GENERAL ATMOSPHERIC SCIENCES

Meteorology is the study of the physics, chemistry, and dynamics of the earth's atmosphere and its interaction with the land surface and oceans. It is the underlying science of weather, climate, weather forecasting, climate projection, and their applications to decision-making activities. Fundamental topics include the composition, structure, and forces that govern the motion of the atmosphere.

About this Program

- **College:** Liberal Arts and Sciences (http://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/)
- **Degree:** Bachelor of Science
- **Specializations:** Applied Meteorology, Hazards, and Global Change (http://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/MET_BS/MET_BS01/) | Broadcast Meteorology (http://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/MET_BS/MET_BS02/) | General Atmospheric Science (p. 1)
- **Credits for Degree:** 120

To graduate with this major, students must complete all university, college, and major requirements.

Department Information

The Geography Department offers a range of topics in contemporary geography and geospatial science, rich and lively cultural and learning environments, BA and BS undergraduate degrees, MA, M.S., and PhD degrees, as well as the largest Medical Geography program in the United States. **Website (https://geog.ufl.edu/)**

CONTACT

Email (liangmao@ufl.edu) | 352.392.0494 (tel) | 352.392.8855 (fax)

P.O. Box 117315
330 Newell Drive
3141 TURLINGTON HALL
GAINESVILLE FL 32611-7315
Map (http://campusmap.ufl.edu/#/index/0267)

Curriculum

- Combination Degrees
- Geographic Artificial Intelligence and Big Data Certificate
- Geography
- Geography Minor
- Geography Minor UF Online
- Geography UF Online
- Geospatial Information Analysis Certificate
- Medical Geography Certificate
- Medical Geography in Global Health Minor
- Meteorology and Climatology Certificate

A major in Meteorology enables students to know the composition, structure, and motion of the Earth’s atmosphere as governed by laws of physics, energy, and chemistry, and to understand its relationship with Earth and human systems. Students will learn how observations, data collection, and prediction are applied in the subfields of meteorology. Computer-based lab assignments teach students how to analyze meteorological information using diagnostic, prognostic, and technological tools and to apply data to solve problems. They will be able to interpret and effectively communicate information using maps, graphs, and/or statistics.

The specializations prepare students for a range of careers. Meteorologists continue to engage in creating weather forecasts and climate projections, communicating those forecasts and projections, and conducting research. Increasingly, a number of private sector industries are looking to meteorologists to improve or create new products and services.

BS Meteorology | General Atmospheric Science

This specialization prepares students to pursue a wide range of careers from public or private sector forecasting to conducting research. This specialization is the most appropriate for students intending to pursue advanced degrees.

COURSEWORK FOR THE MAJOR

The Meteorology major has three different specializations: BS | Meteorology, Applied Meteorology, Hazards, and Global Change; BS Meteorology | General Atmospheric Sciences; and BS | Meteorology, Broadcast Meteorology.

Students in all specializations must complete the following Meteorology Core courses:

Meteorology Core Courses

Code	Title	Credits
GEO 3250	Climatology	3
MET 1010	Introduction to Weather and Climate	3
MET 3503	Weather and Forecasting	3
MET 4230	Thermodynamics of the Atmosphere	3
MET 4500C	Synoptic Meteorology	4
MET 4410	Radar and Satellite Meteorology	3
MET 4524	Weather Briefing	1
MET 4950	Capstone in Meteorology	1
Total Credits		**21**

Electives

The BS Meteorology | General Atmospheric Sciences specialization requires 46-48 credits of coursework in the major plus 30 credits of related coursework.

In addition to the 21 credit hours of required Core Meteorology courses:

Code	Title	Credits
Complete all Meteorology Theory courses:		13
MET 4301	Atmospheric Dynamics 1	
MET 4450	Atmospheric Physics	
MET 4531	Mesoscale Meteorology	
Select two Atmospheric Science Elective courses:		6
MET 4532	Hurricanes	
MET 4560	Atmospheric Teleconnections	
MET 4750	Spatial Analysis of Atmospheric Data using GIS	
Select one Societal Applications course:		3-4
GEO 2006	Natural Hazards Geography	
GEO 3222	Sea Level Science	
GEO 3280	Principles of Geographic Hydrology	
GEO 3334	Managing for a Changing Climate	
GEO 3341	Extreme Floods	
GEO 3343	Extreme Droughts	
GEO 4033	Climate Change and Health	
GEO 4034	Weather, Climate, and Society	
GEO 4170	Communicating Science in the Geosciences	
GEO 4285	Water, Risk, and Extreme Events	
GLY 3074	Oceans and Global Climate Change	
Select two Programming courses:		6-7
AST 2730	Introduction to Python for Physical Sciences	
COP 3275	Computer Programming Using C	
GIS 3043	Foundations of Geographic Information Systems	
GIS 4102C	GIS Programming	
GIS 4124	Geocomputation using R Programming	
GIS 4324	GIS Analysis of Hazard Vulnerability	
MET 3753	Pragmatic Python for Weather	
STA 3100	Programming With Data in R	
Total Credits		**28-30**

Total Credits

Code	Title	Credits
Meteorology Core Courses		21
Electives		28-30
Total Credits		**49-51**

Related Coursework

Code	Title	Credits
CHM 2045	General Chemistry 1	4
& 2045L	and General Chemistry 1 Laboratory	

MAC 2311	Analytic Geometry and Calculus 1	4
MAC 2312	Analytic Geometry and Calculus 2	4
MAC 2313	Analytic Geometry and Calculus 3	4
MAP 2302	Elementary Differential Equations	3
PHY 2048 & 2048L	Physics with Calculus 1 and Laboratory for Physics with Calculus 1	4
PHY 2049 & 2049L	Physics with Calculus 2 and Laboratory for Physics with Calculus 2	4
STA 2023	Introduction to Statistics 1	3
Total Credits		**30**

Critical Tracking

Critical Tracking records each student's progress in courses that are required for entry to each major. Please note the critical-tracking requirements below on a per-semester basis.

For degree requirements outside of the major, refer to CLAS Degree Requirements: Structure of a CLAS Degree (https://catalog.ufl.edu/UGRD/colleges-schools/UGLAS/#degreerequirementstext).

Equivalent critical-tracking courses as determined by the State of Florida Common Course Prerequisites (http://www.flvc.org/cpp/displayRecord.jsp?cip=450701&track=01) may be used for transfer students.

Semester 1

- 2.0 UF GPA required

Semester 2

- 2.0 UF GPA required

Semester 3

- Complete one Meteorology Core course and one MAC course.
- 2.0 UF GPA required

Semester 4

- 2.5 critical-tracking GPA required
- Complete one additional Meteorology Core course and CHM 2045/CHM 2045L and PHY 2048/PHY 2048L.
- 2.0 UF GPA required

Semester 5

- Complete one additional Meteorology Core course.
- 2.5 critical-tracking GPA required
- 2.0 UF GPA required

Semester 6

- 2.0 UF GPA required

Semester 7

- 2.0 UF GPA required

Semester 8

- Complete all of the remaining MET 3000/4000 courses.
- 2.0 UF GPA required

Model Semester Plan

Students are expected to complete the Writing, Civic Literacy, summer enrollment, and Quest requirements while in the process of taking the courses below. Students are also expected to complete the General Education International and Diversity requirements concurrently with another General Education requirement (typically, Composition, Humanities, or Social and Behavioral Sciences) as part of the CLAS Basic Distribution requirements. One of the two General Education Mathematics courses must be a pure math course.

Up to 3 hours of approved Meteorology electives that are not MET, GEO, or GIS courses may also count towards the 3000 level or above electives outside of the major.

To remain on track, students must complete the appropriate critical-tracking courses, which appear in bold. These courses must be completed by the terms as listed on the Critical Tracking tab.

This semester plan represents an example progression through the major. Actual courses and course order may be different depending on the student's academic record and scheduling availability of courses. Prerequisites still apply.

Course	Title	Credits
Semester One		
MET 1010	Introduction to Weather and Climate (**Critical Tracking**; Gen Ed Physical Sciences)	3
CHM 2045	General Chemistry 1	4
& 2045L	and General Chemistry 1 Laboratory (**Critical Tracking**; State Core Gen Ed Physical Sciences) [1]	
MAC 2311	Analytic Geometry and Calculus 1 (**Critical Tracking**; State Core Gen Ed Mathematics)	4
State Core Gen Ed Composition (http://catalog.ufl.edu/UGRD/academic-programs/general-education/#genedcoursestext); Writing Requirement		3
	Credits	**14**
Semester Two		
Quest 1 (Gen Ed Humanities)		3
GEO 3250	Climatology (Gen Ed Humanities)	3
MAC 2312	Analytic Geometry and Calculus 2 (**Critical Tracking**; Gen Ed Mathematics)	4
PHY 2048	Physics with Calculus 1	4
& 2048L	and Laboratory for Physics with Calculus 1 (**Critical Tracking**)	
	Credits	**14**
Semester Three		
MAC 2313	Analytic Geometry and Calculus 3	4
MET 3503	Weather and Forecasting	3
PHY 2049	Physics with Calculus 2	4
& 2049L	and Laboratory for Physics with Calculus 2	
Gen Ed Biological Science [2]		3
Gen Ed Social and Behavioral Sciences [2]		3
	Credits	**17**
Semester Four		
MAP 2302	Elementary Differential Equations	3
MET 4301	Atmospheric Dynamics 1	4
STA 2023	Introduction to Statistics 1 (Gen Ed Mathematics)	3
State Core Gen Ed Humanities (http://catalog.ufl.edu/UGRD/academic-programs/general-education/#genedcoursestext)		3
State Core Gen Ed Social and Behavioral Sciences (http://catalog.ufl.edu/UGRD/academic-programs/general-education/#genedcoursestext)		3
	Credits	**16**
Semester Five		
MET 4410	Radar and Satellite Meteorology	3
MET 4500C	Synoptic Meteorology	4
Foreign language		5
Societal Applications or Programming course		3
	Credits	**15**
Semester Six		
MET 4531	Mesoscale Meteorology	3
Internship or MET4911 (Recommended)		1
Gen Ed Composition: Writing requirement		3
Foreign Language		5
Societal Applications or Programming course		3
	Credits	**15**
Semester Seven		
MET 4230	Thermodynamics of the Atmosphere	3
MET 4524	Weather Briefing	1
Gen Ed Humanities		3
Atmospheric Science elective		3
Societal Applications or Programming course		3

Elective (3000-level or above, not in major)		3
	Credits	**16**
Semester Eight		
MET 4450	Atmospheric Physics	3
MET 4950	Capstone in Meteorology	1
Gen Ed Biological Sciences		3
Gen Ed Social and Behavioral Sciences		3
Atmospheric Science elective		3
	Credits	**13**
	Total Credits	**120**

1 Natural science laboratory: A one-credit science lab with a minimum grade of C is required. Students can elect a laboratory course that is approved for the general education physical or biological sciences requirement or any psychology laboratory. (Most laboratory courses cannot be taken without prerequisite or corequisite courses.)

2 One General Education option taken this term must be a Quest 2 course.