifying mineral resources that are essential for modern life, while balancing environmental and economic considerations. In this role, you'll use geological knowledge and advanced technology to locate and assess valuable minerals and metals, helping to determine the economic feasibility of mining projects. You'll work with engineers, environmental scientists, and economists to integrate geological findings with other expertise from relevant experts, and spend time in the field conducting surveys and collecting samples to evaluate mineral potential.

PREPARING FOR AN EXPLORATION GEOLOGIST CAREER
 Embark on an exciting journey through the dynamic field of Geosciences at the University of Arizona. Our undergraduate program offers a comprehensive curriculum that combines cutting-edge research, hands-on research, and expert faculty guidance.

LEARN MORE
GEO.ARIZONA.EDU


THE UNIVERSITY OF ARIZONA
College of Science
Geosciences

STRIKE GOLD

with a degree in Mining & Geological Engineering

High-Paying Jobs
Exciting Career Paths

LEARN MORE & APPLY TODAY!



THE UNIVERSITY OF ARIZONA
School of Mining & Mineral Resources

Make a MAJOR IMPACT

with a Minor in Sustainable Mineral Resources

- \$2000 Scholarships
- Fulfills Gen Ed Requirements
- Paid Internships
- Choose Your Track & Classes

LEARN MORE & DECLARE TODAY!



THE UNIVERSITY OF ARIZONA
School of Mining & Mineral Resources



THE UNIVERSITY OF ARIZONA
COLLEGE OF ENGINEERING
Mining & Geological Engineering



EXPLORING CAREERS

in the Mining and Minerals Industry



SME Society for Mining, Metallurgy & Exploration

Why Explore a Career in Mining and Mineral Resources?

1 LOVE WHAT YOU DO

Professionals in the minerals industry love their careers. Most say it's more than just a job.

2 MAKE A DIFFERENCE

Your work can positively affect society. Such as working on renewable energy projects that improve lives and the environment, or helping to develop new technologies that improve the way we live.

3 MONEY MATTERS

As one of the highest paying industries, the minerals industry offers a great way to make a difference while earning well.

4 THE PLACES YOU'LL GO

From the tip to the tail, you'll find many great places to work. Mining can take you anywhere, including some of the most beautiful and remote locations in the world.

5 BE A CREATIVE PROBLEM-SOLVER

You'll be required to think outside the box to solve some of the most complex problems in the industry. Your creativity will be rewarded with a sense of accomplishment.

6 CAREER ADVANCEMENT AND JOB SECURITY

As the world's largest and most advanced industry, mining offers a wide range of career opportunities. The industry is constantly growing, and there's always a need for skilled professionals.

7 SAFE AND SOUND

Safety is a priority for all professionals in the industry. You'll be trained to work safely, and there's always a strong emphasis on safety in the workplace.

8 DIVERSITY WELCOME

The minerals industry is a diverse and inclusive workplace. We welcome people from all backgrounds, cultures, and abilities. Our industry is a place where everyone can thrive.

9 VARIETY IS THE SPICE OF WORK

There's always something new to learn in the minerals industry. From the latest technologies to the most advanced equipment, there's always a new challenge waiting for you.

10 TEAM WORK MAKES THE DREAM WORK

Working together is a key part of the minerals industry. You'll be part of a team that's dedicated to achieving the same goal. Your teamwork will be rewarded with a sense of accomplishment.

11 CONTRIBUTIONS THAT COUNT

The minerals industry is a vital part of our society. From the energy we use to the materials we need to build our infrastructure, the minerals industry is everywhere. Your work will make a difference.

LEARN MORE about careers in mining and mineral resources at [MineralsEducationCoalition.org/careers](https://www.MineralsEducationCoalition.org/careers)



RECLAMATION

Mine reclamation is the process of restoring mined land to a natural or economically viable state. Mine reclamation minimizes and moderates the effects of mining on the environment during and after the mining process.

Mining begins with the end in mind. In this regard, the preparation and planning of mine reclamation activities begin prior to a mine being permitted and before mining is started. Mine reclamation creates useful landscapes that meet a variety of needs. In the U.S., and many other countries, mine reclamation is a highly regulated part of modern mining practices.

Reclamation activities include regulating active mines, restoring lands affected by surface and underground mining and abandoned mines (pre-mining and post-mining), and providing resources for technical assistance, training and technology development. Together, state, federal and local government agencies regulate the environmental standards that mine must follow while operating, and activate when restoring mined land, in order to minimize environmental impact.

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Photo courtesy of Friends of Coal

Effective land reclamation requires monitoring of stable erosion and restoration of productive ecosystems.

www.MineralsEducationCoalition.org

ENVIRONMENTAL ENGINEER

Environmental Engineers who work in the mining industry are designed, and often certified, professionals who apply math, science and engineering principles to the design, construction and operation of environmental and efficient systems to reduce mine site. They are trained in soil science, toxicology, hydrology, geology, chemistry, forestry, agriculture or land-use planning to ensure Earth's ecological systems are protected. They keep mine managers informed of new laws and regulations that can affect the mine's operation and restoration alternatives. They monitor the land disturbance as well as soil, surface and groundwater quality of the mine to meet or exceed local, state and federal standards.

Environmental Engineers working in the mining industry can work outdoors, taking measurements and samples, or indoors, working from a computer. They may also work in a laboratory setting.

For more information on the importance of mine reclamation in everyday life, visit www.MineralsEducationCoalition.org

MINING

Mining is the extraction of valuable minerals and materials from the Earth to supply humans with the things we want and need. Mining materials include metals, industrial minerals, aggregates and energy resources (coal, uranium, oil, gas, and biomass). Mining is the process of extracting these materials from the ground and processing them into products we use every day.

Mining of stone and metal has been done since prehistoric times. The modern mining process involves prospecting for ore bodies, analyzing the potential of a proposed mine, and then developing the mine. Mining is a complex process that involves many different stages, from exploration to production. Mining Engineers must understand the geology, geophysics, and geotechnical aspects of mining. They also need to understand the environmental and social impacts of mining. Mining Engineers must be able to design and construct mines that are safe, efficient, and environmentally sound.

Photo courtesy of MEC

Subsurface mining involves the use of underground tunnels to access mineral deposits. This type of mining is used for a variety of minerals, including coal, metals, and industrial minerals. Subsurface mining is a complex process that involves many different stages, from exploration to production. Mining Engineers must understand the geology, geophysics, and geotechnical aspects of mining. They also need to understand the environmental and social impacts of mining. Mining Engineers must be able to design and construct mines that are safe, efficient, and environmentally sound.

www.MineralsEducationCoalition.org

MINING ENGINEER

Mining Engineers design and implement plans that ensure the safe and efficient development of mineral resources. They design mining processes that are used to locate, extract, and transport mineral resources. Mining Engineers must understand the geology, geophysics, and geotechnical aspects of mining. They also need to understand the environmental and social impacts of mining. Mining Engineers must be able to design and construct mines that are safe, efficient, and environmentally sound.

Photo courtesy of MEC

Mining Engineers often use models of the mine to determine how the mine will be developed. They use these models to design the mine and to monitor the mine's performance. Mining Engineers must be able to design and construct mines that are safe, efficient, and environmentally sound.

www.MineralsEducationCoalition.org

EXPLORATION

In the mining industry, exploration is a term that describes the process of searching for viable deposits of valuable mineral resources. Using geologic maps, computer modeling, the knowledge of how ore deposits are formed and other sources, Exploration Geologists identify locations that are likely to contain valuable ore deposits.

Geologic mapping involves the collection of data on the geology of an area. This data is used to create a geologic map that shows the location and distribution of mineral resources. Exploration Geologists use this information to identify potential ore deposits. They also use this information to design the mine and to monitor the mine's performance. Exploration Geologists must be able to design and construct mines that are safe, efficient, and environmentally sound.

Photo courtesy of MEC

In mining, one sampling device Exploration Geologists use to explore the Earth's crust is a drill core. This is a sample of the rock that has been drilled from the ground. It is used to determine the composition of the rock and to identify potential ore deposits. Exploration Geologists must be able to design and construct mines that are safe, efficient, and environmentally sound.

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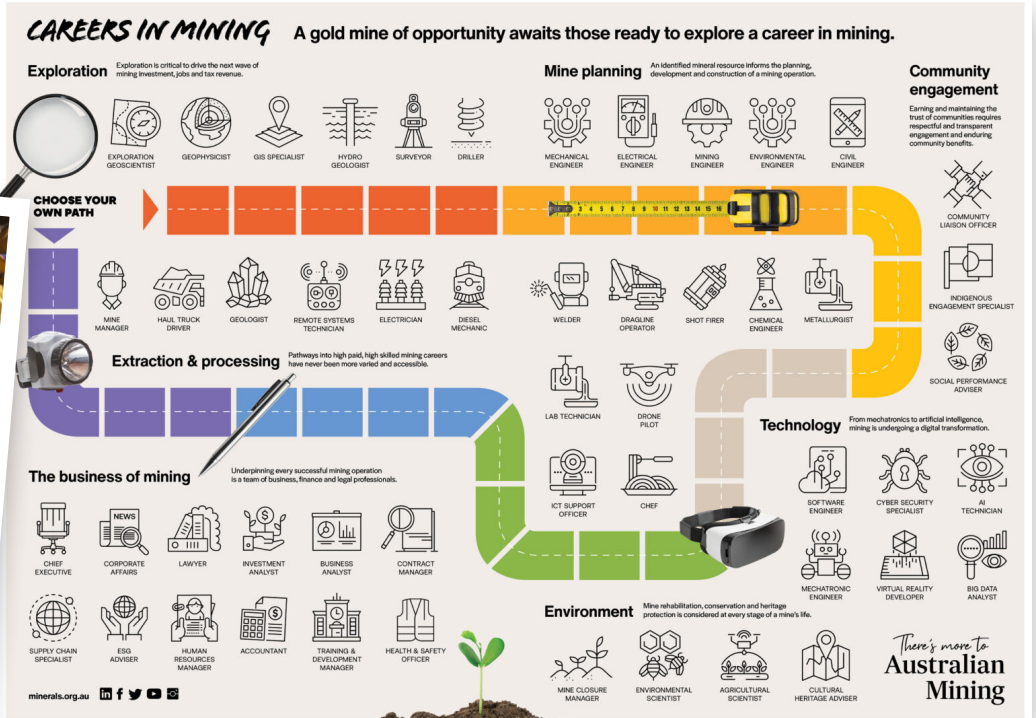
EXPLORATION GEOLOGIST

Exploration Geologists combine the knowledge of how mineral deposits are formed with the physical processes that have affected them since they were created to determine the location and distribution of mineral resources. They use this information to identify potential ore deposits. They also use this information to design the mine and to monitor the mine's performance. Exploration Geologists must be able to design and construct mines that are safe, efficient, and environmentally sound.

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There's more to
Australian Mining