To be adopted:

Proposed Changes to Geology Major

PRESENT:

General Geology, Geobiology, Geophysics, and Biogeography Options

Core Requirements

1. Lower-division requirements (64 units)
   a) GEO 001, GEO 002, GEO 003/BIOL 010, GEO 020, GEO 030
   b) BIOL 002 or both BIOL 005A and BIOL 05LA
   c) CHEM 001A, CHEM 001B, CHEM 001C
   d) MATH 009A, MATH 009B, MATH 009C
   e) PHYS 040A, PHYS 040B, PHYS 040C

2. Upper-division requirements (38 units)
   GEO 100, GEO 101, GEO 102, GEO 116, GEO 123, GEO 157

Biogeography Option (120-124 units)

The Biogeography Option utilizes the lower-division curriculum presented below, enhanced by the inclusion of both required and optional Geology course work as indicated below.

1. Lower-division requirements (60 units)
   a) GEO 001, GEO 002, GEO 003/BIOL 010, GEO 020
   b) BIOL 005A, BIOL 05LA, BIOL 005B, BIOL 005C

PROPOSED:

General Geology, Geobiology, Geophysics, and Biogeography Options

Core Requirements

1. Lower-division requirements (64-65 units)
   a) [no change]
   b) [no change]
   c) CHEM 001A, CHEM 001B, CHEM 001C, CHEM 01LA, CHEM 01LB, CHEM 01LC
   d) MATH 008B or MATH 009A, MATH 009B, MATH 009C
   e) [no change]

2. Upper-division requirements (38 units)
   GEO 100, GEO 101, GEO 102, GEO 115, GEO 116, GEO 123

Biogeography Option (119-120 units)

The Biogeography Option utilizes the lower-division curriculum presented below, enhanced by the inclusion of both required and optional Geology course work as indicated below.

1. Lower-division requirements (63 units)
   a) [no change]
   b) [no change]
c) CHEM 001A, CHEM 001B, CHEM 001C

d) MATH 009A, MATH 009B

e) PHYS 002A, PHYS 002B, PHYS 002C; PHYS 02LA, PHYS 02LB, PHYS 02LC; or PHYS 040A, PHYS 040B, PHYS 040C

2. Upper-division requirements (60-61 units)

a) GEO 157, GEO 161, GEO 162, GEO 167, GEO 168, GEO 169

b) Two courses from GEO 151, GEO 152/BIOL 152, GEO 153

c) STAT 100A or STAT 120A

d) Eight (8) units of upper-division courses approved by the undergraduate advisor

e) Sixteen (16) additional units of related upper-division courses approved by the undergraduate advisor

**General Geology Option (33 units)**

1. GEO 118, GEO 124

2. One course from GEO 161, GEO 162, GEO 168, GEO 169

3. GEO 132 or GEO 137

4. One course from GEO 140, GEO 144, GEO 145

5. GEO 151 or GEO 152/BIOL 152

6. Eight (8) additional units of related upper-division courses approved by the undergraduate advisor

**Geobiology Option (41 units)**

1. BIOL 005B, BIOL 005C

2. GEO 118

3. Three courses from GEO 151, GEO 152/BIOL 152, GEO 168, GEO 169

**General Geology Option (33 units)**

1. [no change]

2. One course from GEO 157, GEO 161, GEO 162, GEO 168, GEO 169

3. [no change]

4. [no change]

5. [no change]

6. [no change]

**Geobiology Option (41 units)**

1. [no change]

2. [no change]

3. [no change]
Geophysics Option (41 units)

1. MATH 046
2. PHYS 040D, PHYS 040E
3. GEO 132, GEO 140, GEO 144, GEO 145
4. One additional 4-unit upper-division course in Geosciences
5. Two upper-division physical science courses approved by the undergraduate advisor

Geophysics Major

The following are major requirements for the B.S. in Geophysics. All students majoring in Geophysics are normally required to take this core curriculum

1. Lower-division requirements (69 units)
   a) CHEM 001A, CHEM 001B, CHEM 001C
   b) GEO 001, GEO 030
   c) MATH 009A, MATH 009B, MATH 009C, MATH 010A, MATH 010B, MATH 046
   d) PHYS 040A, PHYS 040B, PHYS 040C, PHYS 040D, PHYS 040E

2. Upper-division requirements (53-54)
   a) GEO 116, GEO 140, GEO 145
   b) Two of GEO 144, PHYS 111, PHYS 177
   c) PHYS 130A, PHYS 130B, PHYS 135A, PHYS 135B, PHYS 136

4. Sixteen (16) additional units of related upper-division courses approved by the undergraduate advisor

Geophysics Option (41 units)

1. [no change]
2. [no change]
3. [no change]
4. [no change]
5. [no change]
d) PHYS 139L or 4 units of PHYS 142L  

d) [no change]  

e) Eight (8) units of upper-division physical sciences courses, which may include up to 4 units of Senior Thesis (GEO 195A, GEO 195B, GEO 195C) or up to 8 units of independent internship (GEO 198I).  
e) Four (4) units of upper-division physical sciences courses, which may include up to 4 units of Senior Thesis (GEO 195A, GEO 195B, GEO 195C) or up to 4 units of independent internship (GEO 198I).

**JUSTIFICATION:**

The changes reflect the new approved Math 8/9 series changes, the new approved Chem 1 series changes, as well as the new basic mapping course Geo 115 and modified structural geology course Geo 116 (see individual course proposal justifications for those courses). To balance the slightly increased unit impact of Geo 115 on non-Biogeography option students, the GIS course Geo 157 will now be mandatory only for the Biogeography option, becoming optional for other options in our Majors.

**APPROVALS:**

Approved by the faculty of the Department of Earth Sciences: Dec. 14, 2005  
Approved by CNAS Executive Committee: April 18, 2006  
Approved by the Committee on Educational Policy: May 2, 2006