# Meteorology - BS

The Department of Atmospheric Sciences offers the Bachelor of Science degree in Meteorology. The undergraduate curriculum in meteorology emphasizes weather and weather forecasting, but also includes courses in climatology, atmospheric chemistry, cloud physics and remote sensing of the atmosphere with radar and satellites. As the curriculum makes clear, the study of these subjects relies on a foundation of physics, chemistry and mathematics. The atmospheric sciences also have close connections to oceanography and hydrology.

Students who receive BS degrees in Meteorology often obtain employment with the National Weather Service, private meteorological consulting and weather forecasting companies, air quality consulting firms, airlines, TV stations, energy trading companies, universities, state governments, agricultural firms and computer-related industries. Some students choose to enter the military services as weather officers. Positions in teaching and research normally require a graduate degree.

Students interested in cooperative educational arrangements and internships should contact the department’s academic advisor for information.

In the curriculum presented, students are advised to note carefully the prerequisites for many of the courses.

## Program Requirements

### First Year

#### Fall

- **ATMO 201**: Weather and Climate 3
- **CHEM 101 & CHEM 111**: Fundamentals of Chemistry I and Fundamentals of Chemistry Laboratory I 4
- **ENGL 104**: Composition and Rhetoric 3
- **MATH 151 or MATH 171**: Engineering Mathematics I or Analytic Geometry and Calculus 4

**Semester Credit Hours**: 14

#### Spring

- **ATMO 203**: Weather Forecasting Laboratory 1
- **CHEM 102 & CHEM 112**: Fundamentals of Chemistry II and Fundamentals of Chemistry Laboratory II 4
- **MATH 152 or MATH 172**: Engineering Mathematics II or Calculus 4
- **PHYS 218**: Mechanics 4

Select one of the following:
- American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history)
- Government/political science (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science)

**Semester Credit Hours**: 16

### Second Year

#### Fall

- **ATMO 251**: Weather Observation and Analysis 3

**Semester Credit Hours**: 16

### Third Year

#### Fall

- **ATMO 321 or CSCE 206**: Computer Applications in the Atmospheric Sciences or Structured Programming in C 3
- **ATMO 363**: Introduction to Atmospheric Chemistry and Air Pollution 3
- **MATH 251**: Engineering Mathematics III 3

Select one of the following:
- American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history)
- Government/political science (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science)

**Semester Credit Hours**: 15

#### Spring

- **ATMO 324**: Physical and Regional Climatology 3
- **MATH 308**: Differential Equations 3
- **PHYS 208**: Electricity and Optics 4

Select one of the following:
- American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history)
- Government/political science (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#government-political-science)
- Atmospheric sciences or tech. elective (http://catalog.tamu.edu/undergraduate/course-descriptions/atmo) 3

**Semester Credit Hours**: 14

### Fourth Year

#### Spring

- **ATMO 435**: Synoptic-Dynamic Meteorology 3
- Atmospheric sciences or tech. electives (http://catalog.tamu.edu/undergraduate/course-descriptions/atmo) 6

**Semester Credit Hours**: 15

### General Electives

- Language, philosophy and culture elective (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture) 3

**Total Semester Credit Hours**: 120
Fourth Year

Fall

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ATMO 446</td>
<td>Physical Meteorology</td>
<td>3</td>
</tr>
<tr>
<td>ATMO 441</td>
<td>Satellite Meteorology and Remote Sensing</td>
<td>3</td>
</tr>
<tr>
<td>or ATMO 443</td>
<td>or Radar Meteorology</td>
<td>3</td>
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<tr>
<td></td>
<td>Atmospheric sciences or tech. electives</td>
<td>3</td>
</tr>
<tr>
<td>General elective 4,5</td>
<td></td>
<td>3</td>
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<tr>
<td></td>
<td>Social and behavioral science elective</td>
<td>3</td>
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Semester Credit Hours 15

Spring

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<tr>
<th>Course</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Atmospheric sciences or tech. electives</td>
<td>9</td>
</tr>
<tr>
<td>Creative arts elective</td>
<td>3</td>
</tr>
<tr>
<td>General elective 4,5</td>
<td>3</td>
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</tbody>
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Semester Credit Hours 15

Total Semester Credit Hours 120

1 A grade of C or better is required.
2 All students enter as Lower Level Meterology (METL) until completion of ATMO 335 and ATMO 336 and the associated prerequisite courses. Once students have completed these courses, their major will be changed to Upper Level Meterology (METR), and they will be eligible to take upper-level electives. This change should occur following Fall of the junior year.
3 Select in consultation with faculty academic advisor.
4 General electives may not include CAEN 101-499; CAEX 101-499; DEVS 101-499; ENGL 103; KINE 198-199; MATH 102, MATH 131, MATH 141-142; MATH 150-152; MATH 221, MATH 251, MATH 253; PHYS 101, PHYS 201-202; PHYS 208, PHYS 218-219; AERS 100-499; MLSC 100-499; NVSC 100-499; SOMS 100-499.
5 MLSC, NVSC and AERS courses can be used as general electives if a minor is completed in Military Science. See an academic advisor for more information.