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. Unless they are college transfer students with at least 24 hours of credit, prospective students must send ACT or SAT scores 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 Office of International Student and Scholar 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

Composition (0)

Satisfied by one of the following: ¹

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ENGL 101</td>
<td>Composition</td>
</tr>
<tr>
<td>ACT English score of 27 or above or SAT English score of 600 or above</td>
<td></td>
</tr>
<tr>
<td>AP English Literature &amp; Composition score of 3 or above</td>
<td></td>
</tr>
<tr>
<td>Equivalent transfer course</td>
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</tbody>
</table>

Critical Reading and Writing (0)

Satisfied by one of the following: ²

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>ENGL 102</td>
<td>Critical Reading and Writing</td>
</tr>
<tr>
<td>ENGL 105</td>
<td>Honors Introduction to English</td>
</tr>
<tr>
<td>AP English Literature &amp; Composition score of 4 or above</td>
<td></td>
</tr>
<tr>
<td>Equivalent transfer course</td>
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</table>

Sophomore Reading and Writing II (0)

Satisfied by one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ENGL 203</td>
<td>Topics in Reading and Writing: _____</td>
</tr>
<tr>
<td>ENGL 205</td>
<td>Freshman-Sophomore Honors Proseminar: _____</td>
</tr>
<tr>
<td>ENGL 209</td>
<td>Introduction to Fiction</td>
</tr>
<tr>
<td>ENGL 210</td>
<td>Introduction to Poetry</td>
</tr>
<tr>
<td>ENGL 211</td>
<td>Introduction to the Drama</td>
</tr>
<tr>
<td>ENGL 362</td>
<td>Foundations of Technical Writing (recommended)</td>
</tr>
<tr>
<td>AP English Literature &amp; Composition score of 5 or above</td>
<td></td>
</tr>
<tr>
<td>Equivalent</td>
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</tbody>
</table>

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:

Select one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>COMS 130</td>
<td>Speaker-Audience Communication</td>
</tr>
<tr>
<td>COMS 131</td>
<td>Speaker-Audience Communication, Honors</td>
</tr>
</tbody>
</table>
or COMS 150  Personal Communication

**Humanities - Understanding the Human Condition.** Satisfied by completing 1 course with requirement code H. Approved courses may be searched for availability through the Kyou portal.

**Social and Behavioral Sciences - Understanding Society and Behavior.** Satisfied by completing one course with requirement code S. Approved courses may be searched for availability through the Kyou portal.

**Atmospheric Science Prerequisite or Co-requisite Knowledge (47-50)**

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

**Scientific Principles of Environmental Studies.** Satisfied by the following:
- EVRN 148  Scientific Principles of Environmental Studies 3

**Calculus I.** Satisfied by one of the following:
- MATH 125  Calculus I 4
- MATH 145  Calculus I, Honors 4
  
**Equivalent**

**Calculus II.** Satisfied by one of the following:
- MATH 126  Calculus II 4
- MATH 146  Calculus II, Honors 4
  
**Equivalent**

**General Physics I.** Satisfied by one of the following:
- PHSX 211  General Physics I 5
- PHSX 216  and General Physics I Laboratory 5
- PHSX 114  College Physics I 5
- PHSX 201  and Calculus Supplement to College Physics I 5
- PHSX 216  and General Physics I Laboratory 5
- PHSX 213  General Physics I Honors 5

**General Physics II.** Satisfied by one of the following:
- PHSX 212  General Physics II 4
- PHSX 236  and General Physics II Laboratory 4
- PHSX 115  College Physics II 4
- PHSX 202  and Calculus Supplement to College Physics II 4
- PHSX 236  and General Physics II Laboratory 4
- PHSX 214  General Physics II Honors 4

**Foundations of Chemistry I.** Satisfied by the following:
- CHEM 130  General Chemistry I 5
- CHEM 190  Foundations of Chemistry I, Honors 5
  
**Vector Calculus.** Satisfied by the following:
- MATH 127  Calculus III 4
- MATH 147  Calculus III, Honors 4

**Elementary Linear Algebra.** Satisfied by the following:
- MATH 290  Elementary Linear Algebra 2
- MATH 291  Elementary Linear Algebra, Honors 2

**Applied Differential Equation.** Satisfied by the following:
- MATH 320  Elementary Differential Equations 3
- MATH 220  Applied Differential Equations 3

**Statistics.** Satisfied by the following:
- MATH 526  Applied Mathematical Statistics I 3
- DSCI 202  Statistics 3

**Numerical Methods.** Satisfied by the following:
- MATH 581  Numerical Methods 3
- GEOG 358  Principles of Geographic Information Systems 4

**Atmospheric Science Core Knowledge and Skills (30)**

Majors must complete all of the following:

**Introductory Meteorology.** Satisfied by:
- ATMO 105  Introductory Meteorology 5

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

**Weather Forecasting.** Satisfied by:
- ATMO 505  Weather Forecasting 3

**Microclimatology.** Satisfied by:
- ATMO/GEOG 521  Microclimatology 3

**Synoptic Meteorology.** Satisfied by:
- ATMO 630  Synoptic Meteorology 3

**Dynamic Meteorology.** Satisfied by:
- ATMO 640  Dynamic Meteorology 3

**Remote Sensing.** Satisfied by:
- ATMO 642  Remote Sensing 3

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

**Physical Meteorology.** Satisfied by:
- ATMO 680  Physical Meteorology 3

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

**Total Hours** 77-80

**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.

**Air Pollution Meteorology.** Satisfied by:
- ATMO 525  Air Pollution Meteorology 3
- ATMO 605  Operational Forecasting 2
- ATMO 650  Advanced Synoptic Meteorology 3

**Air Pollution Meteorology Option**

This option meets the need for trained specialists.

**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  Foundations of Chemistry II, Honors
& CHEM 196  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.

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 301  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.

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  Infomania: Information Management  3

Writing for Media. Satisfied by:
JOUR 304  Media Writing  3

Multimedia Reporting. Satisfied by:
JOUR 415  Multimedia Reporting  3

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 and an overall average of at least 3.25. 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 and 3.25 grade-point averages.

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).