

Dual Degree B.S.Min.E. and B.S. Geology

Departmental Requirements for BSMInE

Students must meet the following criteria to qualify for a Bachelor of Science in Mining Engineering degree and Bachelor of Science in Geology:

- Complete a minimum of 157 credit hours
- Satisfy WVU's undergraduate degree requirements
- Satisfy Statler College's undergraduate degree requirements (<http://catalog.wvu.edu/undergraduate/collegeofengineeringandmineralresources/#policies>text)
- Complete all courses listed in the curriculum requirements with the required minimum grades
- Attain an overall grade point average of 2.00 or better
- Attain a WVU grade point average of 2.00 or better
- Attain a Statler grade point average of 2.00 or better
- A maximum of one math or science courses with a grade of D+, D, or D- may apply towards a Statler College degree
- Complete a survey regarding their academic and professional experiences at WVU, as well as post-graduation job placement or continuing education plans.

The Statler GPA is computed based on all work taken at WVU with a subject code within Statler College (BIOM, BMEG, CE, CHE, CPE, CS, CSEE, CYBE, EE, ENGR, ENVE, ETEC, IENG, IH&S, MAE, MINE, PDA, PNGE, SAFM, SENG) excluding ENGR 140, ENGR 150, and CS 101. The WVU GPA is computed based on all work taken at WVU. The Overall GPA is computed based on all work taken at WVU and transfer work.

Departmental Requirements for the B.S. in Geology

- **Capstone Requirement:** The university requires the successful completion of a Capstone course. Geology majors must complete GEOL 403 and one of the following to fulfill this requirement: GEOL 404 or GEOL 491 or GEOL 496.
- **Writing and Communication Requirement:** Geology Bachelor of Science students fulfill the Writing and Communication Skills requirement by completing ENGL 101 and ENGL 102 (or ENGL 103), and two additional SpeakWrite Certified Courses: GEOL 404 and a 2nd course selected from GEOL 311 or GEOL 341.
- **Calculation of the GPA in the Major:** An average of at least 2.0 must be attained in all Geology Major Requirements coursework. A minimum grade of C- is required in all GEOL 101, GEOL 101L, GEOL 103, GEOL 103L and GEOL 286. If a course is repeated, all attempts will be included in the calculation of the GPA unless the course is eligible for D/F repeat.
- **Benchmark Expectations:** For details, go to the Geology Degree Progress Tab.

Curriculum Requirements

Code	Title	Hours
	University Requirements	16
	Fundamentals of Engineering Requirements	5
	Math and Science Requirements	42
	Mining Engineering and Geology Program Requirements	94
	Total Hours	157

University Requirements

Code	Title	Hours
	General Education Foundations (GEF) 1, 2, 3, 4, 5, 6, 7, and 8 (31-37 Credits)	
	Outstanding GEF Requirements 1, 5, 6, and 7	15
ENGR 191	First-Year Seminar	1
	Total Hours	16

Fundamentals of Engineering Requirements

Code	Title	Hours
	A minimum grade of C- is required in all Fundamentals of Engineering courses.	
ENGR 101	Engineering Problem Solving 1	2
	Engineering Problem Solving (Select one of the following):	3
CHE 102	Introduction to Chemical Engineering	

ENGR 102	Engineering Problem-Solving 2	
ENGR 103	Introduction to Nanotechnology Design	
MAE 102	Introduction to Mechanical and Aerospace Engineering Design	
Total Hours		5

Math and Science Requirements

Code	Title	Hours
A minimum grade of C- is required in all Math and Science courses.		
CHEM 115 & 115L	Fundamentals of Chemistry 1 and Fundamentals of Chemistry 1 Laboratory	4
CHEM 116 & 116L	Fundamentals of Chemistry 2 and Fundamentals of Chemistry 2 Laboratory	4
GEOL 101 & 101L	Planet Earth and Planet Earth Laboratory	4
GEOL 342	Structural Geology for Engineers	3
Calculus I (GEF 3):		4
MATH 155	Calculus 1	
MATH 153 & MATH 154	Calculus 1a with Precalculus and Calculus 1b with Precalculus	
MATH 156	Calculus 2	4
MATH 251	Multivariable Calculus	4
MATH 261	Elementary Differential Equations	4
PHYS 111 & 111L	General Physics 1 and General Physics 1 Laboratory	4
PHYS 112 & 112L	General Physics 2 and General Physics 2 Laboratory	4
STAT 215	Introduction to Probability and Statistics	3
Total Hours		42

Mining Engineering and Geology Program Requirements

Code	Title	Hours
ECON 201	Principles of Microeconomics	3
ESWS 455	Reclamation of Disturbed Soils	3
GEOL 103 & 103L	Earth Through Time and Earth Through Time Laboratory	4
GEOL 286 & 286L	Introduction to Minerals & Rocks and Introduction to Minerals & Rocks Laboratory	4
GEOL 311 & 311L	Stratigraphy and Sedimentation and Stratigraphy and Sedimentation Laboratory	4
GEOL 341 & 341L	Structural Geology and Structural Geology Laboratory	4
GEOL 403	Geological Data Analysis	3
GEOL 404	Geology Field Camp	3
Geology Elective (select three of the following):		9
GEOL 300	Geology of West Virginia	
GEOL 331	Paleontology	
GEOL 321	Geomorphology	
GEOL 365	Environmental Geology	
GEOL 373	Introduction to Petroleum Geology	
GEOL 386	Igneous and Metamorphic Petrology	
GEOL 454	Environmental and Exploration of Geophysics 1	
GEOL 463	Physical Hydrogeology	

GEOG 350 & 350L	Geographic Information Systems and Science and Geographic Information Systems and Science Laboratory	
GEOG 455 & 455L	Introduction to Remote Sensing and Introduction to Remote Sensing Laboratory	
MAE 241	Statics	3
MAE 242	Dynamics	3
MAE 243	Mechanics of Materials	3
MAE 320	Thermodynamics	3
MAE 331	Fluid Mechanics	3
MINE 201 & 201L	Mine Surveying and Mine Surveying Laboratory	3
MINE 205	Underground Mining Systems	3
MINE 206	Surface Mining Systems	4
MINE 261	Engineering Computer Aided Design	2
MINE 306	Mineral Property Evaluation	3
MINE 331	Mine Ventilation	3
MINE 382	Mine Power Systems	3
MINE 411 & 411L	Rock Mechanics/Ground Control and Rock Mechanics/Ground Control Laboratory	4
MINE 427 & 427L	Coal Preparation and Coal Preparation Laboratory	4
or MINE 425 & 425L	Mineral Processing and Mineral Processing Laboratory	
MINE 461	Applied Mineral Computer Methods	3
MINE 471	Mine and Safety Management	3
MINE 483S	Mine Design-Exploration Mapping	3
MINE 484	Mine Design-Report Capstone	4
Total Hours		94

Suggested Plan of Study

First Year

Fall	Hours	Spring	Hours
MATH 155 (GEF 3)		4 GEOL 103 & 103L	4
ENGR 101		2 MATH 156 (GEF 8)	4
ENGR 191		1 ENGR 102	3
CHEM 115 & 115L (GEF 2)		4 PHYS 111 & 111L (GEF 8)	4
ENGL 101 (GEF 1)		3 GEF 5	3
GEOL 101 & 101L		4	
		18	18

Second Year

Fall	Hours	Spring	Hours
MAE 241		3 CHEM 116 & 116L	4
MATH 251		4 GEOL 286 & 286L	4
MINE 201 & 201L		3 MINE 206	4
MINE 205		3 MAE 242	3
MINE 261		2 PHYS 112 & 112L (GEF 8)	4
		15	19

Third Year

Fall	Hours	Spring	Hours	Summer	Hours	
GEOL 341 & 341L		4 MINE 331		3 GEOL 404		3
ECON 201		3 ENGL 102 (GEF 1)		3		
MATH 261		4 MAE 243		3		
MINE 461		3 MAE 331		3		
STAT 215		3 GEOL 311 & 311L		4		
		GEOL 403		3		
		17			19	3

Fourth Year

Fall	Hours	Spring	Hours		
MAE 320		3 MINE 484		4	
Geology Elective		3 ESWS 455		3	
MINE 382		3 MINE 427 & 427L		4	
MINE 306		3 GEF 6		3	
MINE 483S		3 Geology Elective		3	
MINE 411 & 411L		4			
		19			17

Fifth Year

Fall	Hours		
GEF 7		3	
MINE 471		3	
Geology Elective		3	
GEOL 342		3	
		12	

Total credit hours: 157