

B.S. IN MINING ENGINEERING

CATALOG YEAR 2021-2022

Below is the *advised sequence* of courses for this degree program and prerequisites as of 12/18/20.
The official degree requirements and prerequisites found in the University General Catalog and the prerequisites are subject to change.

COURSE NUMBER AND TITLE	UNITS	PREREQUISITES
1ST SEMESTER		
MATH 122A/B or MATH 125 Calculus I with Applications	5/3	Appropriate Math Placement
CHEM 151 General Chemistry I or CHEM 161/163	4	Appropriate Math Placement
ENGL 101 or ENGL 107 or 109H First-Year Composition	3	
ENGR 102A/B Introduction to Engineering or ENGR 102	3	<u>ENGR102A</u> : MATH 112; <u>ENGR102B</u> : Concurrently enrolled or completion of MATH 122B or 125; FR & SOPH Status
Tier I General Education	3	
Semester Total		18/16
2ND SEMESTER		
MATH 129 Calculus II	3	MATH 122B or 125 with C or better
CHEM 152 General Chemistry II or CHEM 162/164 or MSE 110 Solid State Chemistry	4	For Both: CHEM 151 or 161/163
ENGL 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 Level
Tier I General Education	3	
Semester Total		17
3RD SEMESTER		
CE 214 Statics	3	PHYS 141 or 161H; MATH 129
GEOS 251 Physical Geology	4	
MATH 223 Vector Calculus	4	MATH 129 with C or better
MNE 205 Introduction to Mining Engineering	3	Recommend: MATH 120R or higher
MNE 296A Mineral Resource Engineering Topics	1	
MNE 297A Underground Mine Safety (offered the week prior to start of the fall semester)	1	Recommend: MNE 205
Tier I General Education	3	
Semester Total		19
4TH SEMESTER		
CE 215 Mechanics of Solids	3	CE 214
MATH 254 Intro to Ordinary Differential Equations	3	MATH 129 or 223 with C or better
MNE 210 Mineralogy and Petrology for Engineers (Spring Only)	3	CHEM 151 or 161/163; CHEM 152 or 162/164
MNE 204 Introduction to Electric Circuits & Mine Power Systems	3	PHYS 141
Tier I General Education	3	
Semester Total		15
MINE OPERATIONS TRACK		

COURSE NUMBER AND TITLE	UNITS
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CURRENT PREREQUISITES FOR UPPER DIVISION COURSES CAN BE FOUND IN THE UA GENERAL CATALOG

ADVANCED STANDING IS REQUIRED FOR 3XX AND 4XX COURSES (SEE ADVISOR FOR REQUIREMENTS)

5TH SEMESTER

CE 218 Mechanics of Fluids	3
MNE 422 Sustainable Resource 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

6TH 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 Design	3
MNE 438 Underground Mine Planning Design	2
MNE 476 Mine Ventilation	4
Technical Elective- See major advisor for approval	3
Semester Total	14

7TH SEMESTER

MNE 411 Mineral Processing	3
MNE 415 Rock Excavation	3
MNE 407 Equipment Operations Technology	3
MNE 498 Senior Capstone	1
GEOS 304 Structural Geology	4
**SIE 305 Introduction to Engineering Probability and Statistics or CE 310 Probability and Statistics in Civil Engineering	3
Semester Total	17

8TH SEMESTER

MNE 447 Underground Construction Geomechanics	3
MNE 498 Senior Design	2
Technical Elective- See major advisor for approval	2
Tier II General Education	3
Tier II General Education	3
Semester Total	13

*Tier I and II General Education Courses must meet University general education requirements. One course must be recognized by the university as meeting the Diversity Requirement.

**SIE 305 offered Fall & Spring, CE 310 offered Fall only

GEOMECHANICS TRACK

COURSE NUMBER AND TITLE

UNITS

CURRENT PREREQUISITES FOR UPPER DIVISION COURSES CAN BE FOUND IN THE UA GENERAL CATALOG

ADVANCED STANDING IS REQUIRED FOR 3XX AND 4XX COURSES (SEE ADVISOR FOR REQUIREMENTS)

5TH SEMESTER

CE 218 Mechanics of Fluids	3
MNE 422 Sustainable Resource 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

6TH 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 Design	3
MNE 438 Underground Mine Design	2
MNE 476 Mine Ventilation	4
Technical Elective – See major advisor for approval	4
Semester Total	15

7TH SEMESTER

MNE 407 Equipment Operations Technology	3
MNE 415 Rock Excavation	3
MNE 498 Senior Design	1
GEOS 304 Structural Geology	4
**SIE 305 Introduction to Engineering Probability and Statistics or CE 310 Probability and Statistics in Civil Engineering	3
Semester Total	14

8TH SEMESTER

MNE 447 Underground Construction Geomechanics	3
MNE 498 Senior Design	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 (Offered Fall '20)	1
Tier II General Education	3
Tier II General Education	3
Semester Total	15

*Tier I and II General Education Courses must meet University general education requirements. One course must be recognized by the university as meeting the Diversity Requirement.

**SIE 305 offered Fall & Spring, CE 310 offered Fall only

SUSTAINABLE RESOURCE DEVELOPMENT TRACK

COURSE NUMBER AND TITLE

UNITS

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ADVANCED STANDING IS REQUIRED FOR 3XX AND 4XX COURSES (SEE ADVISOR FOR REQUIREMENTS)

5TH SEMESTER

CE 218 Mechanics of Fluids	3
MNE 422 Sustainable Resource 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

6TH 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 Design	3
MNE 438 Underground Mine Design	2
MNE 476 Mine Ventilation	4
Technical Elective – See major advisor for approval	2
Semester Total	13

7TH SEMESTER

MNE 411 Mineral Processing	3
MNE 407 Equipment Operations Technology	3
MNE 484 Industrial & Environmental Health	3
MNE 498 Senior Design	1
GEOS 304 Structural Geology	4
**SIE 305 Introduction to Engineering Probability and Statistics or CE 310 Probability and Statistics in Civil Engineering	3
Semester Total	17

8TH SEMESTER

MNE 498 Senior Design	2
Technical Elective- See major advisor for approval	6
Tier II General Education	3
Tier II General Education	3
Semester Total	14

*Tier I and II General Education Courses must meet University general education requirements. One course must be recognized by the university as meeting the Diversity Requirement.

**SIE 305 offered Fall & Spring, CE 310 offered Fall only

MINERAL PROCESSING TRACK

COURSE NUMBER AND TITLE

UNITS

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ADVANCED STANDING IS REQUIRED FOR 3XX AND 4XX COURSES (SEE ADVISOR FOR REQUIREMENTS)

5TH 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

6TH 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 Design	3
MNE 438 Underground Mine Design	2
MNE 476 Mine Ventilation	4
Technical Elective – See major advisor for approval	2
Semester Total	13

7TH SEMESTER

MNE 407 Equipment Operations Technology	3
MNE 422 Sustainable Resource Development	3
MNE 465 Hydrometallurgy	3
MNE 498 Senior Design	1
GEOS 304 Structural Geology	4
**SIE 305 Introduction to Engineering Probability and Statistics or CE 310 Probability and Statistics in Civil Engineering	3
Semester Total	17

8TH SEMESTER

MNE 439 Surface Chemistry of Flotation	3
MNE 450 Elements of Solution Mining	3
MNE 498 Senior Design	2
Tier II General Education	3
Tier II General Education	3
Semester Total	14

*Tier I and II General Education Courses must meet University general education requirements. One course must be recognized by the university as meeting the Diversity Requirement.

**SIE 305 offered Fall & Spring, CE 310 offered Fall only