

COLLEGE OF NATURAL RESOURCES AND ENVIRONMENT  
Department of Forest Resources and Environmental Conservation  
Bachelor of Science in Forest Resources and Environmental Conservation  
Major: Environmental Data Science  
For student date of entry under UG Catalog 2022-2023

**Minimum credit hours required for graduation is 120. \*Prerequisites or enrollment restrictions may apply to some courses. Consult the undergraduate course catalog or the timetable of classes.**

**Degree Core Requirements (19 credits)**

- \_\_\_ FREC 2214 Introduction to Land and Field Measurements\* (3 credits)
- \_\_\_ FREC 2314 Forest Biology and Dendrology\* (2 credits)
- \_\_\_ FREC 2324 Dendrology Laboratory (1 credit)
- \_\_\_ FREC 2614 Human-Environment Systems\* (3 credits)
- \_\_\_ FREC 4004 (NR 4004) Professional Skills in Natural Resources\* (1 credit)
- \_\_\_ FREC 4014 (NR 4014) Natural Resources Economics\* (3 credits)
- \_\_\_ FREC 4114 Information Technologies for Natural Resources Management\* (3 credits)
- \_\_\_ FREC 4434 Natural Resource Policy\* (3 credits)

**Environmental Data Science Major Requirements – (35 credits)**

*Computational Requirements (24 credits – complete all)*

- \_\_\_ BIT 3424 Introduction to Business Analytics Modeling\* (3 credits)
- \_\_\_ BIT 3514 Systems Analysis\* (3 credits)
- \_\_\_ BIT 3524 Database Management and Design\* (3 credits)
- \_\_\_ FREC 1004 (GEOG 1084) Digital Planet (3 credits)
- \_\_\_ FREC 1044 Introduction to Environmental Data Science (3 credits)
- \_\_\_ FREC 3044 Environmental Data Science\* (3 credits)
- \_\_\_ FREC 4044 Environmental Data Science Capstone\* (3 credits)
- \_\_\_ FREC 4214 Forest Photogrammetry and Spatial Data Processing\* (3 credits)

*Computer Programming Requirement (3 credits – choose one)*

- \_\_\_ CS 1044 Introduction to Programming in C (3 credits)
- or** CS 1064 Introduction to Programming in Python (3 credits)
- or** CS 1114 Introduction to Software Design (3 credits)

*Data Management Requirement (3 credits – choose one)*

- \_\_\_ CMDA 2014 Data Matter\* (3 credits)
- or** STAT 2524 Data Science\* (3 credits)

*Natural Science Requirements (5 credits – complete all)*

- \_\_\_ BIOL 1115 Principles of Biology Laboratory (1 credit)
- \_\_\_ BIOL 1116 Principles of Biology Laboratory (1 credit)
- \_\_\_ FREC 2004 Forest Ecosystems (3 credits)

**\*NOTICE: Some courses have pre-requisites. Please check the Course Catalog for details.**

**Pathways to General Education Requirements (45 - 47 credits)**

**Pathways Concept 1: Discourse (9 credits)**

- \_\_\_ COMM 1015 Communication Skills **or** ENGL 1105 First-Year Writing (3 credits)
- \_\_\_ COMM 1016 Communication Skills **or** ENGL 1106 First-Year Writing (3 credits)
- \_\_\_ Pathways Concept 1 Advanced course: \_\_\_\_\_ (3 credits)

**Pathways Concept 2: Critical Thinking in the Humanities (6 credits)**

- \_\_\_ Pathways 2 Concept course: \_\_\_\_\_ (3 credits)
- \_\_\_ Pathways 2 Concept course: \_\_\_\_\_ (3 credits)

**Pathways Concept 3: Reasoning in the Social Sciences (6 credits)**

- \_\_\_ AAEC 1005 Economics of Food & Fiber Systems **or** ECON 2005 Principles of Economics (3 credits)
- \_\_\_ Pathways Concept 3 course: \_\_\_\_\_ (3 credits)

**Pathways Concept 4: Reasoning in the Natural Sciences (6 credits)**

- \_\_\_ BIOL 1105 Principles of Biology (3 credits)
- \_\_\_ BIOL 1106 Principles of Biology (3 credits)

**Pathways Concept 5: Quantitative and Computational Thinking (9 - 11 credits)**

- \_\_\_ MATH 1025 Elementary Calculus **or** MATH 1225 Calculus of a Single Variable (3-4 credits)
- \_\_\_ MATH 1026 Elementary Calculus **or** MATH 1226 Calculus of a Single Variable (3-4 credits)
- \_\_\_ STAT 3615 Biological Statistics\* (3 credits)

**Pathways Concept 6: Critique and Practice in Design and the Arts (6 credits)**

- \_\_\_ Pathways Concept 6 Design or Integrated course: \_\_\_\_\_ (3 credits)
- \_\_\_ Pathways Concept 6 Arts or Integrated course: \_\_\_\_\_ (3 credits)

**Pathways Concept 7: Critical Analysis of Identity and Equity in the United States (3 credits)<sup>1</sup>**

- \_\_\_ Pathways Concept 7 course: \_\_\_\_\_ (3 credits)

**Free Electives (additional credit hours to total at least 120, estimated 19 - 21 credits)**

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**IMPORTANT NOTES ON THE FOLLOWING PAGE**

<sup>1</sup>A course taken to satisfy another area of Pathways that is also listed within Concept 7 will satisfy the Concept 7 requirement simultaneously

## ENVIRONMENTAL DATA SCIENCE NOTES

1. **Satisfactory Progress:** By the end of the semester in which the student has attempted 60 hours (including transfer, advanced placement, advanced standing, and credit by examination), "satisfactory progress" towards a B.S. degree in Forest Resources and Environmental Conservation will include the following minimum criteria:
  - Having an in-major and overall grade point average (GPA) of at least 2.0.
  - Passing at least 24 semester credits that apply to Pathways for General Education
  - Passing the following courses, or their equivalents: BIOL 1105, 1106 and 1115, 1116; MATH 1025 or 1225.
2. **Foreign Language Requirement:** A sequence of two (2) foreign language courses is required for graduation unless two (2) high school credits of the same foreign language or six (6) transfer credit hours of foreign language have been earned. These credits do not count toward graduation. See catalog section on "Graduation Requirements."
3. **Policy on Student Exchanges:** If studying overseas or at another U.S. university, begin planning at least 9 months prior to your departure to allow time to determine what substitutions, if any, will be allowed and to arrange your schedule to ensure that all requirements for graduation will be met.
4. **In-major GPA Computation:** All degree core and Environmental Data Science major requirements will factor into the in-major GPA.
5. **Curriculum Planning:** Students should plan early with their advisors to determine appropriate sequences for their courses. Some courses must be taken in sequence to satisfy prerequisites.
6. **Degree Requirements:** An in-major and overall GPA of 2.0 is required for graduation. Minimum hours for degree is 120.
7. In accordance with university guidelines, courses satisfying degree core requirements may not be double counted to satisfy other areas of a degree (e.g. Pathways requirements).
8. **\*Prerequisites:** Some of the listed courses have prerequisites. Be sure to consult with the University Catalog or check with your advisor.
9. **Acceptable Substitutions:** The following requirements have acceptable substitutions.
  - a. STAT 3615 Biological Statistics: STAT 3005 Statistical Methods
  - b. BIOL 1105 Principles of Biology: CHEM 1035 General Chemistry
  - c. BIOL 1115 Principles of Biology Laboratory: CHEM 1046 General Chemistry Laboratory