



Department of Geosciences

BS in Earth Science

Education, Research, and Service in Geography, Geology, and Earth Science

Earth Science Education Option

Student's Name _____ Advisor _____ Date _____

University Baccalaureate Core Course (BCC) Requirements (48 credits + WIC course)

Courses must be from BCC approved list. No single course may be used to satisfy more than one area of the Baccalaureate Core even though some courses are approved for more than one area. Up to 15 credits required in the major can also be used to satisfy BCC requirements.

Skills (15 credits)

- (9) ___ WR 121 ___ WR II ___ Writing/Speech III
- (3) ___ MTH 105 or higher (MTH 251 required)
- (3) ___ Fitness
- ___ Writing Intensive Course (WIC) (included in credits within the major; GEO 409 required)

Perspectives (27 credits; must be from BCC approved list; no more than two courses from the same department)

- (4) ___ Physical Science with Lab (GEO 101 or 201 required)
- (4) ___ Biological Science with Lab
- (4) ___ Physical or Biological Science with Lab (GEO 102 or 202 required)
- (3) ___ Western Culture
- (3) ___ Cultural Diversity
- (3) ___ Literature and the Arts
- (3) ___ Social Processes and Institutions
- (3) ___ Difference, Power and Discrimination

Synthesis (6 credits; upper division courses from BCC approved list and from different departments)

- (3) ___ Contemporary Global Issues
- (3) ___ Science, Technology, and Society (CSS/GEO 335 required)

Earth Science Major Requirements (81-85 credits)

Substitutions to these requirements can only be made with the written approval of the Head Advisor. Any substitutions should be noted in your file.

Basic Science Skills (30-32 credits):

- (4) ___ MTH 251
- (4) ___ ST 351 or ST 314
- (4) ___ ST 352 or MTH 252
- (10) ___ CH 121 or CH 221 ___ CH 122 or CH 222
- (8-10) ___ PH 201 or PH 211 ___ PH 202 or PH 212

Geosciences Core Courses (25-26 credits):

- (4) ___ GEO 101 The Solid Earth or GEO 201 Physical Geology
- (4) ___ GEO 102 The Surface of the Earth or GEO 202 Earth System Science
- (4) ___ GEO 322 Surface Processes
- (4) ___ CSS 305 Principles of Soil Science
- (3) ___ CSS/GEO 335 Water Science and Policy
- (3) ___ OC 331 Intro to Oceanography
- (3-4) ___ ATS 210 Intro to Atmospheric Sci (3) or GEO 203 Evolution of Planet Earth (4) or GEO 323 Climatology (4)

Earth Science Techniques (7-8 credits):

- (4) ___ GEO 301 Map and Image Interpretation
- (3-4) ___ GEO 365 Introduction to GIS (4) or GEO 265 GIS Practicum (3)

Upper Division Earth Science (15 credits, with at least 2 courses from one focus):

Geology Focus:

- (4) ___ GEO 310 Mineralogy
- (4) ___ GEO 315 Petrology
- (4) ___ GEO 340 Structural Geology
- (4) ___ GEO 430 Geochemistry

Soil Science Focus:

- (4) ___ CSS 435 Physics of Soil Ecosystems
- (4) ___ CSS 445 Geochemistry of Soil Ecosystems
- (4) ___ CSS 455 Biology of Soil Ecosystems
- (4) ___ CSS 466 Soil Morphology and Classification

Oceanic and Atmospheric Sciences Focus:

- (4) ___ ATS 420 Atmospheric Science
- (3) ___ GEO 431 Applied Climatology
- (3) ___ OC 332 Coastal Oceanography
- (3) ___ OC 430 Physical Oceanography
- (3) ___ OC 440 Biological Oceanography
- (3) ___ OC 450 Chemical Oceanography
- (3) ___ OC 460 Geological Oceanography

Water Science Focus:

- (4) ___ CE 412 Hydrology (note the prereqs) or FE 430 Watershed Processes
- (3) ___ GEO 432 Applied Geomorphology
- (5) ___ FW 456 Limnology
- (3) ___ GEO 483 Snow Hydrology
- (4) ___ GEO 487 Hydrogeology

Capstone Experience (4 credits)

- (1) ___ GEO 407 Professional Seminar
 - (3) ___ GEO 409 Contemp. Earth Sci. Issues (WIC)
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3. Earth Science Education Option (31-35 credits)

3a. Required Courses (4 credits)

- (4) GEO 203 Evolution of Planet Earth (must be taken in core; not counted here)
- (4) PH 104 Descriptive Astronomy

3b. Science Education Techniques (15 credits; Prep for Graduate Initial Licensure)

- (3) SED 309 Field Practicum in Science and Mathematics or equivalent
- (3) SED 409 Field Practicum in Science and Mathematics or equivalent
- (3) SED 412 Technology Foundations for Teaching Math and Science
- (3) SED 413 Science Materials and Laboratories
- (3) SED 459 Science and the Nature of Inquiry

3c. Science Content (12-16 credits; choose one of the following emphases)

Physics of the Earth Emphasis:

- (8-10) PH 201, 202 or 211, 212 (Core requirement)
- (4-5) PH 203 or PH 213 General Physics
- (3) PH 313 Energy Alternatives
- (3) PH 331 Sound, Hearing, and Music
- (3) PH 332 Light, Vision, and Color
- (4) GEO 463 Geophysics and Tectonics

Chemistry of the Earth Emphasis:

- (10) CH 121, 122 or 221, 222 (Core requirement)
- (5) CH 123 or 223 General Chemistry
- (3) CH 390 Environmental Chemistry
- (4) GEO 430 Geochemistry

Mathematics Emphasis:

- (4) MTH 251 (Core requirement)
- (8) MTH 211, 212
- (4) MTH 390
- (4) ST 351 (Core requirement)
- (4) ST 352

3d. Additional Earth Science Content Breadth (Recommended only; not required for degree)

- (3) GEO 305 Living with Active Cascade Volc.
- (3) GEO 307 Geology of National Parks
- (3) GEO 308 Global Change and Earth Sciences
- (3) GEO 380 Earthquakes in the Pacific NW
- (4) GEO 427 Volcanology
- (3) HSTS 415 Theory of Evolution and Foundation of Modern Biology
- (3) OC 332 Coastal Oceanography
- (3) Z 315 Dinosaur Biology
- (3) Z 427 Paleobiology

4. OSU Graduation Requirements

- 180 total credits
- 60 upper division (course numbered 300 or higher) credits
- 2.00 minimum overall GPA
- 2.00 minimum GPA in major
- 24 upper division credits within the major
- 15 of the upper division credits in the major from regularly listed courses
- Foreign Language (2 years high school or 2 terms college)
- Residence requirement--last 45 credits of course work must be from OSU