

Mining Engineering



School of Mineral Engineering
Department of Mining and Geological Engineering
(907) 474-7388
www.uaf.edu/sme/MinEng.html
Degrees: B.S., M.S.
Minimum Requirements for Degrees: B.S.: 132 credits; M.S.: 31-37;
E.M.: thesis and 5 years of experience

The mining engineering program emphasizes engineering as it applies to the exploration and development of mineral resources and upon the economics of the business of mining. The program offers specialization in exploration, mining or mineral beneficiation.

Students are prepared for job opportunities with mining and construction companies, consulting and research firms, equipment manufacturers, investment and commodity firms in the private sector, as well as with state and federal agencies.

Mining engineers may aspire to, and achieve, the highest positions in the industry: operating or engineering management, government agency director or entrepreneur. Starting salaries are among the highest in the engineering profession.

Students may initiate their mining engineering program in Anchorage and transfer to Fairbanks upon completion of their freshman or sophomore year. Anchorage students intending to transfer to Fairbanks should be in communication with UAF faculty of the mining engineering department.

Candidates for the B.S. degree in mining engineering must take a comprehensive examination in their general field (completion of the State of Alaska Fundamentals of Engineering examination will satisfy this requirement). The State of Alaska Fundamentals of Engineering is a first step toward registration as professional engineers.

The graduate program leads to the M.S. degree in mining engineering.

UNDERGRADUATE PROGRAM

MAJOR

Mining Engineering—B.S. Degree

1. Complete the general university requirements (page 28). (As part of the core curriculum requirements, complete: CHEM 105X, CHEM 106X, LS 101X and MATH 200X.)
2. Complete the B.S. degree requirements (page 34). (As part of the B.S. degree requirements, complete: MATH 201X, PHYS 211X and PHYS 212X.)

3. Complete the following program (major) requirements:*

ES 201—Computer Techniques	3
ES 208—Mechanics	4
ES 307—Elements of Electrical Engineering	3
ES 331—Mechanics of Materials	3
ES 341—Fluid Mechanics	4
ES 346—Basic Thermodynamics	3
GE 261—General Geology for Engineers	3
GEOS 262—Rocks and Minerals	3
GEOS 332—Ore Deposits and Structure	3
MIN 103—Introduction to Mining Engineering	1
MIN 104—Mining Safety and Operations Lab	1
MIN 106—Mining Operations I	1
MIN 202—Mine Surveying	3
MIN 206—Mining Operations II	1
MIN 301—Mine Plant Design	3
MIN 302—Underground Mine Environmental Engineering	3
MIN 313—Introduction to Mineral Preparation	3
MIN 370—Rock Mechanics	3
MIN 407W—Mine Reclamation and Environmental Management	2
MIN 408O—Mineral Valuation and Economics	3
MIN 409—Operations Research and Computer Applications in Mineral Industry	3
MIN 443—Principles and Applications of Industrial Explosives	3
MIN 454—Underground Mining Methods	3
MIN 484—Surface Mining Methods II	2
MIN 490W—Mining Design Project	3
MIN 485—Mining Engineering Exit Exam	0

4. Complete the following program (major) requirements:

MATH 202X—Calculus	4
MATH 302—Differential Equations	3

5. Complete 6 credits* from the following recommended technical electives:**

GE 440—Slope Stability	3
MIN 401—Mine Site Field Trip	2
MIN 447—Placer Mining	3
MIN 472—Ground Control	3
MIN 481—Computer Aided Mine Design I	3
MIN 482—Computer Aided Mine Design II	3
Approved technical electives	3-6

6. Minimum credits required

132

** Student must earn a C grade or better in each course.*
*** Students must plan their elective courses in consultation with their mining engineering faculty advisor. Technical electives are selected from the list of the approved technical electives for mining engineering program and other programs course listing. All elective courses must be approved by the department head.*



University of Alaska Fairbanks

Admissions • P.O. Box 757480 • Fairbanks, AK 99775-7480 • admissions@uaf.edu • www.uaf.edu

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GRADUATE PROGRAM

Mining Engineering—M.S. Degree

1. Complete the general university requirements (page 43).
2. Complete the master's degree requirements (page 46).
3. Complete the following:
 - MIN 688—Graduate Seminar I 1
 - MIN 689—Graduate Seminar II 1
4. Complete the thesis or non-thesis requirements:

Thesis

- a. Complete the following:
 - MIN 600-level courses 12
 - Technical electives 11
 - MIN 699—Thesis 6
- b. Minimum credits required 31

Non-Thesis

- a. Complete the following:
 - MIN courses 12
 - Technical electives 17
 - MIN 698—Research/Project 6
- b. Minimum credits required 37

See Engineer of Mines.



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