

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 2nd major.

You must meet with a Tykeson SDS-Flight Path adviser at least two terms prior to graduation.

Check pre-requisites for all upper division courses.

AREA 1. Lower Division Environmental Studies 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

_____ Other approved course listed on tip sheet.

Analytical Approaches - take one of the following:

_____ ENVS 427 Environmental & Ecological Monitoring

_____ GEOG 481 GIScience I

_____ 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 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 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 433 Fire and Natural Disturbances

_____ 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 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 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 433 Paleobotany
- _____ GEOL 434 Vertebrate Paleontology
- _____ GEOL 435 Paleopedology
- _____ GEOL 438 Geobiology
- _____ GEOL 441 Hillslope Geomorphology
- _____ GEOL 451 Hydrogeology
- _____ 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 - Foundation 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 - Foundation Courses:

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

Humanities - Foundation 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}
- _____ PHIL 340 Environmental Philosophy [>1]

Sustainable Design and Practice - Foundation Courses:

- _____ 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
- _____ PPPM 442 Sustainable Urban Development
- _____ PPPM 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, 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)
- _____ Honors Thesis (ENVS 403 – w/ advisor approval)
- _____ Other experiential learning opportunity as approved by advisor