

# METEOROLOGY, PH.D.

Students who graduate from Saint Louis University's meteorology programs are trained to be meteorologists. They study the dynamics of air motion, physical processes such as transfer of radiation, and convection resulting in severe storms, flash floods and hurricanes. Research is underway at SLU on heavy precipitation, regional climate and air quality using numerical weather prediction models. Faculty members collaborate with research meteorologists at national centers, as well as operational meteorologists at the St. Louis National Weather Service forecast offices.

SLU is a founding member of the University Corporation for Atmospheric Research, which manages the National Center for Atmospheric Research (NCAR), in Boulder, Colorado, under the sponsorship of the National Science Foundation and NASA's DEVELOP program.

## Curriculum Overview

SLU's Doctor of Philosophy in meteorology requires a total of 30 credits beyond the master's degree (30 credits), including 12 credits of dissertation research, are required to complete the Ph.D. program in meteorology.

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

## Fieldwork and Research Opportunities

SLU's Department of Earth and Atmospheric Sciences is a charter member of the University Corporation for Atmospheric Research (UCAR) which manages the National Center for Atmospheric Research, Boulder, Colorado, under the sponsorship of the National Science Foundation. External funding for research comes from the National Oceanic and Atmospheric Administration (NOAA), the National Weather Service, and the National Aeronautics and Space Administration (NASA). The department has a dedicated synoptic computer lab and receives real-time data from both satellite downlink and the Internet.

Software for displaying and analyzing weather data comes from 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 are employed in the private sector, conducting atmospheric and agricultural research, weather forecasting and air quality assessments.

## Admission Requirements

Successful applicants possess sufficient test scores, a sufficient GPA and sufficient TOEFL scores (for international students).

An undergraduate degree in meteorology or a related field.

### Application Requirements

- Application form and fee
- Three letters of recommendation
- Transcript(s)
- Professional goal statement

- GRE scores
- Résumé

## Requirements for International Students

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

- Demonstrate English Language Proficiency (<http://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.

## Application and Assistantship Application Deadlines

Students who want to be considered for an assistantship must submit their applications by Feb. 1.

U.S. students should apply for the fall semester by July 1 and for the spring semester by Nov. 1. International students should apply for the fall semester by May 1 and for the spring semester by Oct. 1.

## Review Process

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

## Scholarships, Assistantships and Financial Aid

For priority consideration for graduate assistantship, applicants should complete their applications 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.

For more information, visit the student financial services office online at <http://www.slu.edu/financial-aid>.

## Learning Outcomes

1. Graduates will be able to assess relevant literature or scholarly contributions in the Earth & Atmospheric Sciences.
2. Graduates will be able to apply the major practices, theories, or research methodologies in the Earth & Atmospheric Sciences.
3. Graduates will be able to apply knowledge from the Earth & 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 & Atmospheric Sciences.

## Requirements

Code	Title	Credits
<b>Required Courses</b>		
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
<b>Elective Courses</b>		
Select 9-39 credits of the following: <sup>1</sup>		9-39
EAS 5110	Computing in Atmospheric Science	
EAS 5200	Numerical Method of Prediction	
EAS 5230	Boundary Layer Meteorology	
EAS 5240	Tropical Meteorology	
EAS 5270	Meteorology of Severe Storms	
EAS 5290	Mesometeorology	
EAS 5340	Cloud Physics	
EAS 5380	Stat Methods in Meteorology	
EAS 5360	Principles of Radiative Transference	
EAS 5470	Turbulence	
EAS 5600	Atmospheric Chemistry	
EAS 5610	Satellite Meteorology	
EAS 5650	Radar Meteorology	
EAS 5700	Convection in the Atmosphere	
EAS 5981	Independent Study	
EAS 5890	Research Seminar	
EAS 5930	Special Topics	
EAS 5970	Research Topics	
EAS 5980	Graduate Reading Course	
EAS 6480	Gen Circulation of Atmosphere	
EAS 6930	Special Topics	
EAS 6980	Graduate Reading Course	
GIS 5010	Introduction to Geographic Information Systems	
<b>Dissertation Research</b>		
EAS 6990	Dissertation Research (taken over multiple semesters)	12
Total Credits		30-60

<sup>1</sup> 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
<b>Year One</b>		
<b>Fall</b>		
Three graduate courses		9
EAS 5300	Seminar in Atmospheric Science (when offered)	0
Credits		9
<b>Spring</b>		
Two graduate courses		6
EAS 6980	Graduate Reading Course	3
Credits		9
<b>Summer</b>		
EAS 6990	Dissertation Research	3
Credits		3
<b>Year Two</b>		
<b>Fall</b>		
EAS 6990	Dissertation Research	6
Credits		6
<b>Spring</b>		
Preliminary exam (Early semester)		
EAS 6990	Dissertation Research	3
Credits		3
<b>Summer</b>		
EAS 5990	Thesis Research	0
Credits		0
<b>Year Three</b>		
<b>Fall</b>		
EAS 6990	Dissertation Research	0
Credits		0
<b>Spring</b>		
EAS 6990	Dissertation Research	0
Credits		0
Total Credits		30

### Program Notes

Requirements for Ph.D. include: 18 credits of course work, 12 credits of dissertation, and 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 MS degree already.