

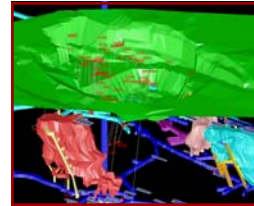
faq: what is the mine operations specialization?

You can choose to tailor your academic program to focus on engineering skills essential for the design, development, operation, and management of mines and quarries. Whether your interests lie in metals, industrial minerals, coal, or construction aggregates, the program prepares graduate engineers for exciting careers in these fields by providing 13 units of specialized courses in mine planning, rock excavation, mine valuation, surface and underground mine design, and mine equipment technology.



Mine Operations – “I had no idea...”

When people see how much sophisticated technology is involved in a modern mining operation, they nearly always say “I had no idea...”. The extraction of mineral resources bears no resemblance to the historical photos you see in museums. A typical open pit copper mine costs well over \$1 billion dollars to develop and incorporates elements from almost every engineering discipline and basic scientific field. Modern mining equipment represents some of the largest and most sophisticated machines ever manufactured for commercial use. The drills, shovels, trucks, and underground excavators employed in these mines rely on computerized systems that control all facets of their operation. For example, equipment in surface mines utilize global positioning satellites to track their every move, where information is continuously transmitted to a central computerized dispatch system that insures all the equipment in the mine is working together in a optimal, cost efficient manner.



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The development of a mineral deposit is one of the most challenging activities an engineer will ever face. While attempting to maximize economic return, mining engineers have the ethical and social responsibility to find solutions to mitigate any adverse impacts to the environment and neighboring communities that may be associated with these activities. Mining engineers need to be well educated in a broad spectrum of engineering and scientific topics from electrical circuits and information technology to hydraulics and dynamics. Students who elect the mine operations track are in high demand by mining and resource companies such as Phelps Dodge, Newmont, Barrick, Rio Tinto, Schlumberger, Consol, and Vulcan Materials. These students also have an opportunity to pursue careers and advanced degrees in mine finance, business management, resource law, public and occupational health, and a wide range of entrepreneurial endeavors.

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