Mining Engineer

Job Summary
Mining engineers typically design and develop mines to sustainably extract raw elements that are key ingredients to all industries. Some mining engineers work with geoscientists and metallurgical engineers to find and evaluate ore deposits. Other mining engineers develop new equipment or direct mineral-processing operations to separate minerals from dirt, rock, and other materials. Many work where mining operations are located, such as mineral mines or sand-and-gravel quarries, in remote areas or near cities and towns. Others work in offices or onsite for extraction companies or engineering services firms. Mining engineers are stewards of the earth as they responsibly supply our society with the materials it needs.

Undergraduate
Geoscience or engineering professional society conference (e.g. Society of Mining Metallurgy, and Exploration (SME))
Clubs, student government, or professional societies
Hone skills through public speaking or science communication courses or conference presentations
Events, activities, and technical sessions or short courses at professional society conference
Volunteer with local K-12 organizations (Scouts, 4H) to promote mining engineering.
For profit organization or company, research institution, or federal agency.
First Aid/ AED/CPR training
MSHA certification
Fundamentals of Engineering exam (administered by the National Council of Examiners for Engineering and Surveying (NCEES)) if considering licensure
Society for Mining, Metallurgy and Exploration (SME) scholarships for undergraduates, Prospectors & Developers Association of Canada (PDAC) scholarships and prizes
Degree in mining engineering or geological engineering or a related degree in civil or environmental engineering or geosciences
Course work in math, chemistry, physics, engineering, surveying, applied geology, and courses as required by program
Field experiences
Research, capstone project and/or instrument experiences
Write a senior thesis

Graduate/Master’s
Departmental committee, campus club, geoscience or engineering professional society (e.g. SME)
Present research at conference (e.g. SME)
Publish research
Fundamentals of Engineering exam or Professional Engineering exam after meeting work experience requirements; also administered by NCEES
SME scholarships, PDAC geoscience award
Degree in mining or geological engineering or geosciences
Master’s research project or independent study project may be required in addition to coursework
Coursework in advanced math, physics, engineering, etc. may be required
Digital technology research and development
Public speaking or science communication courses
Write a thesis or report

Ph.D./Post-doc
Develop interpersonal skills
Present complex scientific concepts to nontechnical audiences
Dissertation topic(s) related to the field
Coursework in advanced math, engineering and computation is required.
Research includes the advancement of digital technologies into the mining industry, as well as improving the safety and efficiency of the industry.
Write a dissertation and present at academic and professional conferences

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