COLLEGE OF SCIENCE
Bachelor of Science; Geosciences
Earth Sciences Education Option
Students graduating in 2009

FRESHMAN (30 credits)

___*GEOS 1004 Physical Geol. (Area 4)	3	___*GEOS 1014 Earth & Life Thru Time (Area 4)	4
___*GEOS 1104 Physical Geol. Lab (Area 4)	1	___*GEOS 2444 Geoscience Field Observations[1]	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 (Area 1)	3	___*ENGL 1106 Freshman English (Area 1)	3
___*MATH 1205 Calculus (Area 5)	3	___*MATH 1206 Calculus (Area 5)	3
Semester Total	14	Semester Total	16

SOPHOMORE (31 credits)

___*GEOS 1005 Geoscience Fundamentals[1]	1	___*GEOS 3104 Elementary Geophysics[1]	3
___GEOS 3404 Elements Of Structural Geology[1]	3	___*GEOS 3704 Igneous & Metamorphic Rocks[1]	3
___*GEOS 3504 Mineralogy[1]	3	___ STAT 3005 Statistical Methods	3
___*MATH 1114 Elementary Linear Algebra	2	___*PHYS 2306 Foundations of Physics	4
___*MATH 1224 Vector Geometry.	2	___Area 2 Elective	3
___*PHYS 2305 Foundations of Physics	4		
Semester Total	15	Semester Total	16

JUNIOR (28 credits)

___PHYS 1055 Introduction to Astronomy	3	___GEOS 1024 Resources and Environment(Area 7)	3
___PHYS 1155 Introduction to Astronomy Lab	1	___GEOS 1124 Resources and Environment Lab	1
___**GEOS 3204 Sed. - Strat. (WI) (Area 1)[1]	3	___GEOS 3114 Meteorology	3
___ BIOL 1105 Principles of Biology	3	___GEOS 3604 Paleontology[1]	3
___ BIOL 1115 Principles of Biology Lab	1	___ BIOL 1106 Principles of Biology	3
___Area 2 Elective	3	___ BIOL 1116 Principles of Biology Lab	1
Semester Total	14	Semester Total	14

SENIOR (31 credits)

___GEOS 3/4XXX Elective[2]	3	___GEOS 3035 Oceanography	3
___GEOS 3/4XXX Elective[2]	3	___**GEOS 4024 Senior Seminar (WI)(Area 1)[1]	3
___HIST 3705 History of Science I (Area 3)	3	___HIST 3706 History of Science II (Area 3)	3
___Area 6 Elective	3	___Free Electives	7
___Free Elective	3		
Semester Total	15	Semester Total	16
		Total Credits	**120**

*Courses required for satisfactory progress by the time the student reaches 72 hours.
**Writing intensive requirement met by Core Curriculum-approved courses.

[1] Required components of Communication Across the Major program for students entering Fall 2005 and after (VIEWS)
[2] Elective component of Communication Across the Major program for students entering Fall 2005 and after (VIEWS)

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

July 2005

B.S. in GEOSCIENCES
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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 including cross-listed and substituted courses; there must be 60 credits outside GEOS.

COLLEGE OF SCIENCE REQUIREMENTS[1]

1. **Area 1--Writing and Discourse** (12 credits) ENGL 1105 (3), 1106 (3), 6 hours from approved writing intensive courses, GEOS 3204 (3) and GEOS 4024 (3).
   1a. (For students entering Fall 2005 and after) Area 1—Communications Across the Curriculum: ENGL 1105, 1106, completion of communications-intensive (CAC) program satisfied by GEOS 1005, 3104, 3204, 3404, 3504, 3604, 3704, 4024, plus two 4000-level GEOS free electives.
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)[2]. 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 language[3] or 2 years in High School and a score of 3 on the AP exam[3], or a two-course (6 credit) first-year sequence.[2]
9. **In major GPA** is calculated on GEOS courses only.

DEPARTMENT OF GEOSCIENCES REQUIREMENTS

1. Mathematical Sciences (13 credits)
   a Math 1114 (2), 1205 (3), 1206 (3), 1224 (2).
   b. Statistics 3005 (3).
2. Natural Sciences other than Geosciences (28 credits)
   a. Chemistry 1035 (3), 1036 (3), 1045 (1), 1046 (1).
   b. Physics 1055 (3), 1155 (1), 2305 (4), 2306(4).
   c. Biology 1105 (3), 1106 (3), 1115 (1), 1116 (1).
3. Geosciences (48 credits)
   a. 1004 (3), 1104 (1), 1005 (1), 1014 (4), 1024 (3), 1124 (1), 2444 (2), 3035 (3), 3104 (3), 3114 (3), 3204 (3), 3404 (3), 3504 (3), 3604 (3), 3704 (3), 4024 (3).
   b. 6 additional credits at GEOS 3000 or 4000 level.
4. History of Science (6 credits)
   HIST 3705 (3), 3706 (3).
5. Free Electives 10 credits for a total of 120.

[1] Core Curriculum and College Scientific Reasoning and Discovery requirements are fulfilled automatically upon completion of the departmental requirements.

[2] These 6 credits cannot be counted toward the 120 credits required for graduation.

[3] These 3 credits count toward the 120 required minimum credits.