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
--------- ERTH 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 395 Tropical Ecology
--------- 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: ERTH 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
--------- ERTH 304, 305, 306, 307 OR 308 (no more than one course of ERTH 30X)
--------- ERTH 310 Earth Resources & Environment
--------- ERTH 311 Earth Materials (5 credits)
--------- ERTH 315 Earth Physics
--------- ERTH 316 Introduction to Hydrogeology
--------- ERTH 331 Mineralogy (5 credits)
**AREA 3A. Geological Sciences Courses (15 credits)**

- ERTH 332 Introduction to Petrology (5 credits)
- ERTH 334 Sedimentology and Stratigraphy
- ERTH 350 Structural Geology (3 credits)
- ERTH 353 Geologic Hazards
- ERTH 425 Geology of Ore Deposits
- ERTH 433 Paleobotany
- ERTH 434 Vertebrate Paleontology
- ERTH 435 Paleopedology
- ERTH 438 Geobiology
- ERTH 441 Hillslope Geomorphology
- ERTH 451 Hydrogeology
- ERTH 462 Environmental Geomechanics
- ERTH 468 Intro Seismology
- ERTH 472 Aqueous-Mineral-Gas Equilibria
- ERTH 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]
- HIST 473 American Environmental History: Topic
- 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
- ENVS 467 Sustainable Agriculture
- 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