Environmental Science Major Requirements

All courses for the major must be taken for a grade (C- or better).

Up to 16 upper division credits (usually four courses) may be applied to a 2nd major. You must meet with a student or faculty adviser at least two terms prior to graduation.

Check pre-requisites for all upper division courses.

AREA 1. Environmental Studies Core Requirements (2 courses)

ENVS 201 (Soc Sci) ________ ENVS 203 (Humanities) ________

AREA 2. Math and Statistics Requirements (4 courses)

Mathematics - take one of the following sequences:

MATH 246 and 247 – Calculus for Biological Sciences I, II
MATH 251 and 252 – Calculus I, II

Statistics - take one of the following:

GEOG 495 Geographic Data Analysis
GEOG 418 Analysis of Earth & Env Sciences
MATH 425 Statistical Methods
SOC 312 Quantitative Methods in Sociology
Other approved course listed on tip sheet

Analytical Approaches - take one of the following:

BI 473 Quantitative Ecology
ENVS 427 Environmental & Ecological Monitoring
GEOG 481 GIScience I
LA 413 Analyzing Land Systems
Other approved course listed on tip sheet

AREA 3A. Natural Science Requirements (17 courses)

Natural Science courses are divided into two major categories: a) life sciences courses and b) earth and physical science courses. Choose one as a focal area and complete two, three-course introductory sequences (six courses) and an additional six upper division (300 or 400 level) courses in that focal area. In the non-focal area, you must complete five courses, at least two of which must be upper division.

LIFE SCIENCES  □ Focal Area  or  □ Non- Focal Area

Lower division introductory sequences:

Biology: BI 211-213
Chemistry: CHEM 221-223
(Accompanying lab courses, CHEM 227-229, are strongly recommended)
CHEM 111, BI 211, BI 213 (if non-focal area)

Upper division electives:

ANTH 341 Food Origins
ANTH 361 Human Evolution
ANTH 362 Human Biological Variation {IP}
ANTH 375 Primates in Ecological Communities
ANTH 446 Practical Archaeobotany
ANTH 463 Primate Behavior
ANTH 466 Primate Feeding and Nutrition
ANTH 472 Primate Conservation Biology
BI 306 Pollution Biology

BI 307 Forest Biology
BI 309 Tropical Diseases of Africa
BI 330/331 Microbiology and Lab
BI 357 Marine Biology
BI 359 Plant Biology
BI 370 Ecology
BI 374 Conservation Biology
BI 375 Biological Diversity
BI 380 Evolution
BI 390 Animal Behavior
BI 432 Mycology
BI 442 Systematic Botany
BI 448 Field Botany
BI 451 Invertebrate Zoology [OIMB] (if 8 credits, then counts as 2 courses)
BI 452 Insect Biology
BI 454 Estuarine Biology [OIMB] (5 credits)
BI 455 Marine Birds and Mammals [OIMB] (6 credits)
BI 457 Marine Biology [OIMB] (8 credits, counts as 2 courses)
BI 458 Biological Oceanography [OIMB] (5 credits)
BI 459 Field Ornithology
BI 468 Amphibians & Reptiles of Oregon
BI 471 Population Ecology
BI 472 Community Ecology
BI 474 Marine Ecology [OIMB] (8 credits, counts as 2 courses)
BI 476 Terrestrial Ecosystem Ecology
BI 478/479 Neotropical Ecology in Ecuador (8 credits, counts as 2 courses)

CHEM 331 Organic Chemistry I
CHEM 335 Organic Chemistry II
CHEM 336 Organic Chemistry III
GEOG 323 Biogeography
GEOG 423 Advanced Biogeography
GEOG 433 Fire and Natural Disturbances
LA 465 Landscape Ecology
Other approved course listed on tip sheet

EARTH & PHYSICAL SCIENCES  □ Focal Area  or  □ Non- Focal Area

Lower division introductory sequences:

Earth Sciences: GEOL 101-103 or 201-203
Physical Sciences: PHYS 201-203
(ACcompanying lab courses, PHYS 204-206, are strongly recommended)
GEOG 141 (if non-focal area)

Upper division electives:

ENVS 350 Ecological Footprint of Energy Generation
ENVS 465 Wetland Ecology & Management
ENVS 477 Soil Science
GEOG 321 Climatology
GEOG 322 Geomorphology
GEOG 360 Watershed Science & Policy
GEOG 361 Global Environmental Change
GEOG 421 Advanced Climatology
GEOG 425 Hydrology and Water Resources
GEOG 427 Fluvial Geomorphology
GEOG 430 Long-Term Environmental Change
GEOG 432 Climatological Aspects of Global Change
GEOG 461 Environmental Alteration
GEOG 482 GIScience II
<table>
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<tr>
<th>Course Code</th>
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<tr>
<td>GEOG 485</td>
<td>Remote Sensing I</td>
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<td>GEOG 486</td>
<td>Remote Sensing II</td>
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<td>GEOG 491</td>
<td>Advanced GIS</td>
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<tr>
<td>GEOL 304, 305, 306, 307 OR 308</td>
<td>(no more than one course of GEOL 30X)</td>
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<tr>
<td>GEOL 310</td>
<td>Earth Resources &amp; Environment</td>
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<td>GEOL 311</td>
<td>Earth Materials (5 credits)</td>
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<td>GEOL 315</td>
<td>Earth Physics</td>
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<td>GEOL 316</td>
<td>Introduction to Hydrogeology</td>
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<td>GEOL 331</td>
<td>Mineralogy (5 credits)</td>
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<td>GEOL 332</td>
<td>Introduction to Petrology (5 credits)</td>
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<td>GEOL 334</td>
<td>Sedimentology and Stratigraphy</td>
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<td>GEOL 350</td>
<td>Structural Geology (3 credits)</td>
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<td>Geological Hazards</td>
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<td>GEOL 425</td>
<td>Geology of Ore Deposits</td>
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<td>GEOL 431</td>
<td>Paleontology I: Paleozoic Marine Fossils</td>
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<td>GEOL 433</td>
<td>Paleobotany</td>
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<td>GEOL 434</td>
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<td>Hydrogeology</td>
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<td>GEOL 452</td>
<td>Neotectonics and Quaternary Geology</td>
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<td>GEOL 462</td>
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<td>GEOL 473</td>
<td>Isotope Geochemistry</td>
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<td>Other approved course listed on tip sheet</td>
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**AREA 3B. Social Science, Policy, Humanities and Sustainable Design and Practice Courses (3 courses)**

All ESCI majors must complete 1 course from 3 of the 4 areas below:

**Social Science - Core Courses:**
- ENVS 435 Environmental Justice
- ENVS 450 Political Ecology
- ENVS 455 Sustainability
- GEOG 341 Population & Environment [SSC] [IC]
- SOC 416 Issues in Sociology of the Environment (contact instructor for approval)

**Policy - Core Courses:**
- ENVS 335 Allocating Scarce Environmental Resources [SSC]
- PPPPM 443 Natural Resource Policy
- PPPPM 444 Environmental Policy
- PS 367 Science and Politics of Climate Change [SSC]
- PS 477 International Environmental Politics

**Humanities - Core Courses:**
- ENG 469 Literature and the Environment
- ENVS 345 Environmental Ethics [A&L]
- HIST 378 American Environmental History to 1890 [SSC] [IC]
- HIST 379 American Environmental History, 1890-Present [SSC] [AC]
- HIST 473 American Environmental History
- PHIL 340 Environmental Philosophy [A&L]

**Sustainable Design and Practice - Core Courses:**
- ARCH 430 Architectural Contexts: Place & Culture
- ARCH 431 Community Design
- ARCH 435 Principles of Urban Design
- ENVS 467 Sustainable Agriculture
- LA 440 Introduction to Landscape Planning Analysis
- LA 441 Principles of Applied Ecology
- PPPPM 442 Sustainable Urban Development
- PPPPM 445 Green Cities

**AREA 4. Environmental Issues course (1 course)**
- ENVS 411 or 425 Issues course, or other approved course listed on tip sheet

**AREA 5. Practical Learning Experience (1 course or 4 credits)**
All ESCI majors must complete 4 upper division credits of practical learning (eg, ENVS 401, 404, 429 or other approved course), which can be satisfied in any of the following ways:
- Environmental Leadership Program (ENVS 429 – application required)
- Internship (ENVS 404 – approval by Internship Coordinator required)
- IE3 international internship (OINT 488)
- Pre-approved course taken abroad with substantial scientific research component
- One term of study at a field station such as OIMB
- One term of research with a UO faculty member in environmental science (ENVS 401)
- Honors Thesis with a substantial environmental science focus (ENVS 403 w/ adviser approval)
- Other science-oriented experiential learning opportunities as approved by adviser