

METEOROLOGY, B.S.

Meteorology is more than just the study of weather; it includes all the characteristics, structures and processes of the atmosphere. Basic principles of physics and chemistry are applied 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.

Additional program highlights include:

- SLU's Bachelor of Science in Meteorology program places an emphasis on 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 academic interest and professional dedication among students, 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
- 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.

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 in the form of grants and loans, some of which require repayment.

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

For information on other scholarships and financial aid, visit the student financial services office online at <https://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
Core Requirement		
College core requirements (p. 2)		54-63
For additional information about core courses		
Required Courses		
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	3
EAS 2530	Climate and Climate Change	3
EAS 2800	Radar Meteorology	3
EAS 2820	Satellite Remote Sensing	3
EAS 3330	Atmospheric Thermodynamics	3
EAS 3340	Physical Meteorology	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 or CSCI 1060	Numerical Modeling Applications Introduction to Computer Science: Scientific Programming	3
CHEM 1110	General Chemistry I	3
GIS 4010	Introduction to Geographic Information Systems	3
Elective Courses		
Select a minimum of 6 credits from the following:		6
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	
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:		3
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	Elementary Statistics with Computers 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	
Total Credits		137-146

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

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.

Bachelor of Science Core Curriculum Requirements

Code	Title	Credits
Please note: beginning in Fall 2022, all incoming SLU undergraduates—regardless of major, program, college or school—will complete the University Core curriculum. You can find more information about SLU's common Core here: https://www.slu.edu/core/index.php (https://www.slu.edu/core/)		
Core Components and Credits		
	Foundations of Discourse	3
	Diversity in the U.S.	3
	Global Citizenship	3
	Foreign Language	0-6
	Fine Arts	3
	Literature	6
	Mathematics	4
	Science	8
	Philosophy	6
	Social Science	6
	Theology	6

World History	6
Total Credits	54-60

Graduation Requirements

- Complete a minimum of 120 credits (excluding pre-college level courses numbered below 1000).
- Complete either the College of Arts and Sciences Bachelor of Arts or Bachelor of Science Core Curriculum Requirements.
- Complete major requirements: minimum 30 credits required.
- Complete remaining credits with a second major, minor, certificate, and/or electives to reach the minimum of 120 credits required for graduation.
- Achieve at least a 2.00 cumulative grade point average, a 2.00 grade point average in the major(s) and a 2.00 grade point average in the minor/certificate, or related elective credits.
- Complete department/program-specific academic and performance requirements.
- Complete at least 50% of the coursework for the major and 75% for the minor/certificate through Saint Louis University or an approved study abroad program.
- Complete 30 of the final 36 credits through Saint Louis University or an approved study abroad program.
- Complete an online degree application by the required University deadline.

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
A&S Core		3
A&S Core		3
A&S Core		3
Credits		16
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 1	3
A&S Core		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
A&S Core		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
A&S Core		3
Credits		15
Spring		
EAS 2820	Satellite Remote Sensing	3
EAS 4440	Principles of Dynamic Meteorology I	3
Meteorology Elective		3
Math Elective		3
A&S Core		3
Credits		15
Year Four		
Fall		
EAS 4440	Principles of Dynamic Meteorology I	3
Meteorology elective		3
Meteorology elective		3
A&S Core		3
A&S Core		3
Credits		15
Spring		
EAS 4450	Principles of Dynamic Meteorology II	3
EAS 4880	Senior Inquiry Research Project	3
Meteorology elective		3
A&S Core		3
A&S Core		3
Credits		15
Total Credits		125