

Environmental Science, Ecological Restoration Concentration

Department of Earth & Atmospheric Sciences, 303-615-1177, Science Room 2028

College of Letters, Arts, and Sciences

Catalog
2020-2021

This sheet applies to the 2020-21 catalog *only*. It does not replace the full catalog as an official statement of requirements. Students with declared majors *must* work with an advisor on course selection and sequencing to ensure a timely graduation.

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|---|-----------|
| General Studies | 33 min |
| Environmental Science Required Courses | 26 |
| Ecological Restoration Science Requirements | 40 |
| Restricted Electives | <u>21</u> |
| Total to Graduate (Min. 40 hrs. Upper-Division) | 120 min |

General Studies Course Requirements

Written Communication (min. 6 credits)

- _____ ENG 1010 Composing Arguments
- _____ ENG 1020 Freshman Comp: Analysis, Research, & Doc.

Oral Communication (min. 3 credits)

Quantitative Literacy (min. 3 credits)

- _____ See required pre-requisites for recommendations*

Arts and Humanities (min. 6 credits)

Historical (min. 3 credits)

Natural and Physical Sciences (min. 6 credits)

- _____ See required pre-requisites for recommendations*

Social and Behavioral Sciences I (min. 3 credits)

Social and Behavioral Sciences II (min. 3 credits)

Global Diversity

- _____ May be satisfied within General Studies (GD code)

Multicultural Requirement

- _____ May be satisfied within General Studies (MC code)

Environmental Science Required Pre-Requisites*

| | |
|--|-----|
| _____ BIO 1080 General Biology I (Co: BIO 1090) | 3 |
| _____ BIO 1090 General Biology Laboratory I (Co: BIO 1080) | 1 |
| _____ BIO 1081 General Biology II (Preq. BIO 1080/1090; Co: BIO 1091) | 3 |
| _____ BIO 1091 General Biology Laboratory II (Preq. BIO 1080/1090; Co: BIO 1081) | 1 |
| _____ CHE 1800 General Chemistry I (Preq. at least MTH 1110) | 4 |
| _____ CHE 1801 General Chemistry I (Preq. Or Co. CHE 1800) | 1 |
| _____ CHE 1810 General Chemistry II (Preq. CHE 1800) | 4 |
| _____ CHE 1811 General Chemistry Laboratory II (Preq. or Co. CHE 1810) | 1 |
| _____ GEG 1100 Physical Geography OR GEL 1010 Physical Geology | 3-4 |
| _____ MTH 1410 Calculus I (Preq. MTH 1110 & 1120) | 4 |

Environmental Science Required Core Courses

| | ENV | Credits |
|--|-----|---------|
| 1200 Intro to Environmental Science | | 3 |
| _____ GIS 1220 Introduction to Geospatial Sciences (MTH 1110 Recommended) | | 3 |
| _____ GIS 2250 Geographic Information Systems (Preq. GIS 1220) | | 3 |
| _____ CET 3320 Environmental Impact Statements (Preq. Junior Status) | | 3 |
| _____ MTH 1210 Intro to Statistics | | 4 |
| _____ MTH 3240 Environmental Statistics (Preq. MTH 1210 & MTH 1110 or MTH 1112) | | 4 |
| _____ ENV 4200 Environmental Policy & Planning (Preq. ENV 1200) | | 3 |
| _____ ENV 4950 ENV Internship (optional – override needed, see advisor) (Preq. 12 credits UD ENV & Jr. Status) | | 3 |

| <u>Ecological Restoration Required Core Courses</u> | | <u>Credits</u> | <u>Biology Electives (min. 8 credits)</u> | <u>Credits</u> |
|---|---|----------------|---|----------------|
| _____ | ENV 3710 Env Remediation OR ENV 3720 Waste Mgt. <i>(Preq. See catalog for pre-requisites)</i> | 3 | _____ BIO 2100 General Botany <i>(Preq. BIO 1080/1090, BIO 1081/1091)</i> | 5 |
| _____ | ENV 4400 Landscape Ecology <i>(Preq. ENV 1200 & GIS 2250)</i> | 3 | _____ BIO 2400 General Microbiology <i>(Preq. BIO 1080/1090 & BIO 1081/1091, 1 sem CHE)</i> | 5 |
| _____ | ENV 4420 Wetlands <i>(Preq. ENV 1200)</i> | 3 | _____ BIO 3120 Economic Botany <i>(Preq. BIO 2100)</i> | 4 |
| _____ | ENV 4440 Limnology <i>(Preq. ENV 1200, BIO 1081/1091)</i> | 3 | _____ BIO 3140 Plant Physiology <i>(Preq. BIO 2100)</i> | 5 |
| Choice 1 of the following: (min. 3 credits) | | | _____ BIO 3160 Plant Anatomy and Morphology <i>(Preq. BIO 2100)</i> | 4 |
| _____ | ENV 4500 Biogeochemistry OR | 3 | _____ BIO 3180 Vascular Plant Taxonomy <i>(Preq. BIO 2100)</i> | 4 |
| _____ | GEL 3420 Soil Resources OR | 4 | _____ BIO 3200 Invertebrate Zoology <i>(Preq. BIO 1080/1090, BIO 1081/1091)</i> | 4 |
| _____ | ENV 4460 Advanced Water Quality Analysis <i>(Preq. See catalog for pre-requisites)</i> | 3 | _____ BIO 3260 Vertebrate Zoology <i>(Preq. BIO 1080/1090, BIO 1081/1091)</i> | 4 |
| Environmental Science Electives (min. 9 credits) | | | _____ BIO 3360 Animal Physiology <i>(Preq. BIO 3200 or BIO 3260 and CHE 1810)</i> | 4 |
| _____ | ENV 2000:4999 Any ENV course taught at MSU <i>(Preq. See catalog for pre-requisites)</i> | | _____ BIO 3400 Microbial Physiology <i>(Preq. BIO 2400)</i> | 4 |
| Geology Electives (min. 4 credits) | | | _____ BIO 3520 General Ecology <i>(Preq. BIO 1080/1090 & BIO 1081/1091, MTH 1080, 1 sem BIO)</i> | 3 |
| _____ | GEL 1010 Physical Geology | 4 | _____ BIO 4160 Mycology <i>(Preq. BIO 2100 or BIO 2400)</i> | 4 |
| _____ | GEL 3000:4999 Any UD Geology course taught at MSU <i>(Preq. See catalog for pre-requisites)</i> | 1-4 | _____ BIO 4450 Pathogenic Microbiology <i>(Preq. BIO 2400, BIO 3600, or BIO 3610)</i> | 5 |
| | | | _____ BIO 4510 Microbial Ecology <i>(Preq. BIO 2400, 6 cr. of UD micro/ molecular BIO & Sr. Status)</i> | 4 |
| | | | _____ BIO 4540 Plant Ecology <i>(Preq. BIO 2100, Sr. Standing)</i> | 4 |
| | | | _____ BIO 4550 Animal Ecology <i>(Preq. BIO 3200 or BIO 3260, 6 credits of UD BIO & Sr. Status)</i> | 4 |
| | | | Senior Experience Requirement (min. 3 credits) | |
| _____ | ENV 4970 Environmental Field Studies <i>(Preq. 12 UD credits of ENV, GEG, GEL, or MTR & Sr. Status)</i> | | | 3 |
| _____ | ENV 4960 Global Environmental Challenges <i>(Preq. 12 UD credits of ENV, GEG, GEL, or MTR & Sr. Status)</i> | | | 3 |
| _____ | BIO 4540 Plant Ecology <i>(Preq. BIO 2100 & Sr. Status)</i> | | | 4 |

The degree is an extended major that does not require a minor.
Need to total a minimum of 120 credits for a bachelor's degree