

Bachelor of Science in Atmospheric Science

The Bachelor of Science in Atmospheric Science (B.S.) is designed to meet the recommendations of the American Meteorological Society for a bachelor's degree in meteorology/atmospheric science. There are four options, each of which meet these recommendations.

1. General Option

This option is for students who want a broad background in atmospheric science. It is also the most suitable option for those who are aiming at a career in weather forecasting. It includes a third semester of synoptic meteorology as well as an air pollution course.

2. Air Pollution Option

Students prepare for a career emphasizing environmental aspects of meteorology. This option includes an additional semester of chemistry as well as environmental studies.

3. Hydrometeorology Option

Students prepare for a career involving the interface between meteorology and hydrology. These studies have important applications to flash floods, droughts and water supply. This option includes additional courses on fluid flow and hydrology from the School of Engineering.

4. News Media Option

This option is for students who wish to enter careers whose main function is to provide information to the general public. It requires additional courses from the School of Journalism.

Undergraduate Admission

Admission to KU

All students applying for admission must send high school and college transcripts to the Office of Admissions. Prospective first-year students should be aware that KU has qualified admission requirements that all new first-year students must meet to be admitted. Consult the Office of Admissions (<http://admissions.ku.edu/>) for application deadlines and specific admission requirements.

Visit the International Support Services (<http://www.iss.ku.edu/>) for information about international admissions.

Students considering transferring to KU may see how their college-level course work will transfer on the Office of Admissions (<http://credittransfer.ku.edu/>) website.

Advising

Students who may decide to major in atmospheric science should confer early with a departmental representative about the selection of courses.

Requirements for the B.S. Degree in Atmospheric Science

4 specialized options are available for students who plan professional careers in meteorology or atmospheric science. The **general meteorology** option satisfies all the traditional professional meteorology requirements for employment with the National Weather Service, airlines, or other agencies. The **air pollution meteorology** option meets the need for trained specialists. The **hydrometeorology** option may lead to a career as a meteorologist in one of the many water-related activities in private and governmental agencies. The **news media forecasting** option can lead to a career forecasting the weather on television or radio. The B.S. degree with any of these specialties also prepares students to begin graduate programs in meteorology or atmospheric science.

Written Communication - Core Skill and Critical Inquiry

Code	Title	Hours
Composition		
Satisfied by one of the following: ¹		
ENGL 101	Composition	
ACT English score of 27 or above or SAT English score of 600 or above		
AP English Literature & Composition score of 3 or above		
Equivalent transfer course		
Critical Reading and Writing		
Satisfied by one of the following: ²		
ENGL 102	Critical Reading and Writing	
ENGL 105	Honors Introduction to English	
AP English Literature & Composition score of 4 or above		
Equivalent transfer course		
Sophomore Reading and Writing II		
Satisfied by one of the following:		
ENGL 203	Topics in Reading and Writing: _____	
ENGL 205	Freshman-Sophomore Honors Proseminar: _____	
ENGL 209	Introduction to Fiction	
ENGL 210	Introduction to Poetry	
ENGL 211	Introduction to the Drama	
ENGL 362	Foundations of Technical Writing (recommended)	
AP English Literature & Composition score of 5 or above		
Equivalent		

¹ Requirement must be completed during initial term of admission at KU.

² Requirement must be completed within the first academic year at KU.

Communication - Core Skills and Critical Inquiry. Satisfied by the following:

Code	Title	Hours
Select one of the following:		
COMS 130	Speaker-Audience Communication	
COMS 131	Speaker-Audience Communication, Honors	

Code	Title	Hours
Atmospheric Science Prerequisite or Co-requisite Knowledge		

Majors must complete courses as specified in each of the following areas. Majors are advised to take honors courses when eligible. These hours do not contribute to the minimum number of hours required for the major.

Computing and Programming. Satisfied by the following:

EECS 138	Introduction to Computing: _____ (Fortran preferred; C++ and Matlab accepted)	3
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Introduction to Physical Geography. Satisfied by the following:

GEOG 104	Introduction to Physical Geography	3
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Calculus I. Satisfied by one of the following:

MATH 125	Calculus I	4
or MATH 145	Calculus I, Honors Equivalent	

Calculus II. Satisfied by one of the following:

MATH 126	Calculus II	4
or MATH 146	Calculus II, Honors Equivalent	

General Physics I. Satisfied by one of the following:

PHSX 211 & PHSX 216	General Physics I and General Physics I Laboratory	5-6
PHSX 114 & PHSX 201 & PHSX 216	College Physics I and Calculus Supplement to College Physics I and General Physics I Laboratory	
PHSX 213	General Physics I Honors	

General Physics II. Satisfied by one of the following:

PHSX 212 & PHSX 236	General Physics II and General Physics II Laboratory	4-6
PHSX 115 & PHSX 202 & PHSX 236	College Physics II and Calculus Supplement to College Physics II and General Physics II Laboratory	
PHSX 214	General Physics II Honors	

Foundations of Chemistry I. Satisfied by the following:

CHEM 130	General Chemistry I	5
or CHEM 190 & CHEM 191	Foundations of Chemistry I, Honors and Foundations of Chemistry I Laboratory, Honors	

Vector Calculus. Satisfied by the following:

MATH 127	Calculus III	4
or MATH 147	Calculus III, Honors	

Elementary Linear Algebra. Satisfied by the following:

MATH 290	Elementary Linear Algebra	2
or MATH 291	Elementary Linear Algebra, Honors	

Applied Differential Equation. Satisfied by the following:

MATH 320	Elementary Differential Equations	3
or MATH 220	Applied Differential Equations	

Statistics. Satisfied by the following:

MATH 526	Applied Mathematical Statistics I	3
or BSAN 202	Statistics	

Numerical Methods. Satisfied by the following:

MATH 581	Numerical Methods	3
GEOG 358	Introduction to Geographic Information Systems	4

Atmospheric Science Core Knowledge and Skills

Majors must complete all of the following:

Introductory Meteorology. Satisfied by:	5
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ATMO 105 Introductory Meteorology

Climate and Climate Change. Satisfied by:	3
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ATMO/GEOG 321 Climate and Climate Change

Weather Forecasting. Satisfied by:	3
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ATMO 505 Weather Forecasting

Microclimatology. Satisfied by:	3
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ATMO/GEOG 521 Microclimatology

Synoptic Meteorology. Satisfied by:	3
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ATMO 630 Synoptic Meteorology

Dynamic Meteorology. Satisfied by:	3
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ATMO 640 Dynamic Meteorology

Remote Sensing. Satisfied by:	3
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ATMO 642 Remote Sensing

Advanced Dynamic Meteorology. Satisfied by:	3
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ATMO 660 Advanced Dynamic Meteorology

Physical Meteorology. Satisfied by:	3
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ATMO 680 Physical Meteorology

Seminar for Seniors. Satisfied by:	1
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ATMO 697 Seminar for Seniors

Total Hours	77-80
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Meteorology Option

Students selecting this major must select one of the following options:

General Meteorology Option

This option satisfies all the traditional professional meteorology requirements for employment with the National Weather Service, airlines, or other agencies.

Code	Title	Hours
Air Pollution Meteorology. Satisfied by:		
ATMO 525	Air Pollution Meteorology	3
Operational Forecasting. Satisfied by:		
ATMO 605	Operational Forecasting	2
Advanced Synoptic Meteorology. Satisfied by:		
ATMO 650	Advanced Synoptic Meteorology	3

Air Pollution Meteorology Option

This option meets the need for trained specialists.

Code	Title	Hours
Air Pollution Meteorology. Satisfied by:		
ATMO 525	Air Pollution Meteorology	3
Foundations of Chemistry II. Satisfied by:		
CHEM 135	General Chemistry II	5
or CHEM 195 & CHEM 196	Foundations of Chemistry II, Honors and Foundations of Chemistry II Laboratory, Honors	
Introduction to Environmental Engineering and Science. Satisfied by:		
CE 477	Introduction to Environmental Engineering and Science	3

Hydrometeorology Option

This option may lead to a career as a meteorologist in one of the many water-related activities in private and governmental agencies.

Code	Title	Hours
Air Pollution Meteorology. Satisfied by:		
ATMO 525	Air Pollution Meteorology	3
Operational Forecasting. Satisfied by:		
ATMO 605	Operational Forecasting	2
Statics and Dynamics. Satisfied by:		
CE 260	Statics and Dynamics	5
Fluid Mechanics. Satisfied by:		
CE 330	Fluid Mechanics	3
Hydrology. Satisfied by:		
CE 455	Hydrology	3

News Media Forecasting Option

This option can lead to a career forecasting the weather on television or radio.

Code	Title	Hours
Operational Forecasting. Satisfied by:		
ATMO 605	Operational Forecasting	2
Advanced Synoptic Meteorology. Satisfied by:		
ATMO 650	Advanced Synoptic Meteorology	3
Infomania: Information Management. Satisfied by:		
JOUR 302	Information Exploration	3
Writing for Media. Satisfied by:		
JOUR 304	Media Writing for Audiences	3
Multimedia Reporting. Satisfied by:		
JOUR 415	Multimedia Reporting	3

Major Hours & Major GPA

While completing all required courses (above), majors must also meet each of the following hour and grade-point average minimum standards:

Major Hours

Satisfied by 33 hours of major courses.

Major Hours in Residence

Satisfied by a minimum of 15 hours of KU resident credit in the major.

Major Junior/Senior (300+) Hours

Satisfied by a minimum of 30 hours from junior/senior courses (300+) in the major.

Major Junior/Senior (300+) Graduation GPA

Satisfied by a minimum of a 2.0 KU GPA in junior/senior courses (300+) in the major. GPA calculations include all junior/senior courses in the field of study including F's and repeated courses. See the Semester/Cumulative GPA Calculator (<http://clas.ku.edu/undergrad/tools/gpa/>).

Departmental Honors in Atmospheric Science

To be accepted as a candidate for honors, an undergraduate major must have completed at least 9 hours of upper-division credit in atmospheric science with a grade-point average of 3.5 in all atmospheric science courses. In addition, the program requires ATMO 499, an independent study course consisting of the creation of an honors paper. The student presents the results of this paper in an oral examination to a committee of a minimum of 2 faculty members, normally from the geography department, and chaired by the ATMO 499 supervisor. To graduate with honors, the student must complete the paper and the examination and maintain the 3.5 grade-point average.