

# Mining Engineering

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## College of Engineering

The programs leading to the degrees of Master of Science in Mining Engineering, Master of Mining Engineering (\* suspension pending) and Doctor of Philosophy are offered through the Department of Mining Engineering. The objectives of these programs are to provide an advanced level of applied science for use in the mining industry and to offer specified topics for research specialization.

The Master of Science in Mining Engineering is a research-oriented degree appropriate for a career in problem solving, research, or technology development.

For the Master of Science in Mining Engineering, 24 credit hours of course work plus an acceptable thesis (Plan A) or 30 credits of course work and a report on one or more research topics (Plan B) are required to fulfill program requirements. Plan B Master of Science degrees will be reserved normally for students who have already demonstrated their ability to conduct and report on independent research.

The Doctor of Philosophy is the terminal degree in the subject and is normally required for a career in teaching and research.

### **Admission Requirements**

Enrollment in the Master of Science degree program is open to qualified applicants with an undergraduate degree in mining engineering or other engineering and science fields. A minimum cumulative grade point average of 2.8/4.0 from an accredited undergraduate program is required. Persons with undergraduate degrees in fields other than mining engineering are required to satisfy deficiencies in undergraduate mining engineering courses.

Applicants for admission must have a combined score on the verbal and quantitative portions of the Graduate Record Examination (GRE) in excess of 300. Scores on the analytical portion are also considered. Foreign applicants whose native language is other than English must take the Test of English as a Foreign Language (TOEFL) and achieve a score of at least 80 (internet based test) or 230 (computer based test) or (550 paper based test) is required before they can be admitted. Alternatively candidates should take the International English Language Testing System (IELTS) test and achieve a score of at least 6.5.

In addition to satisfying general Graduate School and College of Engineering admissions requirements, applicants for admission to the Master of Science and Ph.D. degree programs in Mining Engineering must have been awarded the Bachelor of Science degree prior to admission to the graduate degree status. Normally, it is expected that applicants will have graduated from an engineering program accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET). For applicants from non-U.S. universities, from related but non-engineering disciplines, and from institutions that do not have accredited engineering programs, an assessment will be made of the comparability of educational background to that prescribed and appropriate remedial course work established as a provision for admission.

The Ph.D. degree has no formal course requirements. Students need to complete a minimum of 36 credits of graduate level courses while preparing for the written and oral qualifying examinations. Students who hold a Master of Science degree are typically given credit for up to 18 credit hours of the 36 hour requirement.

Current research areas include the following: rock mechanics and ground control, operations research, mine ventilation, underground construction, surface mining and reclamation, explosive and blasting, mine environmental engineering, mine power systems, mineral and coal processing, extractive metallurgy, data management and mineral economics. In addition to the graduate courses in mining engineering, graduate courses in civil engineering and other disciplines may be used to satisfy degree requirements providing they are appropriate to the student's program of study.

Additional information about the graduate program in mining engineering can be obtained by writing the Director of Graduate Studies, Department of Mining Engineering.

## **Graduate Courses**

MNG 511	Mine Power System Design	(3)
MNG 531	Advanced Blast Design And Technology	(3)
MNG 535	Environmental Control System Design And Reclamation (Same As BAE 535)	(3)
MNG 541	Computer Design Of Mine Ventilation Systems	(3)
MNG 551	Rock Mechanics	(4)
MNG 552	Ground Control Software And Analysis	(3)
MNG 561	Mine Construction Engineering I (Same As MFS 563)	(3)
MNG 575	Coal Preparation Design	(3)
MNG 580	Mineral Processing Plant Design	(3)
MNG 591	Mine Design Project I	(1)
MNG 592	Mine Design Project II	(3)
MNG 599	Topic In Mining Engineering (Subtitle Required)	(2-3)
MNG 611	Mine Power System Protection	(3)
MNG 621	Instrumentation For Blasting And Blast Mitigation	(3)
MNG 641	Advanced Mine Ventilation	(3)
MNG 690	Advanced Mineral Beneficiation Engineering	(3)
MNG 691	Simulation Of Mineral Processing Circuits	(3)
MNG 699	Topics In Mining Engineering (Subtitle Required)	(3)
MNG 748	Master's Thesis Research	(0)
MNG 767	Dissertation Residency Credit	(2)
MNG 768	Residence Credit For The Master's Degree	(1-6)
MNG 771	Seminar In Mining Engineering	(1)
MNG 780	Special Problems In Mining Engineering	(1-6)
MNG 790	Special Research Problems In Mining Engineering	(1-9)