

COLLEGE OF ENGINEERING  
DEPARTMENT OF MINING AND MINERALS ENGINEERING  
**BACHELOR OF SCIENCE IN MINING ENGINEERING**  
FOR STUDENTS GRADUATING IN CALENDAR YEAR 2021  
130 CREDITS REQUIRED FOR GRADUATION

**APPROVED**  
University Registrar

FALL SEMESTER FRESHMAN 2017		Credits	SPRING SEMESTER FRESHMAN 2018		Credits
CHEM 1035 General Chemistry		3	ENGL 1106 First-Year Writing <i>Pre: ENGL 1105</i>		3
CHEM 1045 General Chemistry Lab <i>Co: CHEM 1035</i>		1	MATH 1226 Calculus of a Single Variable <i>Pre: MATH 1225</i>		4
ENGL 1105 First-Year Writing		3	MATH 1114 Elementary Linear Algebra (OR MATH 2114 Introduction to Linear Algebra <i>Pre: MATH 1225; MATH 1226 (B)</i> )		2 (3)
MATH 1225 Calculus of a Single Variable(C-) <i>Pre: Math Ready</i>		4	PHYS 2305 Found of Physics I w/lab (C-) <i>Pre: MATH 1225; Co: MATH 1226</i>		4
ENGE 1215 Foundations of Engineering (C-)		2	ENGE 1216 Foundations of Engineering (C-) <i>Pre: ENGE 1215</i>		2
CLE (Area 2, 3, or 7)		3	CLE (Area 2, 3, or 7)		3
<b>TOTAL</b>		<b>16</b>	<b>TOTAL</b>		<b>18 (19)</b>
FALL SEMESTER SOPHOMORE 2018		Credits	SPRING SEMESTER SOPHOMORE 2019		Credits
GEOS 1004 Introduction to Earth Science		3	ESM 2204 Mech of Deformable Bodies <i>Pre: ESM 2104, MATH 2204</i>		3
GEOS 1104 Introduction to Earth Science Lab		1	ESM 2304 Dynamics <i>Pre: ESM 2104, MATH 2204; Co: MATH 2214</i>		3
MATH 2204 Multivariable Calculus <i>Pre: MATH 1226</i>		3	MATH 2214 Differential Equations <i>Pre: MATH 1226, MATH 1114</i>		3
ESM 2104 Statics <i>Co: MATH 2204</i>		3	MINE 2524 Elements of Mine Design <i>Pre: 2504, GEOS 1004</i>		3 <sup>[S]</sup>
MINE 2504 Intro to Mining Engineering		3 <sup>[F]</sup>	CLE (Areas 2, 3, or 7)		3
MINE 2534 Mine Surveying and Mapping <i>Pre: ENGE 1216, MATH 1226</i>		3 <sup>[F]</sup>	CLE (Areas 2, 3, or 7)		3
CLE (Area 6)		1			
<b>TOTAL</b>		<b>17</b>	<b>TOTAL</b>		<b>18</b>
FALL SEMESTER JUNIOR 2019		Credits	SPRING SEMESTER JUNIOR 2020		Credits
ESM 3024 Introduction to Fluid Mechanics <i>Pre: ESM 2304, MATH 2204</i>		3	GEOS 3104 Elementary Geophysics <i>Pre: MATH 1225</i> —OR—GEOS 3404 Elements of Structural Geology <i>Pre: 1004</i>		3
ME 3134 Fundamentals of Thermodynamics <i>Pre: MATH 2214</i>		3	MINE 3544 Mineral Processing Lab <i>Pre: 3534; Co: 3554</i>		1 <sup>[S]</sup>
MINE 3504 Rock Mechanics and Ground Control <i>Pre: 2504, ESM 2204, GEOS 1004</i>		3 <sup>[F]</sup>	MINE 3554 Resource Recovery <i>Pre: 3534, CHEM 1035</i>		2 <sup>[S]</sup>
MINE 3514 Rock Mechanics Laboratory <i>Co: 3504</i>		1 <sup>[F]</sup>	MINE 3564 Underground Mine Design <i>Pre: 2524, 3504</i>		3 <sup>[S]</sup>
MINE 3524 Excavation Engineering <i>Pre: 2504, GEOS 1004, ESM 2204</i>		3 <sup>[F]</sup>	MINE 3574 Surface Mine and Quarry Design <i>Pre: 2524, 3524</i>		3 <sup>[S]</sup>
MINE 3534 Mineral Processing <i>Pre: 2504</i>		2 <sup>[F]</sup>	MINE 3584 Ventilation Engineering <i>Pre: 2504, ESM 3024</i>		3 <sup>[S]</sup>
<b>TOTAL</b>		<b>15</b>	<b>TOTAL</b>		<b>15</b>
FALL SEMESTER SENIOR 2020		Credits	SPRING SEMESTER SENIOR 2021		Credits
ECE 3054 Electrical Theory <i>Pre: PHYS 2306; Co: MATH 2214</i>		3	GEOS 4624 Mineral Deposits <i>Pre: (GEOS 1004 or 2104), (GEOS 3104 or 3404)</i>		3
MINE 4504 Materials Handling and Power Systems <i>Pre: ESM 3024; Co: ECE 3054</i>		3 <sup>[F]</sup>	MINE 4536 Senior Design Project <i>Pre: 4535; Co: 4535</i>		2 <sup>[S]</sup>
MINE 4514 Health, Safety and Risk Mgmt <i>Pre: 3564 or 3574</i>		3 <sup>[F]</sup>	MINE 4544 Mine Reclamation and Env Mgmt <i>Pre: 3574</i>		3 <sup>[S]</sup>
MINE 4524 Project Engineering and Mine Mgmt <i>Pre: 3564 or 3574</i>		3 <sup>[F]</sup>	MINE 4554 Mining Engr Leadership Sem <i>Pre: senior standing</i>		1 <sup>[S]</sup>
MINE 4535 Senior Design Project <i>Pre: 3564 or 3574 Co: 4524</i>		1 <sup>[F]</sup>	CLE (Area 2, 3, or 7)		3
Free Elective		3	Free Elective		3
<b>TOTAL</b>		<b>16</b>	<b>TOTAL</b>		<b>15</b>



**General Information about Checksheet:** Course offerings are subject to change and the availability of sufficient resources. Students should confirm course offerings in advance with their department. Superscripted annotation (F, S, SI, SII) in credits column indicates terms when a course is expected to be offered.

**Curriculum for Liberal Education (CLE)**

Consult the CLE Alphabetical Listing at: <http://www.cle.prov.vt.edu/guides/alpha.html>, CLE courses need to be completed prior to graduation

CLE Area 1: Writing and Discourse (6 hrs)	ENGL 1105	(3)	ENGL 1106	(3)
CLE Area 2: Ideas, Cultural Traditions, Values Electives (6 hrs)		(3)		(3)
CLE Area 3: Society & Human Behavior electives (6 hrs) <sup>1</sup>		(3)		(3)
CLE Area 4: Scientific Reasoning and Discovery (8 hrs)	CHEM 1035/1045	(4)	PHYS 2305	(4)
CLE Area 5: Quantitative and Symbolic Reasoning (8 hrs)	MATH 1225	(4)	MATH 1226	(4)
CLE Area 6: Creativity & Aesthetic Experience elective (1 hr)				(1)
CLE Area 7: Global Issues Elective (3 hrs)				(3)

If a CLE course is double-counted to satisfy two different CLE areas, a free elective(s) must be taken to maintain a minimum of 130 credits.

**Change of Major Requirements:** Please see <http://www.enge.vt.edu/undergraduate-changing-majors.html>

**Foreign Language Requirements:** Students must have had 2 years of a foreign language in high school or one year at the college level (6 credit hours) of the same language. College-level credits used to meet this requirement do not count towards the degree.

**Satisfactory Progress Towards Degree:** University Policy 91 outlines university-wide minimum criteria to determine if students are making satisfactory progress towards the completion of their degrees. The MINE Department fully supports this policy. Specific expectations for satisfactory progress for Mining Engineering majors are as follows:

- Each student must meet the minimum University-wide criteria as described in Policy 91 and summarized in the Undergraduate Catalog (<http://www.undergradcatalog.registrar.vt.edu/1617/academic-policies.html#22><http://www.undergradcatalog.registrar.vt.edu/1617/academic-policies.html#22>)
- After having completed 72 credit hours (including transfer, advanced placement, advanced standing, and credit by examination) a student must:
  - Maintain an overall and in major GPA of 2.0 or better. (In-major GPA is calculated using all courses taken under the MINE designator)
  - Have passing grades in MINE 2504, MATH 2204 and MATH 2214.

**Statement of Hidden Prerequisites:** Prerequisites for each course are listed after the course title. The (letter grade) notation, such as (C-), indicates the minimum grade students must earn in the pre-requisite course. There are no hidden pre-requisites in the program of study. Prerequisites may change from what is indicated. Be sure to consult the University Catalog or check with your advisor for the most current pre-requisites.

**Graduation Requirements:** Each student must complete at least 130 semester credit hours with a minimum overall GPA of 2.00 and a minimum in-major GPA of 2.00. In-major GPA is determined from all courses with MINE designator.