B.S. in Mining Engineering

Catalog Year 2024-25

Below is the *advised sequence* of courses for this degree program as of 10/26/2023.

Official degree requirements and course prerequisites are found in the University General Catalog; prerequisites are subject to change.

1 ⁴ Semester MATH 122A/B or MATH 125 Calculus 1 with Applications 5/3 Appropriate Math Placement *CHEM 151 Chemical Thinking 1 or CHEM 161/163 4 Appropriate Math Placement FNGR 101 or ENGL 107 or 109H First-Year Composition 3	Course Number and Title	Units	Prerequisites/Enrollment Requirements
MATH 122 A/B or MATH 125 Calculus I with Applications 5/3 Appropriate Math Placement *CHEM 151 Chemical Thinking I or CHEM 161/163 4 Appropriate Math Placement ENGR 102 A/B Introduction to Engineering or ENGR 102 3 ENGR 102 A/B Introduction to Engineering or ENGR 102 Semester Total 16/14 Pre- or Co-requisite of MATH 112 ENGR 102 B: Pre- or Co-requisite of MATH 112 or higher; First-Year Status; College of Engineering Major UNIV 101 Intro to the General Education Experience 1 Cereater 16/14 2 ^{ord} Semester 16/14 Cereater 1 Semester Total 16/14 2 ^{ord} Semester 1 MATH 129 Calculus II 3 MATH 122 B or 125 with C or better FOLE 102 or 108 First-Year Composition 3 ENGL 101 or 107 *PITYS 141 Introductory Mechanics or PITYS 16111 4 Placement Level General Education: Exploring Perspectives (Artist) 3 Recommend: MATH 129 or 125 or Appropriate Math Placement Level GEOS 251 Physical Geology 4 MATH 129 with C or better MATH 1220 with C or better MNE 205 Introduction to Mining Engineering 3 Recommend: MATH 120 or 126 with C or better MNE 205 Introduction to Mining E	1 st Semester		
*CHEM 151 Chemical Thinking I or CHEM 161/163 4 Appropriate Math Placement ENGR. 101 or ENGL. 107 or 109H First-Year Composition 3 ENGR 102A/B Introduction to Engineering or ENGR 102 3 ENGR 102A/B Introduction to Engineering or ENGR 102 UNIV 101 Intro to the General Education Experience 1 Engineering Major 16/14 2 ^{od} Semester 16/14 Engineering Major 16/14 2 ^{od} Semester 1 For Body. CHEM 151 or 141/143 or 16/14 or MSE 110 Solid State Chemistry 4 ENGL 101 or 107 *PHYS 141 Introductory Mechanics or PHYS 161H 4 Placement Level MATH 122 or 125 or Appropriate Math Placement General Education: Exploring Perspectives (Artist) 3 ENGL 101 or 107 * *PHYS 141 Introductory Mechanics or PHYS 161H 4 Placement Level MATH 129 or 125 or Appropriate Math Placement General Education: Exploring Perspectives (Artist) 3 3 ENGL 101 or 107 *PHYS 141 Introductory Mechanics or PHYS 161H 4 Placement Level MATH 129 GEOS 251 Physical Geology 4 MATH 129 S S ME 205 Introduction to Mining Engineering 3 Recommend: MATH 120R or higher MFE 297A, Underground Mine Safety (offered the week pr	MATH 122A/B or MATH 125 Calculus I with Applications	5/3	Appropriate Math Placement
ENGL 101 or ENGL 107 or 109H First-Year Composition 3 ENGR 102A/B Introduction to Engineering or ENGR 102 3 ENGR 102A/B Introduction to Engineering or ENGR 102 3 Semester Total 16/14 2 ^{ord} Semester 1 MATH 122 Calculus II 3 MATH 129 Calculus II 3 MATH 120 Solid State Chemistry 4 ENGL 101 or 107 * *PHYS 141 Introductory Mechanics or PHYS 161H 4 General Education: Exploring Perspectives (Artist) 3 3 ^{ord} Semester 3 CE 214 Statics 3 MATH 1229 with C or better MATH 223 Vector Calculus 4 MATH 129 with C or better MNE 205 Introduction to Mining Engineering 3 Recommed: MATH 120 or 16 projes 1 MNE 297A Underground Mine Safety (offered the week prior to start	*CHEM 151 Chemical Thinking I or CHEM 161/163	4	Appropriate Math Placement
ENGR 102A/B Introduction to Engineering or ENGR 102 3 ENGR 102A/B Introduction to Engineering or ENGR 102 Image: Semistry of Corequisite of MATH 112 or Singler, First-Year Status; College of Engineering Major 1 UNIV 101 Intro to the General Education Experience 1 Semester 16/14 2 ^{ord} Semester 16/14 MATH 129 Calculus II 3 MATH 122B or 125 with C or better *CHEM 152 Chemical Thinking II or CHEM 162/164 or 4 Eor Bulls in CHEM 151 or 141/143 or 161/163 and Appropriate Math Placement FNGL 102 or 108 First-Year Composition 3 ENGL 101 or 107 *PHYS 141 Introductory Mechanics or PHYS 161H 4 MATH 122B or 125 or Appropriate Math Placement Evel General Education: Exploring Perspectives (Artist) 3 3 3 ^{ord} Semester 3 PHYS 141 or 161H; MATH 129 GEEOS 251 Physical Geology 4 MATH 129 with C or better MNE 205 Introduction to Mining Engineering 3 Recommend: MATH 120 or 0 for Concurrent Enrollment in MNE 205 General Education: Exploring Perspectives (Humanist) 3 1 Previous Completion of or Concurrent Enrollment in MNE 205 General Education: Exploring Perspectives (Humanist) 3 2 2 MNE 20	ENGL 101 or ENGL 107 or 109H First-Year Composition	3	
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MATH 254 Intro to Ordinary Differential Equations3MATH 129 or 223 with C or betterMNE 210 Mineralogy and Petrology for Engineers (Spring Only)3GEOS 251 and CHEM 151 or 141/143 or 161/163; CHEM 152 or 142/144 or 162/164MNE 204 Introduction to Electric Circuits & Mine Power Systems3PHYS 141 or 161HGeneral Education: Exploring Perspectives (Social Scientist)32	CE 215 Mechanics of Solids	3	CE 214
MNE 210 Mineralogy and Petrology for Engineers (Spring Only)3GEOS 251 and CHEM 151 or 141/143 or 161/163; CHEM 152 or 142/144 or 162/164MNE 204 Introduction to Electric Circuits & Mine Power Systems3PHYS 141 or 161HGeneral Education: Exploring Perspectives (Social Scientist)3	MATH 254 Intro to Ordinary Differential Equations	3	MATH 129 or 223 with C or better
MNE 204 Introduction to Electric Circuits & Mine Power Systems3PHYS 141 or 161HGeneral Education: Exploring Perspectives (Social Scientist)3	MNE 210 Mineralogy and Petrology for Engineers (Spring Only)	3	GEOS 251 and CHEM 151 or 141/143 or 161/163; CHEM 152 or 142/144 or 162/164
General Education: Exploring Perspectives (Social Scientist) 3	MNE 204 Introduction to Electric Circuits & Mine Power Systems	3	PHYS 141 or 161H
Semester Total 15	General Education: Exploring Perspectives (Social Scientist)	3	

*Each of the following foundational science courses satisfies the requirements for General Education: Exploring Perspectives (Natural Scientist): CHEM 151 or 152 or 161 or 162; or PHYS 141 or 161H.

Mine Operations Track			
Advanced Standing is required for 300- and 400-level engineering courses (see your academic advisor for details).			
Course Number and Title	Units	Comments	
5 th Semester			
CE 218 Mechanics of Fluids	3		
**MNE 422 Engineering Sustainable Development	3		
MNE 426 Health & Safety in Mining	1		
MNE 427 Geomechanics	4		
MNE 430 Mine Examination and Valuation	3		
MNE 444 Geopositioning for Mining Applications	3		
Semester Total	17		
6 th Semester			
MNE 396A Technical Trends in Mineral Resource Engineering	1		
MNE 419 Mine Planning Software (offered the week prior to start of the SPRING semester)	1		
MNE 436 Surface Mine Planning and Design	3		
MNE 438 Underground Mine Planning Design	2		
MNE 476 Mine Ventilation	4		
MNE 402 Probability & Statistical Concepts in Geologic Media or SIE 305 Intro to Engineering Probability & Statistics	3		
Semester Total	14		
7 th Semester			
MNE 411 Mineral Processing	3		
MNE 415 Rock Excavation	3		
MNE 407 Equipment Operations Technology	3		
MNE 498 Senior Capstone	1		
Technical Elective	3	Consult major advisor for course approval	
[†] General Education: Building Connections	3		
Semester Total	16		
8 th Semester			
MNE 447 Underground Construction Geomechanics	3		
MNE 498 Senior Capstone	2		
GEOS 304 Structural Geology	4		
Technical Elective	2 - 3	Depends on selection of General Education course. Consult major advisor for course approval	
[†] General Education: Building Connections	3		
UNIV 301 General Education Portfolio	1		

[†]Students should work closely with their academic advisor to select General Education: Building Connections courses; some course work in the major, such as some Technical Elective courses, may also fulfill General Education: Building Connections requirements. **MNE 422 may fulfill one of the General Education Building Connections courses, meet with your academic advisor.

Geomechanics Track		
Advanced Standing is required for 300- and 400-level engineering course	es (see yo	ur academic advisor for details).
Course Number and Title	Units	Comments
5 th Semester		
CE 218 Mechanics of Fluids	3	
**MNE 422 Engineering Sustainable Development	3	
MNE 426 Health & Safety in Mining	1	
MNE 427 Geomechanics	4	
MNE 430 Mine Examination and Valuation	3	
MNE 444 Geopositioning for Mining Applications	3	
Semester Total	17	
6 th Semester		
MNE 396A Technical Trends in Mineral Resource Engineering	1	
MNE 419 Mine Planning Software (offered the week prior to start of the SPRING semester)	1	
MNE 436 Surface Mine Planning and Design	3	
MNE 438 Underground Mine Design	2	
MNE 476 Mine Ventilation	4	
MNE 402 Probability & Statistical Concepts in Geologic Media or SIE 305 Intro to Engineering Probability & Statistics	3	
Semester Total	14	
7 th Semester		
MNE 407 Equipment Operations Technology	3	
MNE 415 Rock Excavation	3	
MNE 498 Senior Capstone	1	
Technical Elective	4 - 5	Depends on selection of General Education course, Consult major advisor for course approval
[†] General Education: Building Connections	3	
Semester Total	14/15	
8 th Semester		
MNE 447 Underground Construction Geomechanics	3	
MNE 498 Senior Capstone	2	
MNE 417 Tailings Storage Facility Design (Planning, Design & Analysis) or CE 343 Soil Mechanics	3	
MNE 417 L Tailings Lab for Mining Engineers or CE 349 Soils Laboratory	1	
GEOS 304 Structural Geology	4	
[†] General Education: Building Connections	3	
UNIV 301 General Education Portfolio	1	
Semester Total	17	

[†]Students should work closely with their academic advisor to select General Education: Building Connections courses; some course work in the major, such as some Technical Elective courses, may also fulfill General Education: Building Connections requirements.

**MNE 422 may fulfill one of the General Education Building Connections courses, meet with your academic advisor.

Sustainable Resource Development Track			
Advanced Standing is required for 300- and 400-level engineering courses (see your academic advisor for details).			
Course Number and Title	Units	Comments	
5 th Semester			
CE 218 Mechanics of Fluids	3		
**MNE 422 Engineering Sustainable Development	3		
MNE 426 Health & Safety in Mining	1		
MNE 427 Geomechanics	4		
MNE 430 Mine Examination and Valuation	3		
MNE 444 Geopositioning for Mining Applications	3		
Semester Total	17		
6 th Semester			
MNE 396A Technical Trends in Mineral Resource Engineering	1		
MNE 419 Mine Planning Software (offered the week prior to start of the SPRING semester)	1		
MNE 436 Surface Mine Planning and Design	3		
MNE 438 Underground Mine Design	2		
MNE 476 Mine Ventilation	4		
MNE 402 Probability & Statistical Concepts in Geologic Media or SIE 305 Intro to Engineering Probability & Statistics	3		
Semester Total	14		
7 th Semester			
MNE 411 Mineral Processing	3		
MNE 407 Equipment Operations Technology	3		
MNE 484 Fundamentals of Industrial and Environmental Health	3		
MNE 498 Senior Capstone	1		
Technical Elective	2 - 3	Depends on selection of General Education course, Consult major advisor for course approval	
[†] General Education: Building Connections	3		
Semester Total	1 5/16		
8 th Semester			
MNE 498 Senior Capstone	2		
Technical Elective	6	Consult major advisor for course approval	
GEOS 304 Structural Geology	4		
[†] General Education: Building Connections	3		
UNIV 301 General Education Portfolio	1		
Semester Total	16		

[†]Students should work closely with their academic advisor to select General Education: Building Connections courses; some course work in the major, such as some Technical Elective courses, may also fulfill General Education: Building Connections requirements.

**MNE 422 may fulfill one of the General Education Building Connections courses, meet with your academic advisor.

Mineral Processing Track		
Advanced Standing is required for 300- and 400-level engineering c	ourses (see your academic advisor for details).
Course Number and Title	Units	Comments
5 th Semester		
CE 218 Mechanics of Fluids	3	
MNE 411 Mineral Processing	3	
MNE 427 Geomechanics	4	
MNE 426 Health & Safety in Mining	1	
MNE 430 Mine Examination and Valuation	3	
MNE 444 Geopositioning for Mining Applications	3	
Semester Total	17	
6 th Semester		
MNE 396A Technical Trends in Mineral Resource Engineering	1	
MNE 419 Mine Planning Software (offered the week prior to start of the SPRING semester)	1	
MNE 436 Surface Mine Planning and Design	3	
MNE 438 Underground Mine Design	2	
MNE 476 Mine Ventilation	4	
MNE 411L Mineral Processing Lab	2	
MNE 402 Probability & Statistical Concepts in Geologic Media or SIE 305 Intro to Engineering Probability & Statistics	3	
Semester Total	16	
7 th Semester		
MNE 407 Equipment Operations Technology	3	
**MNE 422 Engineering Sustainable Development	3	
MNE 465 Hydrometallurgy	3	
MNE 498 Senior Capstone	1	
[†] General Education: Building Connections	3	
Semester Total	13	
8 th Semester		
MNE 439 Surface Chemistry of Flotation	3	
MNE 450 Elements of Solution Mining	3	
MNE 498 Senior Capstone	2	
GEOS 304 Structural Geology	4	
Elective	0 – 1	Depends on selection of General Education course, Consult major advisor for course approval
[†] General Education: Building Connections	3	
UNIV 301 General Education Portfolio	1	
Semester Total	16/17	

[†]Students should work closely with their academic advisor to select General Education: Building Connections courses; some course work in the major, such as some Technical Elective courses, may also fulfill General Education: Building Connections requirements.

**MNE 422 may fulfill one of the General Education Building Connections courses, meet with your academic advisor.