Bachelor of Science in Mining Engineering
2021 - 2022
Revised 02/26/2021

PREREQUISITE (COURSE MUST BE COMPLETED PRIOR TO ENROLLMENT)

Bachelor of Science in Mining Engineering

**Fall Semester**

- MA 1160/1161 CALCULUS w/ TECH I (4/5 CREDITS) F, S, Su
- PH 1100 PHYSICS LAB I (1 CREDIT) F, S, Su
- CH 1150 UNIV. CHEMISTRY I (3 CREDITS) F, S, Su
- ENG 1000 INTRO TO GEOSCIENCE (1 CREDIT) F
- GE 1100 DIGITAL GEOGRAPHY (1 CREDIT) F
- UN 1015 COMPOSITION (3 CREDITS) F, S, Su
- *UN 1025 GLOBAL ISSUES (3 CREDITS) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su

**Spring Semester**

- MA 2160 CALCULUS w/ TECH II (4 CREDITS) F, S, Su
- PH 2100 UNIV. PHYSICS II-MECH (3 CREDITS) F, S, Su
- CH 1151 UNIV. CHEMISTRY II (1 CREDIT) F, S, Su
- ENG 1101 or ENG 1102 & ENG 1101 ENGR. ANALYSIS & PROB. SOLVING (3 CREDITS) F, S, Su
- ENG 1002 (C) or pass Spac. Vis. test
- MA 1160/1161 CALCULUS w/ TECH I (4/5 CREDITS) F, S, Su

**Year 1**

**Fall**

- MA 1160/1161 CALCULUS w/ TECH I (4/5 CREDITS) F, S, Su
- PH 1100 PHYSICS LAB I (1 CREDIT) F, S, Su
- CH 1150 UNIV. CHEMISTRY I (3 CREDITS) F, S, Su
- ENG 1100 INTRO TO GEOSCIENCE (1 CREDIT) F
- GE 1100 DIGITAL GEOGRAPHY (1 CREDIT) F
- UN 1015 COMPOSITION (3 CREDITS) F, S, Su
- *UN 1025 GLOBAL ISSUES (3 CREDITS) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su

**Spring**

- MA 2160 CALCULUS w/ TECH II (4 CREDITS) F, S, Su
- PH 2100 UNIV. PHYSICS II-MECH (3 CREDITS) F, S, Su
- CH 1151 UNIV. CHEMISTRY II (1 CREDIT) F, S, Su
- ENG 1101 or ENG 1102 & ENG 1101 ENGR. ANALYSIS & PROB. SOLVING (3 CREDITS) F, S, Su
- ENG 1000 INTRO TO GEOSCIENCE (1 CREDIT) F
- GE 1100 DIGITAL GEOGRAPHY (1 CREDIT) F
- UN 1015 COMPOSITION (3 CREDITS) F, S, Su
- *UN 1025 GLOBAL ISSUES (3 CREDITS) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su

**Year 2**

**Fall**

- *MA 3230 ELEM LINEAR ALGEBRA (2 CREDITS) F, S
- GE 2300 MINERAL SCIENCE (5 CREDITS) F
- GE 2020 INTRO MIN ENGR. (2 CREDITS) F
- CMZ 2000 INTRO MINERALS & MATERIALS (3 CREDITS) F, S, Su
- ENG 1102 or Instructor Permission: Eng 1102 or Instructor Permission
- MA 2160 CALCULUS w/ TECH II (4 CREDITS) F, S, Su

**Spring**

- MA 3160 MULTIVARIABLE CALCULUS w/ TECH (4 CREDITS) F, S, Su
- ENG 2120 THERMO / FLUIDS (4 CREDITS) F, S
- GE 2000 ENGR. MODELING & DESIGN (3 CREDITS) F, S, Su
- MA 3230 DIFFERENTIAL EQ (2 CREDITS) F, S, Su
- GE 2000 ENGR. MODELING & DESIGN (3 CREDITS) F, S, Su
- MA 3160 MULTIVARIABLE CALCULUS w/ TECH (4 CREDITS) F, S, Su

**Year 3**

**Fall**

- MA 3710 ENG STATISTICS (3 CREDITS) F, S
- MA 3710 ENG STATISTICS (3 CREDITS) F, S
- MA 3160 MULTIVARIABLE CALCULUS w/ TECH (4 CREDITS) F, S, Su
- MA 3230 DIFFERENTIAL EQ (2 CREDITS) F, S, Su
- MA 2160 CALCULUS w/ TECH II (4 CREDITS) F, S, Su
- GE 3410 MINING SAFETY SYSTEMS (1 CREDIT) F

**Spring**

- MA 3160 MULTIVARIABLE CALCULUS w/ TECH (4 CREDITS) F, S, Su
- GE 3870 RESOURCE & RESERVE ESTIMATION (3 CREDITS) S
- GE 3410 MINING SAFETY SYSTEMS (1 CREDIT) F
- MA 3160 MULTIVARIABLE CALCULUS w/ TECH (4 CREDITS) F, S, Su
- GE 3410 MINING SAFETY SYSTEMS (1 CREDIT) F
- MA 3160 MULTIVARIABLE CALCULUS w/ TECH (4 CREDITS) F, S, Su

**Year 4**

**Fall**

- MA 3710 ENG STATISTICS (3 CREDITS) F, S
- MA 3710 ENG STATISTICS (3 CREDITS) F, S
- MA 3160 MULTIVARIABLE CALCULUS w/ TECH (4 CREDITS) F, S, Su
- MA 3160 MULTIVARIABLE CALCULUS w/ TECH (4 CREDITS) F, S, Su
- ENG 2120 THERMO / FLUIDS (4 CREDITS) F, S
- GE 4910 Capstone Experience (3 CREDITS) F, S

**Spring**

- GE 4220 MINE SYSTEMS AND THE ENVIRONMENT (3 CREDITS) S
- GE 4220 MINE SYSTEMS AND THE ENVIRONMENT (3 CREDITS) S
- MA 3160 MULTIVARIABLE CALCULUS w/ TECH (4 CREDITS) F, S, Su
- MA 3160 MULTIVARIABLE CALCULUS w/ TECH (4 CREDITS) F, S, Su
- GE 4910 Capstone Experience (3 CREDITS) F, S
- GE 4910 Capstone Experience (3 CREDITS) F, S

**Sophomore Core Electives May Be Taken In Either Order In The Second Year.**

**Freshman Core May Be Taken In Either Order In The First Year.**

17/18 CREDITS
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su

16 CREDITS
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su

15 CREDITS
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su

17 CREDITS
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su

17 CREDITS
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su

15 CREDITS
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su

15 CREDITS
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su
- Co-cur Unit (0.5 UNIT) F, S, Su

This is not an official list of degree requirements. Adjustments may be required due to curriculum changes.
BS in Mining Engineering 2021-2022
(Minimum of 127 Credits)

Mining Engineering Advanced Technical Electives
Nine credits of Mining Engineering Electives are required, see list in the table below. Prerequisites not normally required must be satisfied by free electives or other courses not specifically listed. With approval of Mining Engineering ABET Coordinator, Mining Engineering electives may be substituted with Independent Mining Engineering Research and/or Cooperative Lab.

Enterprise Concentration (12 Credits)
With permission of Mining Engineering ABET Coordinator, enterprise may substitute 6 credits of interdisciplinary project for GE 4900 and GE 4910; 3 credits of required communication, teaming or business must be double counted as Distribution (HASS) credits; and 3 credits of enterprise instructional modules must be substituted for free electives.

Enterprise Minor: Follow concentration, and take 6 additional credits beyond required degree as per minor requirements.

Second Degree Policy: Candidates for a second degree must meet all the coursework requirements for the major in the second degree with a minimum of 25% of the credit hours required for the degree,

Mining Engineering Advanced Technical Electives

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Offered</th>
<th>Prequisite(s)</th>
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<tbody>
<tr>
<td>GE 4504 Air Quality Engineering and Science</td>
<td>FA</td>
<td>ENVE 3501 or ENVE 3503</td>
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<tr>
<td>GE 4610 Formation Evaluation. &amp; Petroleum Engineering</td>
<td></td>
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<tr>
<td>GE 3850 Geohydrology</td>
<td>FA, SP</td>
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<tr>
<td>GE 3200 Geochemistry</td>
<td>SP</td>
<td>CH 1150 and CH 115</td>
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<tr>
<td>GE 4800 Groundwater Engineering</td>
<td>SP</td>
<td>GE 3850</td>
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<tr>
<td>GE 4860 Computer Methods in Geomechanics</td>
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<tr>
<td>GE 4680 Operations Research for Mining Engineers</td>
<td>On Demand</td>
<td>GE 2020 or GE 2320</td>
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<tr>
<td>CM 3830 Mineral Processing and Extraction Lab</td>
<td>SP</td>
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</tr>
<tr>
<td>CM 4020 Undergraduate Research in Mineral Processing Engineering</td>
<td>FA, SP</td>
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<tr>
<td>CM 4505 Particle Technology</td>
<td>SP</td>
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<tr>
<td>CE 3620 Water Resources Engineering</td>
<td>FA, SP</td>
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<tr>
<td>CE 4511 Solid and Hazardous Waste Engineering</td>
<td>SP</td>
<td>ENVE 3501 or CEE 3501 or ENVE 3503 or CEE 3503</td>
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<tr>
<td>CE 4820 Foundation Engineering</td>
<td>FA</td>
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<tr>
<td>CE 4830 Geosynthetics Engineering</td>
<td>SP</td>
<td>CE 3201, CE 3810</td>
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<tr>
<td>CE 4850 Rock Engineering for Civil Engineering</td>
<td>SP alt year</td>
<td>CE 3810</td>
</tr>
</tbody>
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NOTE: Advisors may also use special Topics Courses focusing predominantly on applications of engineering to geological engineering systems/projects with prior approval. Additionally, with prior approval from advisor, student may choose other technical electives. Many appropriate senior-level engineering courses are offered in Civil & Environmental Engineering on topics related to those listed above.