Catalog Copy of Bachelor's Program for Meteorology

B.S. Meteorology, General Atmospheric Sciences

Overview

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.

Description of the Major

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 are designed to 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.

Coursework for the Major

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

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

Meteorology Core Courses

MET 1010	Introduction to Weather and Climate	3
GEO 3250	Climatology	3
MET 3503	Weather and Forecasting	3
MET 4230	Thermodynamics of the Atmosphere	3
MET 4500C	Synoptic Meteorology	3
MET 4410	Radar and Satellite Meteorology	3
MET 4524	Weather Briefings	1

MET 4XXX	Capstone	1
Total Credits		**21**

Further required coursework will depend on the specialization.

Students who are uncertain which specialization best suits them should consult the Department of Geography's undergraduate coordinator for information and guidance on curriculum planning.

B.S. 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.

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.

Equivalent critical-tracking courses as determined by the State of Florida Common Course Prerequisites may be used for transfer students.

Semester 1

- 2.0 UF GPA required

Semester 2

- 2.0 UF GPA required

Semester 3

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

Semester 4

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

Semester 5

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

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

Elective Courses - B.S. Meteorology, General Atmospheric Sciences

The B.S. 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:

Complete all Meteorology Theory courses:

MET 4301	Atmospheric Dynamics 1	4
MET 4450	Atmospheric Physics	3
MET 4531	Mesoscale Meteorology	3
Total Credits		**13**

Select two Atmospheric Science Elective courses: 6

MET 4532	Hurricanes	3
MET 4560	Atmospheric Teleconnections	3
MET 4750	Spatial Analysis of Atmospheric Data using GIS	3

Select one Societal Applications course: 3-4

GEO 3280	Principles of Geographic Hydrology	4
GEO 4285	Water, Risk, Extreme Events	3
GEO 2006	Natural Hazards Geography	3
GEO 3334	Managing for a Changing Climate	3
GEO 4034	Weather, Climate, and Society	3
GEO 4170	Communicating Science in the Geosciences	3

GEO 3222	Sea Level Science	3
GEO 4033	Climate Change and Health	3
GEO 3343	Extreme Droughts	3
GEO 3341	Extreme Floods	3
GLY 3174	Oceans and Global Climates	3

Select two Programming courses: 6-7

AST 2370	Intro to Python for Physical Sciences	3
COP 3275	Computer Programming using C	3
GIS 3043	Foundations of GI Systems	4
GIS 4102C	GIS Programming	3
MET 3753	Pragmatic Python for Weather	3
STA 3100	Programming with Data in R	3
GIS 4324	GIS Analysis of Hazard Vulnerability	3
GIS 4124	Geocomputation using R	3
Total Credits		**46-48**

Related coursework

CHM 2045 & CHM 2045L	General Chemistry 1 and General Chemistry 1 Laboratory	4
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 & PHY 2048L	Physics with Calculus 1 and Laboratory for Physics with Calculus 1	4
PHY 2049 & PHY 2049L	Physics with Calculus 2 and Laboratory for Physics with Calculus 2	4
STA 2023	Introduction to Statistics 1	3
Total Credits		**30**

Model semester plan - B.S. Meteorology, General Atmospheric Science

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 (GE-N) and diversity (GE-D) requirements concurrently with another general education requirement (typically, GE-C, H, or S) as part of the

CLAS Basic Distribution requirements. One of the two general education mathematics courses must be a pure math course.

Up to 15 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.

Semester One		**Credits**
MET 1010 Introduction to Weather and Climate (**Critical Tracking**; Gen Ed Physical Sciences)		3
CHM 2045 & 2045L General Chemistry 1 and General Chemistry 1 Laboratory (**Critical Tracking**; State Core Gen Ed Physical Sciences)[1]		4
MAC 2311 Analytic Geometry and Calculus 1 (**Critical Tracking**; State Core Gen Ed Mathematics)		4
State Core Gen Ed Composition; Writing Requirement		3
	Credits	14

[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.)

Semester Two		
PHY 2048 & 2048L Physics with Calculus 1 and Laboratory for Physics with Calculus 1 (Critical Tracking)		4
MAC 2312 Analytic Geometry and Calculus 2 (Gen Ed Mathematics, Critical Tracking)		4
GEO 3250 Climatology (Gen Ed Physical Sciences)		3
Quest 1 (Gen Ed Humanities)		3
	Credits	14

Semester Three	
MET 3503 Weather and Forecasting	3

PHY 2049 & 2049L Physics with Calculus 2 and Laboratory for Physics with Calculus 2		4
MAC 2313 Analytic Geometry and Calculus 3		4
Gen Ed Biological Science[2]		3
Gen Ed Social and Behavioral Sciences[2]		3
	Credits	17

[2] One general education option taken this term must be a Quest 2 course.

Semester Four

MET 4301 Atmospheric Dynamics 1		4
MAP 2302 Elementary Differential Equations		3
STA 2023 Introduction to Statistics 1 (Gen Ed Mathematics)		3
State Core Gen Ed Social and Behavioral Sciences		3
State Core Gen Ed Humanities		3
	Credits	16

Semester Five

MET 4500C Synoptic Meteorology		4
MET 4410 Radar and Satellite Meteorology		3
Foreign language		5
Societal Applications or Programming course		3
	Credits	15

Semester Six

MET 4531 Mesoscale Meteorology		3
Gen Ed Composition: Writing requirement		3
Foreign language		5
Societal Applications or Programming course		3
Internship or MET4911 (Recommended)		1
	Credits	15

Semester Seven

MET 4230 Thermodynamics of the Atmosphere		3
MET 4524 Weather Briefings		1
Gen Ed Humanities		3
Elective (3000 level or above, not in major)		3

Societal Applications or Programming course		3
Atmospheric Science elective		3
	Credits	16

Semester Eight

MET 4450 Atmospheric Physics		3
MET 4XXX Capstone Course (**Critical Tracking**)		1
Gen Ed Biological Sciences		3
Gen Ed Social and Behavioral Sciences		3
Atmospheric Science elective		3
	Credits	13
	Total Credits	120