The Department of Atmospheric Sciences offers graduate programs leading to the degrees of Master of Science and Doctor of Philosophy. The Master of Science program is intended to serve those who are interested in continuing studies at the doctoral level as well as those seeking advanced knowledge for professional work in the atmospheric sciences in general. The Doctor of Philosophy program is intended to prepare students for leadership roles in academia, government, and private industry in the field of atmospheric science by enabling graduates to fill critical roles in leading research efforts, guiding science policy, educating future scientists, and creating opportunities in private industry.

Our vision is to offer premier atmospheric sciences graduate programs serving our students and the broader scientific community. In striving to achieve this distinction, the Department of Atmospheric Sciences maintains graduate programs that are socially relevant, serve as an advocate for graduate education campus-wide, provide resources that support graduate student research, and foster interdisciplinary programs. Within the context of the broader university community, the Department of Atmospheric Sciences serves to create an academic and intellectual climate that appreciates and respects diversity, values creativity, and supports the academic potential of each graduate student.

Mission Statement and Program Goals
The mission of the Department of Atmospheric Sciences master's program is to provide quality educational experiences to students to promote critical thinking and foster an intellectual environment conducive to exemplary research, scholarship, and creativity among graduate students and faculty.

Goal 1: Students will develop a comprehensive understanding of atmospheric sciences in a changing world.
Goal 2: Students will develop critical thinking skills through research activities or focused project activities.
Goal 3: Students will develop skills to analyze, interpret, and synthesize scientific data and communicate the results in an effective and professional manner.

Admission Requirements
1. A four-year bachelor's degree from a recognized college or university. For U.S. degrees, accreditation must be by one of the six regional accrediting associations.
2. Completion of a minimum of 20 semester credits of appropriate undergraduate work, e.g., physics, mathematics, chemistry, engineering, and/or atmospheric science.
3. A cumulative GPA of at least 2.75 for all undergraduate work or a GPA of at least 3.00 for the last two years.
4. Scores on the general portion of the Graduate Record Examination (GRE).
5. Satisfy the School of Graduate Studies' English Language Proficiency requirements as listed in the graduate catalog.

Applicants will be evaluated on an individual basis and those with limited backgrounds in the aforementioned areas (physics, mathematics, chemistry, and atmospheric science) but with a distinguished record in other disciplines may be accepted on a qualified basis with the understanding that deficiencies would be remedied early in the program.

Degree Requirements
Students seeking the Master of Science degree through the Department of Atmospheric Sciences at the University of North Dakota must satisfy all general degree requirements set forth by the School of Graduate Studies as well as particular requirements set forth by the Department of Atmospheric Sciences.

The Master of Science program requires that students complete a minimum of 30 credit hours for the thesis option or a minimum of 32 credit hours for the non-thesis option. Approval of the thesis option will be granted based upon alignment of research interests with departmental faculty’s research interests and faculty availability. The non-thesis option requires the student to independently investigate a topic related to the major field and successfully complete a written comprehensive examination. This study need not be an original contribution to knowledge, but may be a presentation, analysis, and discussion of ideas already in the literature of the field. This non-thesis requirement ensures that students can investigate a topic and organize a scholarly report.

Apply online: http://graduateschool.und.edu
Deadlines apply. See our website for more details.
Required Courses: All students are required to complete at least one course from each of the core areas listed below in addition to completing ATSC 500 Introduction to Atmospheric Research. Non-thesis option students must also complete two credits of ATSC 997 Independent Study Report (Non-Thesis Option), and thesis option students must also complete 4-9 credits of ATSC 998 Thesis.

Faculty and Areas of Expertise

- **Mark A. Askelson, Ph.D.**, Use of unmanned aircraft systems in meteorological applications, radar meteorology, surface transportation weather, mesoscale weather prediction, model initialization, objective analysis, storm dynamics, cloud modeling, and cloud physics.
- **David J. Delene, Ph.D.**, Atmospheric aerosols, cloud physics, weather modification, satellite remote sensing of aerosols and clouds, air pollution, climate change.
- **Xiquan Dong, Ph.D.**, Evaluating GCM simulated cloud and radiation budgets, investigating climate/weather extremes, evaluating and improving satellite retrieved clouds and precipitation using surface observations, retrieving cloud microphysical properties, and studying Asian Dust and pollution.
- **Gretchen Mullendore, Ph. D.**, Numerical modeling, convective transport, mesoscale dynamics, tropospheric-stratospheric exchange, cloud modeling, convection initiation.
- **Leon F. Osborne, Jr., M.S.**, Numerical weather prediction, atmospheric data assimilation, surface transportation meteorology, adaptation of advanced spatial technologies for improved decision-making applications.
- **Michael R. Poellot**, Cloud physics, aviation meteorology, weather modification, and atmospheric radiation.
- **Baike Xi, Ph.D.**, Cloud microphysics retrieval from ground base measurements, atmospheric radiative transfer, cloud and radiation parameterizations in climate model, ground and satellite remote sensing of clouds and radiation, heterogeneous reaction in clouds, Asian dust/pollution transport.
- **Jianglong Zhang, Ph.D.**, Satellite remote sensing, data assimilation and aerosol prediction, atmospheric radiation, climate change, aerosol and cloud physics.

Contact Information

Leon F. Osborne, Jr., Graduate Program Director
Department of Atmospheric Sciences
Clifford Hall Room 400 University of North Dakota
4149 University Avenue Stop 9006
Grand Forks, ND 58202-9006
Phone: 701-777-3181
Fax: 701-777-5032
Email: osborne@aero.und.edu
Web: http://www.atmos.und.edu

Apply online: http://graduateschool.und.edu
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Email: questions@gradschool.und.edu

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