

Integrative Geosciences

PREREQUISITE COURSES: Most of the courses have prerequisites, so be sure to check the undergraduate catalog for prerequisites for the courses you select. Also, note that GEOL105; or GEOL 103 and 107; or GEOL102 is a prerequisite for a number of required core courses.

REQUIRED CORE COURSES:

- All of the following are required core courses: GEOL 250, 251, 252, and 253 (13 Credits)
 - Choose one course from the following group: (3 or 4 Credits)
GEOL 228, 229, or 234
 - Choose one course from the following group: (3 or 4 Credits)
GEOG 246, NRME 219 or NRME 277
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TRACKS: Tracks are an opportunity to develop an in-depth understanding of how knowledge and scientific thinking in several fields are necessary to the development of an integrated understanding of Earth. Choose one of the following tracks: (Courses listed on back)

- Geobiology (10-12 Credits)
- Surface Earth Processes (9-10 Credits)
- Physics of the Earth (9 Credits)

Students interested in geosciences, but not in a specific track, can create their own individualized major in geosciences, as well.

RESEARCH, INFORMATION LITERACY, AND APPLIED COURSES

REQUIREMENTS: (6 Credits) Students are advised to complete coursework in this section after selecting a track so that the most appropriate option is chosen. You may choose one the following options:

- Option 1: 6 Credits with at least one course from each of the following groups:
 - ❖ Group 1: CE 271, EEB 293W, GEOG 232, GEOL 213, GEOL 257, and MARN 212
 - ❖ Group 2: GEOL 293/294, GEOL 296, and GEOL 299. Students can petition for parallel, geoscience-relevant courses in other departments to be considered as substitutes for Group 2 requirements.
 - Option 2: 6 Credits of GEOL 212 – Field Geology. Students can petition for geoscience-relevant field courses offered by other universities to be considered as substitutes for GEOL 212.
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CAPSTONE WRITING COURSE REQUIREMENT: (3 Credits) As part of the requirements, every Individualized major must satisfy a Capstone requirement. Choose one of the following courses: INTD 295W or GEOL 297W. Students can petition for parallel, geoscience-relevant courses in other departments to be considered as substitutes for GEOL 297W.

ADMISSION: Your application for admission should include (1) a plan of study; (2) a statement of purpose; (3) a copy of your unofficial transcript. Your statement of purpose should define the academic focus and coherence of the proposed major. Your faculty advisors should see and approve a final version of both your plan of study and statement of purpose.

TRACK COURSE REQUIREMENTS

GEOBIOLOGY TRACK:

Choose three courses from the following group:

- EEB 244 or EEB 244W General Ecology (4 Credits)
- EEB 245 or EEB 245W Evolutionary Biology (3 or 4 Credits)
- MCB 229 Fundamentals of Microbiology (4 Credits)
- MARN 236 Marine Microbiology (3 Credits)

SURFACE EARTH PROCESSES TRACK:

Choose one course from each of the following groups:

(No more than one course can be GEOL)

GROUP 1:

- EEB 209W Soil Degradation and Conservation (3 Credits)
- GEOG 230 Fluvial Geomorphology (3 Credits)
- NRME 211 Watershed Hydrology (3 Credits)
- PLSC 250 Soils (3 Credits)
- PLSC 259 Soil Chemistry (3 Credits)

GROUP 2:

- GEOL 234 Introduction to Ground-Water Hydrology (if not taken as a required core course above) (4 Credits)
- MARN 200 The Hydrosphere (3 Credits)
- MARN 220 Environmental Reaction and Transport (4 Credits)
- NRME 218 Water Resources Assessment, Development, and Management (3 Credits)
- NRME 246 Water Quality Management (3 Credits)

GROUP 3:

- GEOL 228 Applied Geophysics for Geologists (if not taken as required core course above) (3 Credits)
- GEOL 229 Engineering and Environmental Geology (if not taken as required core course above) (3 Credits)
- MARN 282 Coastal Pollution and Bioremediation (3 Credit)

PHYSICS OF THE EARTH TRACK:

Choose three courses from the following group: (No more than one course can be GEOL)

- GEOL 274 Physics of the Earth's Interior (3 Credits)
- GEOL 278 Applied and Environmental Geophysics (3 Credits)
- MARN 235 Environmental Fluid Dynamics (3 Credits)
- MARN 270 Descriptive Physical Oceanography (3 Credits)
- PHYS 220 Computational Physics (3 Credits)

To get more information or talk to faculty advisors about the Individualized Major in Integrative Geosciences contact:

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