

METEOROLOGY, B.S.

Meteorology is more than just the study of weather; it includes all the atmosphere's characteristics, structures, and processes. Students who major in meteorology at Saint Louis University apply basic principles of physics and chemistry to discover what makes the atmosphere work. Mathematical equations and techniques are used to predict the weather based on present conditions.

Recently, meteorology has become increasingly vital to humankind's concerns. Ozone depletion and global warming have been identified as threats to human existence on earth. Meteorologists are on the front lines of the battle to learn more about and model these phenomena.

Program Highlights

- SLU's Bachelor of Science in Meteorology program emphasizes professional recognition, admission to graduate schools and employment with the National Weather Service.
- The American Meteorological Society readily accepts B.S. degree holders as members.
- SLU research centers include the Cooperative Institute for Precipitation Systems, the Global Geodynamics Program and the Center for Environmental Sciences and Quantum Weather™.

Curriculum Overview

The meteorology curriculum at Saint Louis University emphasizes both theory and practical application in fundamental and innovative aspects of the atmospheric sciences. Since class sizes are relatively small, students develop effective relationships with their instructors. This personalized instruction stimulates students' academic interest and professional dedication, which is further strengthened by SLU's Jesuit tradition of education.

Fieldwork and Research Opportunities

Students in the meteorology program at Saint Louis University can take advantage of the National Weather Service (NWS) Forecast Office, which is located near the University and regularly accepts SLU students for internships. Classes often take field trips to the office to experience NWS operations. There are four commercial TV stations in the St. Louis area that regularly feature weather reports and with whom internships are available. Students can earn six credits through an internship.

Careers

A Bachelor of Science in Meteorology can prepare you to become an atmospheric scientist, climatologist or weather forecaster. It is also excellent preparation for graduate school.

Admission Requirements

Begin Your Application (<http://www.slu.edu/apply.php>)

Saint Louis University also accepts the Common Application.

Freshman

All applications are thoroughly reviewed with the highest degree of individual care and consideration to all credentials that are submitted. Solid academic performance in college preparatory coursework is a primary concern in reviewing a freshman applicant's file.

To be considered for admission to any Saint Louis University undergraduate program, applicants must be graduating from an accredited high school, have an acceptable HiSET exam score or take the General Education Development (GED) test.

Transfer

Applicants must be a graduate of an accredited high school or have an acceptable score on the GED.

Students who have attempted fewer than 24 semester credits (or 30 quarter credits) of college credit must follow the above freshmen admission requirements. Students who have completed 24 or more semester credits (or 30 quarter credits) of college credit must submit transcripts from all previously attended college(s).

In reviewing a transfer applicant's file, the Office of Admission holistically examines the student's academic performance in college-level coursework as an indicator of the student's ability to meet the academic rigors of Saint Louis University. Where applicable, transfer students will be evaluated on any courses outlined in the continuation standards of their preferred major.

International Applicants

All admission policies and requirements for domestic students apply to international students along with the following:

- Demonstrate English Language Proficiency (<https://catalog.slu.edu/academic-policies/office-admission/undergraduate/english-language-proficiency/>)
- Proof of financial support must include:
 - A letter of financial support from the person(s) or sponsoring agency funding the time at Saint Louis University
 - A letter from the sponsor's bank verifying that the funds are available and will be so for the duration of study at the University
- Academic records, in English translation, of students who have undertaken postsecondary studies outside the United States must include the courses taken and/or lectures attended, practical laboratory work, the maximum and minimum grades attainable, the grades earned or the results of all end-of-term examinations, and any honors or degrees received. WES and ECE transcripts are accepted.

Tuition

| Tuition | Cost Per Year |
|-----------------------|---------------|
| Undergraduate Tuition | \$52,260 |

Additional charges may apply. Other resources are listed below:

Net Price Calculator (<https://www.slu.edu/financial-aid/tuition-and-costs/calculator.php>)

Information on Tuition and Fees (<https://catalog.slu.edu/academic-policies/student-financial-services/tuition/>)

Miscellaneous Fees (<https://catalog.slu.edu/academic-policies/student-financial-services/fees/>)

Information on Summer Tuition (<https://catalog.slu.edu/academic-policies/student-financial-services/tuition-summer/>)

Scholarships and Financial Aid

There are two principal ways to help finance a Saint Louis University education:

- **Scholarships:** Scholarships are awarded based on academic achievement, service, leadership and financial need.
- **Financial Aid:** Financial aid is provided through grants and loans, some of which require repayment.

Saint Louis University makes every effort to keep our education affordable. In fiscal year 2022, 99% of first-time freshmen and 90% of all students received financial aid (<https://www.slu.edu/financial-aid/>) and students received more than \$445 million in aid University-wide.

For priority consideration for merit-based scholarships, apply for admission by December 1 and complete a Free Application for Federal Student Aid (FAFSA) by March 1.

For information on other scholarships and financial aid, visit www.slu.edu/financial-aid (<https://www.slu.edu/financial-aid/>).

Learning Outcomes

1. Graduates will know the founding principles in their field of study as well as the facts and content appropriate to the field.
2. Graduates will be able to use their knowledge to reason about issues in their discipline.
3. Graduates will be able to solve quantitative problems in their discipline.

Requirements

Meteorology students must complete a minimum total of **83 credits** for the major.

| Code | Title | Credits |
|--|---|---------|
| University Undergraduate Core (https://catalog.slu.edu/academic-policies/academic-policies-procedures/university-core/) | | |
| Major Requirements | | |
| EAS 1420 & EAS 1425 | Introduction to Atmospheric Science and Introduction to Atmospheric Science Lab | 4 |
| EAS 1450 & EAS 1455 | Introduction to Oceanography and Intro to Oceanography Lab * | 4 |
| or EAS 1430 & EAS 1435 | Introduction to the Solid Earth and Introduction to the Solid Earth Lab | |
| EAS 1700 | Weather Briefing | 1 |
| EAS 2440 | Atmospheric Processes and Systems | 3 |
| EAS 2530 | Fundamentals of Climate Systems | 3 |
| EAS 2800 | Radar Meteorology | 3 |
| EAS 2820 | Satellite Remote Sensing | 3 |
| EAS 3330 | Physical Meteorology I | 3 |
| EAS 3340 | Physical Meteorology II | 3 |
| EAS 4200 | Synoptic Meteorology I | 3 |
| EAS 4220 | Synoptic Meteorology II | 3 |
| EAS 4440 | Principles of Dynamic Meteorology I | 3 |
| EAS 4450 | Principles of Dynamic Meteorology II | 3 |
| EAS 4880 | Senior Inquiry Research Project | 3 |
| PHYS 1610 & PHYS 1620 | University Physics I and University Physics I Laboratory | 4 |

| | | |
|-------------------------------|--|----------|
| PHYS 1630 & PHYS 1640 | University Physics II and University Physics II Laboratory | 4 |
| MATH 1510 | Calculus I | 4 |
| MATH 1520 | Calculus II | 4 |
| MATH 2530 | Calculus III | 4 |
| MATH 3550 | Differential Equations | 3 |
| EAS 3500 | Numerical Modeling Applications | 3 |
| or CSCI 1060 | Introduction to Computer Science: Scientific Programming | |
| CHEM 1110 | General Chemistry 1 | 3 |
| GIS 4010 | Introduction to Geographic Information Systems | 3 |
| Major Elective Courses | | 9 |

Select a minimum of 6 credits from the following:

| | |
|---------------------|---|
| EAS 1450 & EAS 1455 | Introduction to Oceanography and Intro to Oceanography Lab * |
| EAS 1430 & EAS 1435 | Introduction to the Solid Earth and Introduction to the Solid Earth Lab * |
| EAS 2450 | Communicating in Science |
| EAS 3150 | Broadcast Meteorology I |
| EAS 3500 | Numerical Modeling Applications * |
| EAS 3700 | Mesoanalysis and Severe Storms |
| EAS 3780 | COMET Modules |
| EAS 4030 | Elements of Air Pollution |
| EAS 4470 | Elementary Tropical Meteorology |
| EAS 4910 | Internship |

Select a minimum of 3 credits from the following:

| | |
|------------------------|---|
| EMGT 1500 | Fundamentals of Emergency Management |
| ASCI 1510 | The Air Transportation System |
| CSCI 1300 | Introduction to Object-Oriented Programming |
| PHYS 2610 | Modern Physics |
| PHYS 3110 | Classical Mechanics |
| MATH 1300 or STAT 1300 | Elementary Statistics with Computers |
| MATH 1660 | Discrete Mathematics |
| MATH 3110 | Linear Algebra for Engineers |
| MATH 3120 | Introduction to Linear Algebra |
| MATH 3240 | Numerical Analysis |
| MATH 3270 | Advanced Mathematics for Engineers |
| MATH 4310 | Introduction to Complex Variables |
| MATH 4550 | Nonlinear Dynamics and Chaos |
| MATH 4570 | Partial Differential Equations |
| STAT 3850 | Foundation of Statistics |

| | |
|--------------------------|------------|
| General Electives | 2-5 |
| Total Credits | 120 |

* Cannot count for both a required course and an elective.

Non-Course Requirements

All Science and Engineering B.A. and B.S. students must complete an exit interview/survey near the end of their bachelor's program.

Continuation Standards

Students must have a minimum of a 2.00 GPA in their major courses (EAS) and required related credits (Biology, Chemistry, Mathematics and Computer Sciences, Physics, etc.) by the conclusion of their freshman year. Students that fall below a 2.00 GPA will be placed on probation. If a student fails to obtain at least a 2.0 GPA in their major courses and required related credits by the conclusion of their sophomore year they will not be allowed to continue in the program.

Roadmap

Roadmaps are recommended semester-by-semester plans of study for programs and assume full-time enrollment unless otherwise noted.

Courses and milestones designated as critical (marked with !) must be completed in the semester listed to ensure a timely graduation. Transfer credit may change the roadmap.

This roadmap should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor/mentor each semester. Requirements, course availability and sequencing are subject to change.

| Course | Title | Credits |
|--|---|-----------|
| Year One | | |
| Fall | | |
| EAS 1420 & EAS 1425 | Introduction to Atmospheric Science and Introduction to Atmospheric Science Lab | 4 |
| MATH 1400 | Pre-Calculus | 3 |
| University Core and/or General Electives | | 4 |
| Credits | | 11 |
| Spring | | |
| EAS 1700 | Weather Briefing | 1 |
| EAS 1430 & EAS 1435 | Introduction to the Solid Earth and Introduction to the Solid Earth Lab | 4 |
| Or | | |
| EAS 1450 & EAS 1455 | Introduction to Oceanography and Intro to Oceanography Lab | |
| MATH 1510 | Calculus I | 4 |
| CHEM 1110 | General Chemistry I | 3 |
| University Core and/or General Electives | | 3 |
| Credits | | 15 |
| Year Two | | |
| Fall | | |
| EAS 2440 | Atmospheric Processes | 3 |
| EAS 2530 | Climate and Climate Change | 3 |
| MATH 1520 | Calculus II | 4 |
| PHYS 1610 & PHYS 1620 | University Physics I and University Physics I Laboratory | 4 |
| University Core and/or General Electives | | 3 |
| Credits | | 17 |
| Spring | | |
| EAS 2800 | Radar Meteorology | 3 |
| EAS 3330 | Atmospheric Thermodynamics | 3 |
| MATH 2530 | Calculus III | 4 |

| | | |
|--|--|------------|
| PHYS 1630 & PHYS 1640 | University Physics II and University Physics II Laboratory | 4 |
| CSCI 1060 | Introduction to Computer Science: Scientific Programming | 3 |
| Credits | | 17 |
| Year Three | | |
| Fall | | |
| EAS 3340 | Physical Meteorology | 3 |
| EAS 4200 | Synoptic Meteorology I | 3 |
| MATH 3550 | Differential Equations | 3 |
| Meteorology Elective | | 3 |
| University Core and/or General Electives | | 3 |
| Credits | | 15 |
| Spring | | |
| EAS 2820 | Satellite Remote Sensing | 3 |
| EAS 4440 | Principles of Dynamic Meteorology I | 3 |
| Meteorology Elective | | 3 |
| Math Elective | | 3 |
| University Core and/or General Electives | | 3 |
| Credits | | 15 |
| Year Four | | |
| Fall | | |
| EAS 4440 | Principles of Dynamic Meteorology I | 3 |
| Meteorology elective | | 3 |
| Meteorology elective | | 3 |
| University Core and/or General Electives | | 6 |
| Credits | | 15 |
| Spring | | |
| EAS 4450 | Principles of Dynamic Meteorology II | 3 |
| EAS 4880 | Senior Inquiry Research Project | 3 |
| Meteorology elective | | 3 |
| University Core and/or General Electives | | 6 |
| Credits | | 15 |
| Total Credits | | 120 |