



THE UNIVERSITY
OF ARIZONA.

Arizona's First University.

Department of Mining & Geological



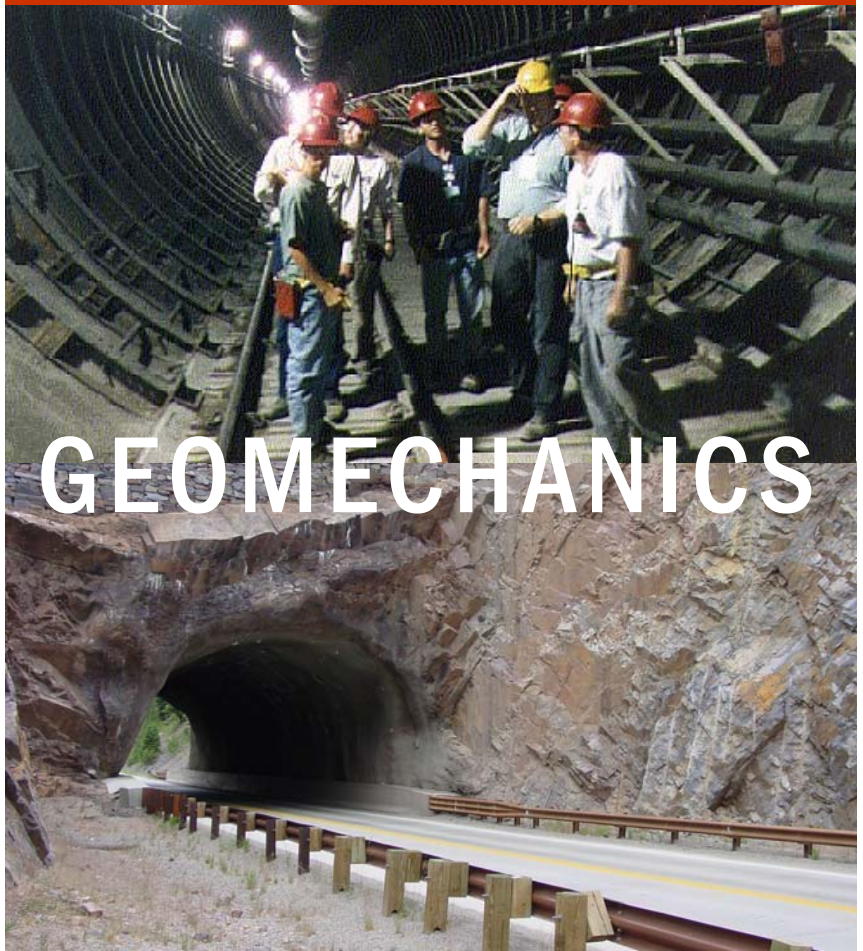
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www.mge.arizona.edu

EXPAND YOUR CAREER



GEOMECHANICS

ONLINE GRADUATE CERTIFICATE PROGRAM

15 UNITS



Graduate Certificate in **GEOMECHANICS**

Department of Mining & Geological Engineering



Contact: John Kemeny
Kemeny@email.arizona.edu

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WHAT IS THE CERTIFICATE PROGRAM?

The certificate programs are intended for working professionals changing their duties within companies or those who need a stronger background in a particular segment of the industry. We have created three certificate programs. Each requires 15 units of graduate coursework with a grade of B or better and all courses are available via distance. Each course is the same as offered to residential MS and Ph.D. students, taught by professional faculty members. Upon successful completion of the program, the units may transfer into a Master of Engineering degree.

Enrollment is limited to graduates of accredited engineering bachelors program and other cognate degrees (i.e., biology, chemistry, geology, industrial hygiene, physics, MIS, etc.) with a 3.0 GPA or higher. Applicants must demonstrate that they have the necessary prerequisites completed for the courses in the certificate program. To be admitted to this certificate program, candidates should have two years of professional experience, preferably in a field related to the specific option selected for study.

HOW TO APPLY

Applicants must submit the following by the appropriate deadline:

Application, resume, transcript. Must have 3.0 undergraduate GPA in relevant degree. TOEFL or equivalent for non-English speakers.

December 1st for spring semester
July 1st for fall semester

ADMISSIONS

www.mge.arizona.edu/distance_program/index.php

COST In-State **\$2,078.50 per 3 unit course**
Out-of-State **\$2,492.50 per 3 unit course**

If your company has a presence in Arizona, you qualify for in-state fees.

WHY STUDY GEOMECHANICS?

A key element of safety in any mine, whether it is surface or underground, is the stability of the rock structure in which the mine is operating. A mine is likened to a factory that is always under construction. As miners work to remove the earth containing mineralized ores the stresses in the rock and hence stability of the mine itself is continually changing. These changes can be rapid and difficult to detect because rock masses contain faults, fractures, joints and other anomalies internal to the rock. Rock mechanics is the science dealing with the design of structures in rock. Upon completion of the program, the graduate will be better prepared to understand complex issue in rock mass behaviors.

REQUIRED COURSES

(12 units)

MNE 527	Geomechanics (3 units)
MNE 580	Rock Fracture Mechanics (3 units)
MNE 547	Underground Construction Geomechanics (3 units)
MNE 515	Rock Excavation (3 units)

ELECTIVE COURSES

(3 units)

Students can take an elective course with the approval of the program advisor.

CE 540	Soils Foundation Engineering (3 units)
CE 541	Earth Structures (3 units)
MNE506A	Mine Ventilation (2 units)
MNE 909	Project (1-3 units)



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