

METEOROLOGY, PH.D.

Study physical processes such as the transfer of radiation, the dynamics of air motion and convection resulting in severe storms, flash floods and hurricanes as you prepare to be a meteorologist at Saint Louis University.

Ph.D. students at SLU participate in research on heavy precipitation, regional climate and air quality using numerical weather prediction models. Faculty members and student researchers collaborate with meteorologists at national centers and operational meteorologists at the nearby National Weather Service St. Louis forecast offices.

Curriculum Overview

SLU's Doctor of Philosophy in Meteorology requires a total of 30 credits beyond the master's degree, including 12 credits of dissertation research. SLU's Ph.D. in meteorology may be pursued directly from the baccalaureate with the permission of the program director.

Fieldwork and Research Opportunities

SLU's Department of Earth, Environmental, and Geospatial Science is a charter member of the University Corporation for Atmospheric Research (UCAR), which manages the National Center for Atmospheric Research in Boulder, Colorado, under the sponsorship of the National Science Foundation.

External funding for research comes from the National Oceanic and Atmospheric Administration, the National Weather Service and the National Aeronautics and Space Administration. In addition, the department has a dedicated synoptic computer lab and receives real-time data from satellite downlink and the internet.

Software for displaying and analyzing weather data comes from the Unidata Program Center, the National Weather Service and locally written code.

Careers

SLU meteorology graduates work for federal and state government agencies, such as the National Weather Service, Federal Aviation Administration, NASA and the Environmental Protection Agency. Others work in the private sector, conducting atmospheric and agricultural research, weather forecasting and air quality assessments.

Admission Requirements

Successful applicants possess sufficient GPA and English proficiency scores (for international students) and research interests compatible with ongoing research in the department.

An undergraduate degree in meteorology or a related field, including differential equations and physics coursework, is required.

Application Requirements

- Application form
- Three letters of recommendation
- Transcript(s)
- Professional goal statement
- Résumé
- GRE scores are optional

Requirements for International Students

All admission policies and requirements for domestic students apply to international students. International students must also meet the following additional requirements:

- Demonstrate English Language Proficiency (<https://catalog.slu.edu/academic-policies/office-admission/undergraduate/english-language-proficiency/>)
- Academic records, in English translation, of students who have undertaken postsecondary studies outside the United States must include:
 - 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
 - Any honors or degrees received.
- WES and ECE transcripts are accepted.
- In order to be issued an I-20 for your F-1 visa application, students must submit financial documents. Proof of financial support that must include:
 - A letter of financial support from the person(s) or sponsoring agency funding the student's 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 the student's study at the University

Application and Assistantship Application Deadlines

Students typically begin the program in the fall semester. Students who want to be considered for an assistantship must submit their applications by Jan. 2. Late applications and applications for the spring semester will be considered if positions are available.

Review Process

Faculty committee members examine qualified applicants' materials and make recommendations.

Tuition

Tuition	Cost Per Credit
Graduate Tuition	\$1,400

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, Assistantships and Financial Aid

For priority consideration for a graduate assistantship, apply by the program admission deadlines listed. Fellowships and assistantships

provide a stipend and may include health insurance and a tuition scholarship for the duration of the award.

Explore Scholarships and Financial Aid Options (<https://www.slu.edu/financial-aid/types-of-aid/>)

Learning Outcomes

1. Graduates will be able to assess relevant literature or scholarly contributions in the earth and atmospheric sciences.
2. Graduates will be able to apply the major practices, theories or research methodologies in the earth and atmospheric sciences.
3. Graduates will be able to apply knowledge from the earth and atmospheric sciences to address problems in broader contexts.
4. Graduates will be able to articulate arguments or explanations to both a disciplinary or professional audience and to a general audience in oral forms.
5. Graduates will be able to articulate arguments or explanations to both a disciplinary or professional audience and to a general audience in written forms.
6. Graduates will be able to evidence scholarly and/or professional integrity in earth and atmospheric sciences.

Requirements

Code	Title	Credits
Required Courses		
EAS 5080	Dynamics of the Atmosphere	3
EAS 5090	Physics of the Atmosphere	3
EAS 5300	Seminar in Atmospheric Science	1
EAS 5330	Communicating in Research	2
Elective Courses		
Select 9-39 credits of the following: ¹		9-39
EAS 5110	Computing in Atmospheric Science	
EAS 5270	Meteorology of Severe Storms	
EAS 5340	Cloud Physics	
EAS 5380	Statistical Methods in Meteorology	
EAS 5360	Principles of Radiative Transference	
EAS 5600	Atmospheric Chemistry	
EAS 5630	Principles of Dynamic Meteorology I	
EAS 5640	Principles of Dynamic Meteorology II	
EAS 5650	Radar Meteorology	
EAS 5700	Convection in the Atmosphere	
EAS 5980	Graduate Independent Study in Earth & Atmospheric Sciences	
EAS 6480	Gen Circulation of Atmosphere	
EAS 6930	Special Topics	
EAS 6980	Graduate Independent Study in Earth & Atmospheric Sciences	
GIS 5010	Introduction to Geographic Information Systems	
Dissertation Research		12
EAS 6990	Dissertation Research (taken over multiple semesters)	
Total Credits		30-60

¹ The doctorate may be pursued directly from the baccalaureate with the permission of the program director.

Non-Course Requirements

Written and oral preliminary exam.

Continuation Standards

Students must maintain a cumulative grade point average (GPA) of 3.00 in all graduate/professional courses.

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		
Three graduate courses		9
EAS 5300	Seminar in Atmospheric Science (when offered)	0
Credits		9
Spring		
Two graduate courses		6
EAS 6980	Graduate Independent Study in Earth & Atmospheric Sciences	3
Credits		9
Summer		
EAS 6990	Dissertation Research	3
Credits		3
Year Two		
Fall		
EAS 6990	Dissertation Research	3
Credits		3
Spring		
Preliminary exam (Early semester)		
EAS 6990	Dissertation Research	3
Credits		3
Summer		
EAS 6990	Dissertation Research	3
Credits		3
Year Three		
Fall		
EAS 6990	Dissertation Research	0
Credits		0

Spring

EAS 6990	Dissertation Research	0
Credits		0
Total Credits		30

Program Notes

Requirements for the Ph.D. include 18 credits of coursework, 12 credits of dissertation and a preliminary exam. The EAS 5300 Seminar in Atmospheric Science (0-1 cr)/EAS 5330 Communicating in Research (2 cr) combination is required for those who are admitted to the Ph.D. program with an M.S. degree.

Contact Us

For more information about our program, please contact eegsgrad@slu.edu.