

COLLEGE OF NATURAL RESOURCES AND ENVIRONMENT

Department of Geography

Bachelor of Science (B.S.) in Meteorology (MTRG)

Major: Meteorology

For students graduating in calendar year 2022 and for student date of entry under UG Catalog 2020-2021

**Degree Core Requirements: (22 credits)**

- \_\_\_\_ GEOG 1104 Intro to Physical Geography (3)
- \_\_\_\_ GEOG 1084 (FREC 1004) Digital Planet (3)
- \_\_\_\_ GEOG 1504 Survey of Meteorology (1)
- \_\_\_\_ GEOG 1514 Introduction to Meteorology (3)
- \_\_\_\_ GEOG 2314 Maps and Mapping (3)
- \_\_\_\_ GEOG 2505 Weather Analysis I (3)
- \_\_\_\_ GEOG 2506 Weather Analysis II\* (3)
- \_\_\_\_ GEOG 3504 Severe Weather\* (3)

**Major Requirements:**

**Mapping and GIS: (13 credits)**

- \_\_\_\_ GEOG 2084 Principles of GIS (3)
- \_\_\_\_ GEOG 3314 Cartography (3)
- \_\_\_\_ GEOG 4084 (GEOS 4084) Modeling with GIS\* (3)
- \_\_\_\_ GEOG 4354 (GEOS 4354) Intro. Remote Sensing (3)
- \_\_\_\_ GEOG 4554 Remote Sensing Atmosphere\* (1)

**Human Systems: (9 credits)**

- \_\_\_\_ GEOG 1004 Intro Human Geography (3)
- \_\_\_\_ GEOG 1014 World Regions (3)
- \_\_\_\_ **Choose ONE course from below:** (3 credits)
- GEOG 1115 (NR 1115) Seeking Sustainability (3)
- GEOG 2004 (WATR 2004) Water, Enviro & Society (3)
- GEOG 2134 (IS/PSCI 2134) Geography of the Global Economy (3)
- GEOG 2214 Geography of North America (3)
- GEOG 3104 Enviro Problems, Pop, & Development (3)
- GEOG 3224 Geography of Appalachia\* (3)
- GEOG 3244 The U.S. City\* (3)
- GEOG 3464 (AHRM/APS/HD/HUM/SOC/UAP 3464) Appalachian Communities\* (3)
- GEOG 4054 Geography of Wine (3)
- GEOG 4074 Medical Geography\* (3)
- GEOG 4134 (GEOS 4134) Issues & Ethics in Water Res (3)
- GEOG 4204 Geography of Resources\* (3)

**Meteorology: (12 credits, 3000/4000 level)**

- \_\_\_\_ GEOG 3515 Dynamic Meteorology\* (3)
- \_\_\_\_ GEOG 3516 Dynamic Meteorology\* (3)
- \_\_\_\_ GEOG 4504 Synoptic Meteorology\* (3)
- \_\_\_\_ GEOG 4524 Physical Meteorology\* (3)

**Math and Statistics (min 8 credits)**

- \_\_\_\_ MATH 1114 Elementary Linear Algebra (2)
- \_\_\_\_ **OR** MATH 2114 Introduction to Linear Algebra\* (3)
- \_\_\_\_ MATH 2214 Intro to Differential Equations\* (3)
- \_\_\_\_ STAT 3604 Statistics for Social Sciences\* (3) **OR**
- \_\_\_\_ STAT 3615: Biological Statistics\* (3)

**Field Experience** (must be relevant to major and approved by the Department): (3 credits) **Choose ONE:**

- MTRG 2964 or 4964 Field Study (3)
- MTRG 3524 Meteorology Field Methods (Field Methods topics may vary) (3)
- MTRG 3954 Study Abroad (3)
- MTRG 4584 Topics in Applied Meteorology (3)
- MTRG 4994 Undergraduate Research (3)

**Restricted Electives- Physical Sciences: (9 credits)**

**Note:** This requirement can also be met by completion of a second major or minor in: Astronomy, Chemistry, Computer Science, Geosciences, Geographic Information Science, Math, or Physics.

**Recommended for graduate school preparation:**

- CHEM 1015 Chemistry in Context (3)
- CHEM 1016 Chemistry in Context (3)
- CHEM 1035 General Chemistry (3)
- CHEM 1036 General Chemistry\* (3)
- CS 1014 Intro Computational Thinking (3)
- CS 1044 Introduction to Programming in C (3)
- CS 1064 Intro to Programming in Python (3)
- CS 1114 Introduction to Software Design (3)
- CS 1124 Introduction to Media Computation (3)
- CS 2114 Software Design and Data Structures\* (3)
- MATH 2204 Intro Multivariable Calculus\* (3)

**Recommended for all other students**

- CSES 3114 (ENSC/GEOS 3114) Soils\* (3)
- CSES 3124 (ENSC 3124/GEOS 3624) Soils Laboratory\* (1)
- CSES 3134 (ENSC 3134) Soils in the Landscape\* (3)
- CSES 3634 (ENSC 3634) Physics of Pollution\* (3)
- FREC 3104 Princ of Watershed Hydrology\* (3)
- FREC 3604 Climate Science\* (3)
- FREC 4374 Forested Wetlands\* (3)
- GEOG 1524 Intro Earth's Climate (3)
- GEOG 3274 Polar Environments (3)
- GEOG 3304 (CSES/GEOS 3304) Geomorphology\* (3)
- GEOG 3404 Mountain Geography\* (3)
- GEOG 4044 (BIOL 4044) Biogeography\* (3)
- GEOG 4224 Tracking Environmental Change (3)
- GEOG 4514 Tropical Meteorology\* (3)
- GEOS 3014 Environmental Geosciences\* (3)
- GEOS 3034 Oceanography (3)
- GEOS 4804 Groundwater Hydrology (3)
- STAT 3616 Biological Statistics\* (3)

\*NOTE: Some of the listed courses have prerequisites and/or enrollment restrictions. Some courses must be taken in sequence to satisfy prerequisites. Be sure to consult with the University Catalog, Timetable of Classes, or check with your advisor.

**Pathways to General Education Requirements**

**Concept 1F: Foundational Discourse (6 credits)**

\_\_\_\_\_ ENGL 1105 or COMM 1015  
\_\_\_\_\_ ENGL 1106 or COMM 1016

**Concept 1A: Advance/Applied Discourse (3 credits)**

\_\_\_\_\_ Concept 1a course \_\_\_\_\_

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

\_\_\_\_\_ Concept 2 course (3) \_\_\_\_\_  
\_\_\_\_\_ Concept 2 course (3) \_\_\_\_\_

**Concept 3: Society and Human Behavior (6 credits)**

The meteorology major covers this area with completion of GEOG 1004 and 1014

**Concept 4: Scientific Reasoning and Discovery (8 credits)**

\_\_\_\_\_ PHYS 2205/2215 General Physics (4)                      **OR**                      \_\_\_\_\_ PHYS 2305 Foundations of Physics (4)  
\_\_\_\_\_ PHYS 2206/2216 General Physics (4)                      \_\_\_\_\_ PHYS 2306 Foundations of Physics (4)

**Concept 5F: Foundational Quantitative and Computational Thinking (8 credits)**

\_\_\_\_\_ MATH 1225 Calculus of a single variable (4)  
\_\_\_\_\_ MATH 1226 Calculus of a single variable (4)

**Concept 5A: Advance/Applied Quantitative and Computational Thinking (3 credits)**

\_\_\_\_\_ Stat 3604 Statistics for Social Science **OR** Stat 3615 Biological Statistics

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

\_\_\_\_\_ GEOG 3314 Cartography (3) (6d)  
\_\_\_\_\_ Approved course (3) (6a) \_\_\_\_\_

**Concept 7: Critical Analysis of Identity and Equity in the US (3 credits) †**

\_\_\_\_\_ Approved course (3) \_\_\_\_\_

†Completed courses in another area, co-listed with Pathways Concept 7, will satisfy the Concept 7 requirement.

**Free Electives: 9 credits (additional credit hours to total 120).**

**Meteorology Notes:**

- 1) **Prerequisites or enrollment restrictions** may apply to some courses. Consult the Undergraduate Catalog, Timetable of Classes, or your advisor.
- 2) **Satisfactory Progress:** Required minimum hours in the major is 76. Minimum number of hours for the degree is 120. 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 the College of Natural Resources and Environment will include the following minimum criteria: having an in-major and overall grade point average of at least 2.0 and passing at least 24 semester credits that apply to the Pathways to General Education, and students must have completed 15 hours in Geography/Meteorology.
- 3) **In-major GPA Computation:** includes all GEOG/MTRG courses, and approved physical sciences; an in-major and overall GPA average of 2.0 is required for graduation.
- 4) **Foreign Language Requirement:** A sequence of two (2) foreign language courses is required for graduation unless two (2) high school units 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".
- 5) **Meteorology Double Major:** Geography students planning to double major in Meteorology must complete **15 additional credits:** at least 12 hours of GEOG course work that is not being used to complete either major; and **two distinct** (3 credits each) field experiences that apply to each major.
- 6) **Pathways General Education:** Courses used to satisfy Pathways General Education requirements **cannot** be double counted to also satisfy degree core requirements. However, Pathways courses may be double counted to satisfy other program area credit hour requirements.