Mining Engineering

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)