# ENVIRONMENTAL SCIENCE & MANAGEMENT, 120 CREDITS

Students Starting: Fall 2010

Drafted 4-8-10

*College of the Environment & Life Sciences (CELS)*

**Department of Natural Resources Science**

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**Department:** Natural Resources Science, 401-874-2495, http://www.nrs.uri.edu
**Credits:** 120

**The Major:** Environmental Science and Management is a multi-disciplinary major, incorporating course work in water resources, wetland ecology, wildlife biology, soil science, forestry, and land use/environmental quality relationships with other disciplines. This is a comprehensive major that includes a solid background in the basic sciences and exposure to a broad array of subject matter relating to environmental science and management. This major provides solid preparation for more specialized study at the graduate level. There are three minor fields of study available within the Department of Natural Resources Science at URI that may serve as focus areas for students in the Environmental Science and Management major: GIS/Remote Sensing; Soil-Environmental Science; and Wildlife and Conservation Biology.

**Careers:** Graduates are employed by natural resources agencies at the state or federal level, nongovernmental conservation organizations, and environmental consulting firms. Examples of jobs include: environmental planner, environmental/wildlife researcher, wildlife biologist, cartographer, biology teacher, refuge manager, wetland biologist/ecologist, hydrologist, environmental scientist, soil conservationist and forest/park ranger. Good grades, hands-on experience, a strong technical background, and a firm commitment to sound environmental management are the key elements to being selected for challenging positions in natural resource fields.

**Transfer out of UC:** Must have completed at least 24 credits, minimum GPA of 2.00, and received permission from the University College Major Advisor.

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**STUDENT**_____ **ID**_____ **ADVISOR**_____

## ESMG Checksheet

**General Education** (36 credits)

EC[D]: COM 100_____(3) or COM 110_____(4)
ECw: WRT 104, 105, or 106____(3)
MQ: (3 cr. from Basic Sciences below)
N: (6 cr. from Basic Sciences below)
S (6 cr. from NRS 100* and EEC 105 below)
L: _____(3) _____(3)
A: _____(3) _____(3)
FC: _____(3) _____(3)
(**Note: 15 cr. from L, A and FC**)

**Intro. to URI and NRS** (2 credits)

URI 101 _____(1) NRS 101___(1)

**Intro. Professional Courses** (17)

NRS 100_____(3) NRS 212___(3)
NRS 223_____(3) NRS 200___ (1)
EEC 105_____(3) GEO 103___(4)

**Basic Sciences** (29-30 credits.; 9 credits. applicable to General Education requirements)*

BIO 101_____(4)
BIO 102_____(4)
PHY 109, 110_____(4) **
CHM 101,102_____(4)
CHM 112,114____(4) or MIC211_(4) or BCH311__(3)
CHM 124, 126 _____(4)
MTH 131_____(3)
STA 308___(3) or STA 409___(3)

*Six credits apply to Division N and three credits apply to Division MQ. **PHY 111,185 and PHY 112,186 needed for those interested in career in secondary education.

**Concentration** (24 credits)

At least 3 credits must be taken from each of the following categories. Remaining concentration credits may be selected from any of the categories or from Experiential Learning Courses. Up to 6 credits of Letter Grade Experiential Learning Courses may be taken as Concentration Courses (see box)

**1. Biological or Ecological Science**:

NRS 401_____(4) NRS 423,425____(4,1)
BIO 455,457_____(3,1)

**2. Watersheds and Environmental Quality**:

NRS 361_____(4) NRS 412_____(3)
NRS 426_____(3)

**3. Methods in Environmental Science:**

NRS 409_____(3) NRS 410_____(3)
NRS 415_____(3) NRS 471_____(3)

**4. Natural Resources Management:**

NRS 305_____(3) NRS 406_____(3)
NRS 407_____(3) NRS 301_____(3)

**5. Land Use Management:**

NRS 424_____(4) NRS 450_____(3)
NRS 445_____(4) NRS 452_____(1)

**Supporting Electives** (20-21 credits)

At least 9 credits must be NRS courses. These courses may be chosen from: a) the following list (see back); b) courses in the Concentration Courses list that were not used for Concentration; or c) up to 9 credits of Letter Grade or S/U Experiential Learning Courses (see box). Senior Colloquium (NRS 480, 2 cr.) is strongly recommended, and we urge you to take EEC and GEO courses

_____( ) _____ ( ) _____( )

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**Free Electives** (6)

_____( ) _____ ( ) _____( )

**Note:** Concentration and Supporting Electives must total at least 44 credits. Credits for graduation must equal at least **120**.

*pending approval from CAC

**Experiential Learning Courses**

Up to 15 credits of Experiential Learning Courses may be taken. A maximum of 6 credits of Letter Grade courses may be taken for Concentration credit; both Letter Grade courses (in *italics* below) and S/U courses may be used as Supporting Electives.

| | | |
|---|---|---|
| NRS 395 | Research Apprenticeship | (1-3 credits/ea.) |
| NRS 397 | Internship | (1-6 credits) |
| *NRS 491/492* | *Special Projects* | *(1-3 credits/ea.)* |
| NRS 495 | Advanced Apprenticeship | (3 or 6 credits) |
| *NRS 497* | *Cooperative Internship* | *(6-12 credits)* |
| NRS 498 | Teaching Practicum | (1-3 credits) |
| *NRS 499* | *Senior Thesis* | *(6 credits)* |

| Environmental Science and Management | |
|---|---|
| **Freshman, Fall (15)** | **Freshman, Spring (15)** |
| NRS 100: Natural Resource Conservation | NRS 223 Conservation Biology |
| NRS 101: Freshman Inquiry into NRS | BIO 102 Principles of Biology II |
| URI 101: Traditions and Transformations: Freshman Seminar | WRT 104: Writing to Inform and Explain<br>or<br>WRT 105: Forms of College Writing<br>or<br>WRT 106: Intro to Research Writing<br>or<br>MTH 131: Applied Calculus |
| BIO 101: Principles of Biology I | COM 100 Communication Fundamentals |
| MTH 111/131: Precalculus/ Applied Calculus | |
| GEN ED (Cat. A, L, or FC) | |
| CHM 101, 102: General Chem Lecture I/ Lab | |
| **Sophomore, Fall (15)** | **Sophomore, Spring (15)** |
| NRS 200: Seminar in Natural Resources | CHM 124,126: Introduction to Organic Chem/ Lab |
| CHM 112, 114: General Chemistry Lecture II/Lab | GEN ED (Cat. A, L, or FC) |
| GEO 103: Understanding the Earth | GEO 210, MIC 211, or BCM 311 Landforms: Origin and Evolution, Introductory Microbiology, or \ Biochemistry |
| NRS 212: Intro to Soil Science | PHY 109, 110: Intro to Physics/ Lab |
| GEN ED (A, L, or FC) | Free Elective |
| **Junior, Fall (15)** | **Junior, Spring (15)** |
| EEC 105: Intro to Resource Economics | NRS Concentration |
| GEN ED ( A, L, or FC) | NRS Concentration |
| STA 308: Introductory Statistics | NRS Supporting Electives |
| NRS Concentration | NRS Supporting Electives |
| NRS Supporting Elective | GEN ED (A, L, or FC) |
| **Senior, Fall (15)** | **Senior, Spring (15)** |
| NRS Concentration | NRS Concentration |
| NRS Concentration | NRS Concentration |
| NRS Supporting Elective | NRS Supporting Elective |
| NRS Supporting Elective | NRS Supporting Elective |
| Free Elective | GEN ED (A, L, or FC) |

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**STUDENT_____ ID_____ ADVISOR_____**

## ENVIRONMENTAL SCIENCE AND MANAGEMENT SUPPORTING ELECTIVES

Environmental Science and Management students are required to select 20-21 credits of Supporting Electives. At least 9 credits must be NRS courses. Courses may be chosen from: a) the following list; b) courses in the Concentration Courses list not used for Concentration; or c) any NRS Experiential Learning Courses (see front).

**Natural Science Electives**

NRS 302 Fundamentals of Forest Management (3)
NRS 304 Field Ornithology (4)
NRS 309 Wildlife Manage. Techniques Lab. (3)
NRS 324 Biology of Mammals (3)
NRS 351 Soil Morphology Practicum (2)
NRS 401 Invasive Species (4)
NRS 402 Wildlife Biometrics (3)
NRS 403 Wildlife Biometrics Field Investigations (1)
NRS 411 Population and Environmental Change (3)
NRS 414 Climate Change Science and Policy (3)
NRS 445 Foundations of Restoration Ecology (4)
NRS 480 Senior Portfolio (3)
NRS 482 Innovative Subsurface Remed. Tech. (4)
NRS 484 Environmental Hydrogeology (4)
NRS 496 International Development Seminar (3)
NRS 505 Biology & Management of Migr. Birds (2)
NRS 516 Advanced Remote Sensing (3)
NRS 522 Advanced GIS Analysis Environ. Data (3)
NRS 524 Application of Advan. Spatial Analysis (1)
NRS 526 Microbial Ecol. of Soils & Sediments (3)
NRS 532 Conservation Bio. and Resource Econ. (2)
NRS 533 Landscape Pattern and Change (3)
NRS 534 Ecology of Fragmented Landscapes (2)
NRS 538 Physiolog. Ecol. Wild Terrestrial Vert. (3)
NRS 555 Applied Coastal Ecology (2)
NRS 567 Soil Genesis and Classification (3)
NRS 568 Recent Advances in NRS (3)
NRS 582 Seminar in Soil Ecology & Biochem. (1)
BIO 323 Field Botany and Taxonomy (4)
BIO 354 Invertebrate Zoology (4)
BIO 366 Vertebrate Biology (3)
BIO 458 Freshwater Ecology (4)
BIO 467 Animal Behavior (3)
ENT 385 Introductory Entomology (3)
ENT 386 Introductory Entomology Laboratory (1)
GEO 204 Evolution of the Earth (4)
GEO 210 Landforms: Origin and Evolution (4)
GEO 305 Global Warming (4)
GEO 320 Earth Materials (4)
GEO 370 Structure of the Earth (4)
GEO 450 Intro. To Sedimentary Geology (4)
GEO 465 Intro to Geophysics (3)
GEO 468 Groundwater Chemistry (4)
GEO 482 Innovative Subsurface Rem Policy (4)
GEO 483 Hydrogeology (4)
GEO/NRS 484 Environmental Hydrogeology
GEO 485 Environmentla Engineering Geophysics
GEO 515 Glacial Geology (3)
MAF 465 GIS Appl. Coastal & Marine Manage. (3)
WRT 333 Scientific and Technical Writing (3)

**Social Science Electives**

NRS 300 Intro. Global Issues Sustainable Devel. (3)
EEC 205 Resource Manage. and Conservation (3)
EEC 310 Economics Environ. Res. Man. Policy (3)
EEC 410 Fish and Wildlife Economics (3)
EEC 432 Environmental Economics and Policy (3)
EEC 440 Benefit-Cost Analysis (3)
CPL/MAF 434 Intro. to Environmental Law (3)
CPL 410 Fund. of Community Planning Practice (3)
NRS 487 International Development Internship (1-6)
CPL 495 International Development Seminar (3)
CPL 511 Planning and Natural Environ. Systems (3)
MAF 312 The Politics of the Ocean (3)
MAF 415 Marine Pollution Policy (3)
MAF 461 Coastal Zone Management (3)
MAF 484 Environ Analysis Policy Coastal Man. (3)
PSC 402 Environmental Policy and Politics (3)
PSC 403 Global Ecopolitics (3)