METEOROLOGY MAJOR

Program Curriculum

Code	Title	Credits
Degree Core Requirements		
GEOG 1104	Introduction to Environmental Geography	3
GEOG 1084	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
Subtotal		22
Major Requirements		
Meteorology		
GEOG 3515	Dynamic Meteorology	3
GEOG 3516	Dynamic Meteorology	3
GEOG 4504	Synoptic Meteorology	3
GEOG 4524	Physical Meteorology	3
Mapping and GIS		
GEOG 2084	Principles of Geographic Information Systems	3
GEOG 3314	Cartography	3
GEOG/GEOS 4084	Modeling with Geographic Information Systems	3
GEOG/GEOS 4354	Introduction to Remote Sensing	3
GEOG 4554	Remote Sensing of Atmosphere	1
Math and Statistics		
MATH 2114	Introduction to Linear Algebra	3
MATH 2214	Introduction to Differential Equations	3
STAT 3604	Statistics for Social Science	3
or STAT 3615	Biological Statistics	
Human Systems		
GEOG 1004	Introduction to Human Geography	3
GEOG 1014	World Regions	3
Select one of the following:		3
GEOG/NR 1115	Seeking Sustainability	
GEOG/WATR 2004	Water, Environment, and Society	
GEOG 2114	Introduction to Coastal Regions	
GEOG/IS/PSCI 2134	Geography of the Global Economy	
GEOG 3104	Environmental Justice, Resources and Development	
GEOG 3224	Geography of Appalachia	
GEOG 3244	The U.S. City	
GEOG 4054	Geography of Wine	
GEOG 4074	Medical Geography of Infectious Diseases	
GEOG 4414	Climate Change and Societal Impacts	
GEOG 4134	Interdisciplinary Issues and Ethics in Water Resources	
GEOG 4204	Geography of Resources	
JMC 3184	Media Weather Reporting	
Field Experience		
Select one of the following: [2]		3
MTRG 2964	Field Study	
MTRG 3524	Meteorology Field Methods (Field Methods topics may vary)	
MTRG 3954	Study Abroad	
MTRG 4584	Topics in Applied Meteorology	
MTRG 4964	Field Study	
MTRG 4994	Undergraduate Research	
Subtotal		46
Restricted Electives		
Select three of the following physical science electives: [3]		9
CHEM 1015	Chemistry in Context	
CHEM 1016	Chemistry in Context	
CHEM 1035	General Chemistry [4]	
CHEM 1036	General Chemistry [4]	
CS 1014	Introduction to Computational Thinking	
CS 1044	Introduction to Programming in C	
CS 1064	Introduction to Programming in Python	
CS 1114	Introduction to Software Design	
CS 2114	Software Design and Data Structures	
MATH 2204	Introduction to Multivariable Calculus [4]	
FREC 3104	Principles of Watershed Hydrology [4]	
GEOG 1524	Introduction to Earths Climate	
GEOG 3274	Polar Environments	
GEOG 3304	Geomorphology	
GEOG 3404	Mountain Geography [1]	
GEOG 4044	Biogeography	
GEOG 4224	Tracking Environmental Change	
GEOG 4514	Tropical Meteorology [4]	
GEOG 4534	Numerical Weather Prediction	
GEOG 4574	Climate Data Analysis and Programming [4]	
GEOS 1064	Climate History: Past, Present, and Future	
GEOS 3034	Oceanography [4]	
GEOS 4804	Groundwater Hydrology [4]	
STAT 3616	Biological Statistics [4]	
Subtotal		9
Free Electives		
Select remaining credit hours to fulfill remaining credits required for graduation.		9
Subtotal		9
Pathways to General Education [5]		
Pathways Concept 1 - Discourse		
ENGL 1105	First-Year Writing (1F)	3
or COMM 1015	Communication Skills	
ENGL 1106	First-Year Writing (1F)	3
or COMM 1016	Communication Skills	
Select three credits in Pathway 1a (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G01A)		3

Pathways Concept 2 - Critical Thinking in the Humanities		
Select six credits in Pathway 2 (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G02)		6
Pathways Concept 3 - Reasoning in the Social Sciences		
The meteorology major covers this area with completion of GEOG 1004 and 1014.		
Pathways Concept 4 - Reasoning in the Natural Sciences		
PHYS 2305	Foundations of Physics	4
PHYS 2306	Foundations of Physics [6]	4
Pathways Concept 5 - Quantitative and Computational Thinking		
MATH 1225	Calculus of a Single Variable (5F)	4
MATH 1226	Calculus of a Single Variable (5F)	4
Pathway 5a (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G05A) filled with STAT 3604 or STAT 3615		
Pathways Concept 6 - Critique and Practice in Design and the Arts		
Pathway 6d (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G06D) filled with GEOG 3314		
Select three credits in Pathway 6a (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G06A)		3
Pathways Concept 7 - Critical Analysis of Identity and Equity in the United States		
Select three credits in Pathway 7 (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G07) [6]		
Subtotal		34
Total Credits		**120**

1. **Prerequisites or enrollment restrictions** may apply to some courses.
2. **In-major GPA Computation:** Includes all courses designated as GEOG/MTRG, an in-major and overall GPA average of 2.0 Is required for graduation.
3. **Geography Double Major:** Meteorology students planning to double major In Geography 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.
4. Students **interested in graduate school or NWS/NOAA employmen**t should consider these courses.
5. **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.
6. **PHYS 2306 restriction**: MATH 1226 is a required co-requisite for PHYS 2306. Students must be enrolled in both courses through Virginia Tech. MATH 1226 transfer credit enrollment will be accepted only as a prerequisite for PHYS 2306, not a corequisite.

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.

Graduation Requirements

In-major GPA Computation: Includes all courses designated as GEOG/MTRG, an in-major and overall GPA average of 2.0 Is required for graduation.

Required minimum hours in major: 76 hours

Required minimum hours for the degree: 120 hours

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."