To be adopted: Proposed changes to the Earth Science major.

Earth Sciences Major

All courses in Geosciences that are prerequisites for other courses in the major must be passed with a grade of “C-” or better before proceeding in the sequence. For example, GEO 001 is a prerequisite for GEO122.

The department offers four concentrations to majors in Earth Sciences: Geosystems, Climate Change, Geophysics, and Geobiology. All students majoring in Earth Sciences are normally required to take the core curriculum.

Geosystems, Climate Change, Geobiology, and Geophysics Concentrations

Core Requirements (61-66 units)

1. Lower division core requirements (48-53 units)

a) GEO 001
b) GEO 002 or GEO 009 or GEO 011
c) GEO 003/BIOL 010
d) GEO 004 or GEO 007 or GEO 008 or GEO 010 or GEO 012 or GEO 080
e) BIOL 005A and BIOL 005LA or BIOL 020
f) Either CHEM 001A and CHEM 01LA or CHEM 01HA and CHEM 01HLA, either CHEM 001B and CHEM 01LB or CHEM 01HB and CHEM 01HLB
g) MATH 007A or MATH 009A, MATH 007B or MATH 009B, MATH 046
h) Either PHYS 040A, PHYS 040B or PHYS 002A and PHYS 002LA, PHYS 002B
Students interested in elective classes in Geophysics are recommended to take PHYS 040C or PHYS 002C. Students interested in elective classes in Geochemistry are recommended to take CHEM 001C.

### 2. Upper division core requirements (13 units)

a) GEO 111, GEO 115, GEO 157

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### Geosystems Concentration

#### 1. Upper division requirements (35–44 units)

a) GEO 101A, GEO 101B, GEO 118

b) Three of GEO 100, GEO 116, GEO 122, GEO 132, GEO 151, GEO 152, GEO 162

c) Three of GEO 100, GEO 116, GEO 122, GEO 132, GEO 136, GEO 137, GEO 138, GEO 140, GEO 144, GEO 145, GEO 147, GEO 151, GEO 152, GEO 160, GEO 161, GEO 162, GEO 169, GEO 180, GEO 181, STAT 100A, STAT 100B

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Students interested in pursuing professional licensure through the California Geologist In Training (GIT) are advised to take the Geology Major.

### Climate Change Concentration

#### 1. Lower division requirements (5 units)

a) CHEM 001C and CHEM 001LC, or CHEM 001HC and CHEM 001HLC

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#### 2. Upper division requirements (32–36 units)

a) GEO 160, GEO 161

b) Three of GEO 136, GEO 137, GEO 162, ENSC 102

c) Three of GEO 100, GEO 101A and GEO 101B, GEO 116, GEO 118, GEO 122, GEO 132, GEO 136, GEO 137, GEO 140, GEO 144, GEO 145, GEO 147, GEO 151, GEO 152, GEO 162, GEO 169, GEO 180, GEO 181, STAT 100A, STAT 100B

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No Change
Geobiology Concentration
1. Lower division requirements (8 units)
   a) BIOL 005B, BIOL 005C

2. Upper division requirements (32–36 units)
   a) GEO 151 and GEO 152/BIOL 152
   b) Three of GEO 136, GEO 137, GEO 161, GEO 169, ENTM/BPSC/BIOL 112, BIOL 151
   c) Three of GEO 100, GEO 101A and GEO 101B, GEO 116, GEO 118, GEO 122, GEO 132, GEO 136, GEO 137, GEO 140, GEO 144, GEO 145, GEO 147, GEO 160, GEO 161, GEO 162, GEO 169, GEO 180, GEO 181, STAT 100A, STAT 100B

Geophysics Concentration
1. Lower division requirements (5 units)
   a) PHYS 002C and PHYS 002LC, or PHYS 040C

2. Upper division requirements (33–38 units)
   a) GEO 140, GEO 145
   b) Three of GEO 116, GEO 118, GEO 144, GEO 147

No Change

Upper division requirements (34–38 units)

2. Upper division requirements (32–37 units)
   a) No Change
   b) No Change
   c) Three of GEO 100, GEO 116, GEO 118, GEO 122, GEO 132, GEO 136, GEO 137, GEO 140, GEO 144, GEO 145, GEO 147, GEO 160, GEO 161, GEO 162, GEO 169, GEO 180, GEO 181, STAT 155
   or
   GEO 101A and GEO 101B, and two of GEO 100, GEO 116, GEO 118, GEO 122, GEO 132, GEO 136, GEO 137, GEO 140, GEO 144, GEO 145, GEO 147, GEO 151, GEO 152, GEO 162, GEO 169, GEO 180, GEO 181, STAT 155
c) Three of GEO 100, GEO 101A and GEO 101B, GEO 116, GEO 118, GEO 122, GEO 132, GEO 136, GEO 137, GEO 144, GEO 147, GEO 151, GEO 152, GEO 160, GEO 161, GEO 162, GEO 169, GEO 180, GEO 181, STAT 100A, STAT 100B

or

GEO 101A and GEO 101B, and two of GEO 100, GEO 116, GEO 118, GEO 122, GEO 132, GEO 136, GEO 137, GEO 144, GEO 147, GEO 151, GEO 152, GEO 160, GEO 161, GEO 162, GEO 169, GEO 180, GEO 181, STAT 155

Justification:

The Statistics Department has decided to renumber the following courses to lower division: STAT 100A to STAT 010 and STAT 100B to STAT 011. We therefore retain and/or substitute STAT 155 as the only optional upper division course in our requirements.

GEO 101A and GEO 101B were two 3-unit classes proposed to replace an older 5-unit class, GEO 101, and either 3-unit class on its own is not sufficient as a replacement for that older class in terms of the material covered. We adopt the wording above to maintain that equivalency.

We re-checked the unit counts to account for the GEO 101A/B changes, and additionally found that some optional 5-unit classes were double counted as electives for some concentrations.

Approvals:
Approved by the faculty of the Department of Earth and Planetary Sciences: October 21, 2020
Approved by the Executive Committee of the College of Natural and Agricultural Sciences: January 5, 2021
Approved by the Committee on Educational Policy: April 5, 2021