

COLLEGE OF ENGINEERING  
DEPARTMENT OF MINING AND MINERALS ENGINEERING  
**BACHELOR OF SCIENCE IN MINING ENGINEERING**  
FOR STUDENTS GRADUATING IN CALENDAR YEAR 2018  
130 CREDITS REQUIRED FOR GRADUATION

FALL SEMESTER FRESHMAN 2014		Credits	SPRING SEMESTER FRESHMAN 2015		Credits
CHEM 1035 General Chemistry		3	PHYS 2305 Found of Physics I w/lab (C-) Pre: MATH 1225; Co: MATH 1226		4
CHEM 1045 General Chemistry Lab Co: CHEM 1035		1	ENGL 1106 First-Year Writing Pre: ENGL 1105		3
ENGL 1105 First-Year Writing		3	MATH 1226 Calculus of a Single Variable Pre: MATH 1225		4
MATH 1225 Calculus of a Single Variable (C-) Pre: Math Ready		4	MATH 1114 Elementary Linear Algebra		2
ENGE 1215 Foundations of Engineering (C-) Co: MATH 1225		2	ENGE 1216 Foundations of Engineering (C-) Pre: ENGE 1215		2
Free Elective		3	Free Elective		3
<b>TOTAL</b>		<b>16</b>	<b>TOTAL</b>		<b>18</b>
FALL SEMESTER SOPHOMORE 2015		Credits	SPRING SEMESTER SOPHOMORE 2016		Credits
GEOS 1004 Physical Geology		3	ESM 2204 Mech of Deformable Bodies ESM 2104, (MATH 2204 or 2204H or 2224 or 2224H)		3
GEOS 1104 Physical Geology Lab		1	ESM 2304 Dynamics Pre: ESM 2104, (MATH 2204 or 2204H or 2224 or 2224H). Co: MATH 2214		3
ESM 2104 Statics Co: MATH 2224 or 2224H or 2204 or 2204H or 2406H		3	MATH 2214 Intro Differential Equations Pre: MATH 1226, MATH 1114		3
MATH 2204 Intro Multivariable Calculus Pre: MATH 1226		3	MINE 2524 Elements of Mine Design Pre: 2504, GEOS 1004		3 <sup>[S]</sup>
MINE 2534 Mine Surveying and Mapping Pre: ENGE 1216, MATH 1226		3 <sup>[F]</sup>	CLE (Area 2, 3, or 7)		3
MINE 2504 Intro to Mining Engineering		3 <sup>[F]</sup>	CLE (Area 2, 3, or 7)		3
CLE (Area 6)		1			
<b>TOTAL</b>		<b>17</b>	<b>TOTAL</b>		<b>18</b>
FALL SEMESTER JUNIOR 2016		Credits	SPRING SEMESTER JUNIOR 2017		Credits
ESM 3024 Introduction to Fluid Mechanics Pre: ESM 2304, (MATH 2204 or 2204H or MATH 2224)		3	GEOS 3104 Elementary Geophysics Pre: (MATH 1205 or 1225), (MATH 1206 or 1226), (GEOS 1004 or 2104), PHYS 2305—OR—GEOS 3404 Elements of Structural Geology Pre: GEOS 1004		3
ME 3134 Fundamentals of Thermodynamics Pre: MATH 2214		3	MINE 3544 Mineral Processing Lab Pre: 3534. Co: 3554		1 <sup>[S]</sup>
MINE 3504 Rock Mechanics and Ground Control Pre: 2504, ESM 2204, GEOS 1004		3 <sup>[F]</sup>	MINE 3554 Resource Recovery Pre: 3534, CHEM 1035		2 <sup>[S]</sup>
MINE 3514 Rock Mechanics Laboratory Co: 3504		1 <sup>[F]</sup>	MINE 3564 Underground Mine Design Pre: 2524, 3504		3 <sup>[S]</sup>
MINE 3524 Excavation Engineering Pre: 2504, GEOS 1004, ESM 2204		3 <sup>[F]</sup>	MINE 3574 Surface Mine and Quarry Design Pre: 2524, 3524		3 <sup>[S]</sup>
MINE 3534 Mineral Processing Pre: 2504		2 <sup>[F]</sup>	MINE 3584 Ventilation Engineering Pre: 2504, ESM 3024		3 <sup>[S]</sup>
<b>TOTAL</b>		<b>15</b>	<b>TOTAL</b>		<b>15</b>
FALL SEMESTER SENIOR 2017		Credits	SPRING SEMESTER SENIOR 2018		Credits
ECE 3054 Electrical Theory. Co: MATH 2214		3	GEOS 4624 Mineral Deposits Pre: (GEOS 1004 or 2104)		3
MINE 4504 Materials Handling and Power Systems Pre: ESM 3024 Co: ECE 3054		3 <sup>[F]</sup>	MINE 4536 Senior Design Project Pre: 4535 Co: 4535		2 <sup>[S]</sup>
MINE 4514 Health, Safety and Risk Mgmt Pre: 3564 or 3574		3 <sup>[F]</sup>	MINE 4544 Mine Reclamation and Env Mgmt Pre: 3574		3 <sup>[S]</sup>
MINE 4524 Project Engineering and Mine Mgmt Pre: 3564 or 3574		3 <sup>[F]</sup>	MINE 4554 Mining Engr Leadership Sem Pre: senior standing		1 <sup>[S]</sup>
MINE 4535 Senior Design Project Pre: 3564 or 3574 Co: 4524		1 <sup>[F]</sup>	CLE (Area 2, 3, or 7)		3
CLE (Area 2, 3, or 7)		3	CLE (Area 2, 3, or 7)		3
<b>TOTAL</b>		<b>16</b>	<b>TOTAL</b>		<b>15</b>

<b>Curriculum for Liberal Education (CLE)</b>				
Consult the CLE Alphabetical Listing at: <a href="http://www.cle.prov.vt.edu/guides/alpha.html">http://www.cle.prov.vt.edu/guides/alpha.html</a> , 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.				
<b>Change of Major Requirements:</b>				
For Change of major requirements, please see: <a href="http://www.enge.vt.edu/undergraduate-changing-majors.html">http://www.enge.vt.edu/undergraduate-changing-majors.html</a> to reflect current policies in the College of Engineering. University requirements are reflected at <a href="https://www.registrar.vt.edu/prospective/majors/restricted-majors.html">https://www.registrar.vt.edu/prospective/majors/restricted-majors.html</a>				
<b>Foreign Language Requirements:</b>				
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.				
<b>Satisfactory Progress Towards Degree:</b>				
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 and Minerals Engineering majors are as follows:				
<ul style="list-style-type: none"> <li>• Each student must meet the minimum University-wide criteria as described in Policy 91 and summarized in the Undergraduate Catalog (under Academic Policies)</li> <li>• After having completed 72 credit hours (including transfer, advanced placement, advanced standing, and credit by examination) a student must:               <ul style="list-style-type: none"> <li>○ Maintain an overall GPA of 2.0 or better. (In-major GPA is calculated using all courses taken under the MINE designator)</li> <li>○ Have passing grades in MINE 2504, MATH 2204 and MATH 2214.</li> </ul> </li> </ul>				
<b>Prerequisites:</b>				
Pre-requisites for each course are listed after the course title. There are no hidden prerequisites in this program of study. Prerequisites may change from what is indicated. Consult the University Catalog or check with an advisor for the most current requirements.				
<b>Graduation Requirements:</b>				
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.				