

GEOSCIENCES
Geophysics Option
Students graduating in 2007 (Entering Fall 2003) (Spring 2007-Fall 2007)

FRESHMAN (32)

*GEOS 1004 Physical Geology	3	*GEOS 1014 The Earth & Life Through Time	4
*GEOS 1104 Physical Geology Lab	1	GEOS 2444 Geoscience Field Observations	2
*CHEM 1035 General Chemistry	3	*CHEM 1036 General Chemistry	3
*CHEM 1045 General Chemistry Lab	1	*CHEM 1046 General Chemistry Lab	1
*ENGL 1105 Freshman English	3	*ENGL 1106 Freshman English	3
*MATH 1114 Elementary Linear Algebra	2	*MATH 1206 Calculus	3
*MATH 1205 Calculus	3		
Semester Total	16	Semester Total	16

SOPHOMORE (32)

*GEOS 1005 Geoscience Fundamentals	1	*GEOS 3104 Elementary Geophysics	3
*GEOS 3404 Elements of Structural Geology	3	GEOS 3704 Igneous & Metamorphic Rocks	3
*GEOS 3504 Mineralogy	3	*MATH 2214 Differential Equations	3
*MATH 1224 Vector Geometry	2	*PHYS 2306 Foundations of Physics	4
*MATH 2224 Multivariable Calculus	3	Area 2 Elective	3
*PHYS 2305 Foundations of Physics	4		
Semester Total	16	Semester Total	16

JUNIOR (30)

GEOS 3204 Sedimentology-Stratigraphy (WI)	3	GEOS 3604 Paleontology	3
CS 1044 Introduction to Programming in C	3	**GEOS 4154 Earthquake Seismology	3
STAT 3005 Statistical Methods	3	Science/Math Elective ¹	3
Science/Math Elective ¹	3	Area 3 Elective	3
Area 6 Elective	3	Area 7 Elective (e.g. GEOS 1024)	3
Semester Total	15	Semester Total	15

SENIOR (26)

**GEOS 4164 Potential Field Methods	4	GEOS 4024 Senior Seminar (WI)	3
GEOS 4174 Exploration Seismology	4	***GEOS 4124 Seismic Stratigraphy	3
Area 3 Elective	3	Area 2 Elective	3
Free Elective	3	Free Elective	3
Semester Total	14	Semester Total	12
		Total Credits	120

*Courses required for satisfactory progress by the time the student reaches 72 hours.

**Offered in 2003 or 2005. Can be taken in either your junior or senior year.

***Offered in 2004 or 2006. Can be taken in either your junior or senior year

¹ Science/Math Electives: select 6 credits from GEOS 4000 level, PHYS 3000 or 4000 level, Math 4564 and 4574.

GEOS 1006 (2nd semester Geoscience Fundamentals) is recommended but not required.

An in-major GPA of 2.0 or above must be maintained at all times.

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UNIVERSITY REQUIREMENTS

A minimum of 120 semester credits are required for graduation. Of these, not more than 60 credits can have a GEOS prefix; there must be 60 credits outside GEOS or cross listed courses.

COLLEGE OF SCIENCE REQUIREMENTS

1. **Area 1--Writing and Discourse** (12 credits) ENGL 1105 (3), 1106 (3), 6 hours writing intensive satisfied by GEOS 3204 (3), 4024 (3)
2. **Area 2--Ideas, Cultural Traditions and Values** (6 credits) Courses approved for the University Core Curriculum
3. **Area 3--Society and Human Behavior** (6 credits) Courses approved for the University Core Curriculum.
4. **Area 4--Scientific Reasoning and Discovery** (8 credits) Satisfied by Geosciences courses
5. **Area 5--Quantitative and Symbolic Reasoning** (6 credits) Satisfied by Mathematics courses required for major
6. **Area 6--Creativity and Aesthetic Experience** (3 credits) Courses approved for the University Core Curriculum. One 3 credit course only.
7. **Area 7--Critical Issues in a Global Context** (3 credits) Must be from list of courses approved for the University Core Curriculum. Courses taken to satisfy this University Core requirement may overlap or "double count" with other areas of the core, with the student's major, and with electives.
8. **Foreign Language** (6 credits or equivalent)¹. Requirement can be satisfied by 3 years of a single language in High School, or two years in High School and a 2nd semester course at Virginia Tech i.e., (1106 course number) in the Language² or 2 years in High School and a score of 3 on the AP exam², or a two-course (6 credit) first-year sequence.¹
9. **In major GPA** is calculated on GEOS courses only.

DEPARTMENT OF GEOSCIENCES REQUIREMENTS

1. Mathematical Sciences (22 credits)
 - a. Math 1114 (2), 1205 (3), 1206 (3), 1224 (2), 2214 (3), 2224 (3).
 - b. Computer Science 1044 (3).
 - c. Statistics 3005 (3).
2. Natural Sciences other than Geosciences (16 credits)
 - a. Chemistry 1035 (3), 1036 (3), 1045 (1), 1046 (1).
 - b. Physics 2305 (4), 2306 (4).
3. Geosciences (46 credits) 1004 (3), 1005 (1), 1014 (4), 1104 (1), 2444 (2), 3104 (3), 3204 (3), 3404 (3), 3504 (3), 3604 (3), 3704 (3), 4024 (3), 4124 (3), 4154 (3), 4164 (4), 4174 (4).
4. Science/Math Electives (6 credits)
Select 6 additional credits from GEOS 4000, PHYS 3000 or 4000 level, Math 4564 and 4574. Maximum of 4 credits combined from GEOS 4974, 4994.
5. Free Electives: 6 credits for a total of 120.

¹In general, these 6 credits cannot be counted toward the 120 credits required for graduation.

²These 3 credits count toward the 120 required minimum.