

## Environmental Science Major Requirements

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

**DO NOT** take course for the major P/NP!

Up to 16 upper division credits (usually four courses) may be applied to a 2<sup>nd</sup> 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

\_\_\_\_\_ GEOL 418 Data Analysis for Earth & Env Sciences

\_\_\_\_\_ MATH 425 Statistical Methods I

\_\_\_\_\_ SOC 312 Statistical Analysis in Sociology

\_\_\_\_\_ Other approved course listed on tip sheet.

Analytical Approaches - take one of the following:

\_\_\_\_\_ 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)

\_\_\_\_\_ CH 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 Pollination 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 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)

\_\_\_\_\_ CH 331 Organic Chemistry I

\_\_\_\_\_ CH 335 Organic Chemistry II

\_\_\_\_\_ CH 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 461 Environmental Alteration

\_\_\_\_\_ GEOG 482 GIScience II

\_\_\_\_\_ GEOG 485 Remote Sensing I

\_\_\_\_\_ GEOG 486 Remote Sensing II

- \_\_\_\_\_ GEOG 491 Advanced GIS
- \_\_\_\_\_ GEOL 304, 305, 306, 307 OR 308 (no more than one course of GEOL 30X)
- \_\_\_\_\_ GEOL 310 Earth Resources & Environment
- \_\_\_\_\_ GEOL 311 Earth Materials (5 credits)
- \_\_\_\_\_ GEOL 315 Earth Physics
- \_\_\_\_\_ GEOL 316 Introduction to Hydrogeology
- \_\_\_\_\_ GEOL 331 Mineralogy (5 credits)
- \_\_\_\_\_ GEOL 332 Introduction to Petrology (5 credits)
- \_\_\_\_\_ GEOL 334 Sedimentology and Stratigraphy
- \_\_\_\_\_ GEOL 350 Structural Geology (3 credits)
- \_\_\_\_\_ GEOL 353 Geological Hazards
- \_\_\_\_\_ GEOL 425 Geology of Ore Deposits
- \_\_\_\_\_ GEOL 431 Paleontology I: Paleozoic Marine Fossils
- \_\_\_\_\_ GEOL 433 Paleobotany
- \_\_\_\_\_ GEOL 434 Vertebrate Paleontology
- \_\_\_\_\_ GEOL 435 Paleopedology
- \_\_\_\_\_ GEOL 438 Geobiology
- \_\_\_\_\_ GEOL 441 Hillslope Geomorphology
- \_\_\_\_\_ GEOL 451 Hydrogeology
- \_\_\_\_\_ GEOL 452 Neotectonics and Quaternary Geology
- \_\_\_\_\_ GEOL 462 Environmental Geomechanics
- \_\_\_\_\_ GEOL 468 Intro Seismology
- \_\_\_\_\_ GEOL 472 Aqueous-Mineral-Gas Equilibria
- \_\_\_\_\_ GEOL 473 Isotope Geochemistry
- \_\_\_\_\_ Other approved course listed on tip sheet

**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 [>2] {IC}
- \_\_\_\_\_ SOC 416 Issues in Sociology of the Environment (contact instructor for approval)

**Policy - Core Courses:**

- \_\_\_\_\_ ENVS 335 Allocating Scarce Environmental Resources [>2]
- \_\_\_\_\_ PPM 443 Natural Resource Policy
- \_\_\_\_\_ PPM 444 Environmental Policy
- \_\_\_\_\_ PS 367 Science and Politics of Climate Change [>2]
- \_\_\_\_\_ PS 477 International Environmental Politics

**Humanities - Core Courses:**

- \_\_\_\_\_ ENG 469 Literature and the Environment
- \_\_\_\_\_ ENVS 345 Environmental Ethics [>1]
- \_\_\_\_\_ HIST 378 American Environmental History to 1890 [>2] {AC}
- \_\_\_\_\_ HIST 379 American Environmental History, 1890-Present [>2] {AC}
- \_\_\_\_\_ HIST 473 American Environmental History
- \_\_\_\_\_ PHIL 340 Environmental Philosophy [>1]

**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
- \_\_\_\_\_ PPM 442 Sustainable Urban Development
- \_\_\_\_\_ PPM 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