

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, Atmospheric, and Geospatial Science 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). 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 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 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/>)
- Financial documents are required to complete an application for admission and be reviewed for admission and merit scholarships.
- 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
- 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.

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 | \$1,370 |

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/>)

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 | Stat 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 Reading Course | |
| EAS 6480 | Gen Circulation of Atmosphere | |
| EAS 6930 | Special Topics | |
| EAS 6980 | Graduate Reading Course | |
| 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:

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