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UNIVERSITY REGISTRAR

College of Science
Department of Geosciences
Bachelor of Science in Geosciences (BS)
Geology Option
For students graduating in calendar year 2020

CURRICULUM FOR LIBERAL EDUCATION (CLE) REQUIREMENTS

(CLE) requirements and approved courses are available online:
http://www.cle.prov.vt.edu/guides/index.html (credit hours in parentheses)

Writing and Discourse (Area 1: 6 credits)
(ENGL 1105-1106 Freshman English) (3)____ (3) ____

Ideas, Cultural Traditions, and Values (Area 2: 6 credits required) (3)____ (3)____
(Select from approved CLE courses)

Society and Human Behavior (Area 3: 6 credits required) (3)____ (3)____
(Select from approved CLE courses)

Scientific Reasoning and Discovery (Area 4)
(Area fulfilled by CHEM 1035 and CHEM 1036)

Quantitative and Symbolic Reasoning (Area 5)
(Area fulfilled by MATH 1225 and MATH 1226)

Creativity and Aesthetic Experience (Area 6: 3 credits required) (3)____
(Select from approved CLE courses; must be a three-credit course)

Critical Issues in a Global Context (Area 7: 3 credits required) (3)____
(Select from approved CLE courses)

CLE credit hour requirement: **24 credits**

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COLLEGE AND DEPARTMENT REQUIREMENTS

Geoscience Courses (52 credits)

GEOS 2004	Geoscience Fundamentals[2]	(3)____	
GEOS 2024	Earth's Dynamic Systems[1]	(8)____	
GEOS 2444	Geoscience Field Observation[2]	(2)____	
GEOS 3104	Elementary Geophysics[2]	(3)____	
GEOS 3204	Sedimentology Stratigraphy[1]	(3)____	
GEOS 3404	Elements of Structural Geology[1]	(3)____	
GEOS 3504	Mineralogy[1]	(3)____	
GEOS 3604	Paleontology[2]	(3)____	
GEOS 3704	Igneous & Metamorphic Rocks[2]	(3)____	
GEOS 4024	Senior Seminar[2]	(3)____	
GEOS 3XXX-4XXX	Geosciences Elective	(3)____	
GEOS 4964*	Field Study	(6)____	
GEOS 4XXX	Geosciences Electives	(3)____	(3)____
		(3)____	

Mathematics Courses (16-17 credits)

MATH 1114 or	Elementary Linear Algebra	(2)____	
MATH 2114	Introduction to Linear Algebra	(3)____	
MATH 1225 - 1226	Calculus of a Single Variable	(4)____	(4)____
MATH 2204	Introduction Multivariable Calculus	(3)____	
STAT 3005	Statistical Methods	(3)____	

Natural Science Courses (24 credits)

BIOL 1105 – 1106	Principles of Biology	(3)____	(3)____
BIOL 1115 – 1116	Principles of Biology Lab	(1)____	(1)____
CHEM 1035 - 1036	General Chemistry	(3)____	(3)____
CHEM 1045 - 1046	General Chemistry Lab	(1)____	(1)____
PHYS 2305 - 2306	Foundations of Physics I and Lab	(4)____	(4)____

Free Electives (3-4 credits) _____ ____

College and department credit hour requirement: **96 credits**

Total to complete degree **120 credits**

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*Summer Field Camp - no course substitution allowed - university undergraduate transfer policy applies - cannot take pass/fail - review individual field camp pre requisites before applying

[1]Taught only during fall semester

[2]Taught only during spring semester

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Credit hours and GPA requirements: Graduation requires completion of a minimum of 120 credit hours with a GPA of 2.0 or greater for all hours attempted. In addition, students must have an in-major GPA of 2.5 or greater. The in-major GPA is calculated from all geosciences courses

Prerequisites: This check sheet has no hidden prerequisites, although some of the courses listed are prerequisites for other courses. Please see your advisor or consult the Undergraduate Course Catalog for more information.

Substitutions:

BIOL 1005/1006 General Biology for BIOL 1105/1106 Principles of Biology
BIOL 1015/1016 General Biology Lab for BIOL 1115/1116 Principles of Biology Lab
BIOL 1125/1126 Biological Principles Lab for BIOL 1115/1116 Principles of Biology Lab
BIOL 1205H/1206H Honors Biology for BIOL 1105/1106 Principles of Biology

CHEM 1035H/1036H Honors General Chemistry for CHEM 1035/1036 General Chemistry

ENGL 1204H Honors Freshman English for ENGL 1106 Freshman English
COMM 1015/1016 Communication Skills for ENGL 1105/1106 Freshman English

MATH 1114H Honors Elementary Linear Algebra for MATH 1114 Linear Algebra
MATH 2114H Honors Introduction to Linear Algebra for MATH 2114 Introduction to Linear Algebra

STAT 3615/3616 Biological Statistics for STAT 3005 Statistical Methods

Satisfactory progress towards degree:

1. By 72 hours students must have completed the following courses and their prerequisites:
   GEOS 2004, 2024, 3104, 3404, 3504
   MATH 1114 or 2114, 1225, 1226, 2204
   CHEM 1035, 1036, 1045, 1046
   PHYS 2305, 2306
2. Students must achieve an overall GPA of 2.0 and an in-major GPA of 2.5 upon attempting 15 GEOS credit hours (including transfer credit, courses completed with a grade of "W", advance placement, or IB credit).
3. All GEOS courses will be used to calculate in-major GPA.

Foreign Language Requirement: Students who did not successfully complete at least two years of a single foreign, classical, or sign language during high school must successfully complete six semester hours of a single foreign, classical, or sign language at the college level. Courses taken to meet this requirement do not count toward the hours required for graduation. Please consult the Undergraduate Catalog for details.

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Geology Option			
Courses		**Prerequisites**	**Co requisites**
GEOS 2004	Geoscience Fundamentals	GEOS 2024	None
GEOS 2024	Earth's Dynamic Systems	None	None
GEOS 2444	Geoscience Field Observations	GEOS 2024	None
GEOS 3104	Elementary Geophysics	Math 1205 or 1225, 1206 or 1226, GEOS 2004, 2024, 2444, Phys 2305	Phys 2306
GEOS 3204	Sedimentology Stratigraphy	GEOS 2004, 2024, 2444	None
GEOS 3404	Elements of Structural Geology	GEOS 2004, 2024, 2444	None
GEOS 3504	Mineralogy	Math 1205 or 1225, Chem 1036, GEOS 2004, 2024, 2444	None
GEOS 3604	Paleontology	GEOS 2004, 2024, 2444	None
GEOS 3704	Igneous & Metamorphic Rocks	GEOS 2004, 2024, 2444, 3504	None
GEOS 4024	Senior Seminar	GEOS 3104, 3204, 3404, 3504, 3604, 3704	None
GEOS 3-4XXX	Elective	Varies	Varies
GEOS 4964	Field Study	None	None
MATH 1114 or	Elementary Linear Algebra	None	None
MATH 2114	Introduction to Linear Algebra	Math 1225 or 1226	None
MATH 1225	Calculus of a Single Variable	None	None
MATH 1226	Calculus of a Single Variable	Math 1225	None
MATH 2204	Introduction Multivariable Calculus	Math 1226	None
STAT 3005	Statistical Methods	Math 1206 or 1225	None
BIOL 1105	Principles of Biology	None	Biol 1115
BIOL 1106	Principles of Biology	None	Biol 1116
BIOL 1115	Principles of Biology Lab	None	Biol 1105
BIOL 1116	Principles of Biology Lab	None	Biol 1106
CHEM 1035	General Chemistry	None	None
CHEM 1036	General Chemistry	Chem 1035 or 1055 or 1055H	None
CHEM 1045	General Chemistry Lab	None	Chem 1035
CHEM 1046	General Chemistry Lab	Chem 1045 or 1065	Chem 1036
PHYS 2305	Foundations of Physics I and Lab	Math 1205 or 1205H or 1225 or 1206 or 1206H or 1226	None
PHYS 2306	Foundations of Physics I and Lab	Math 1206 or 1206H or 1226, Phys 2305	None