Master of Science in Atmospheric Sciences

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. For international applicants only: 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. All thesis and non-thesis students are required to take ATSC 500 Introduction to Atmospheric Research and ATSC 505 Advanced Atmospheric Dynamics.

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. To maintain status within the thesis program, a topic proposal must be submitted by conclusion of the third academic semester. Students that do not meet this requirement will be placed into the non-thesis track.

Thesis students are required to complete at least one course from each of the core areas. A minimum of 21 credits must be from classroom courses (ATSC 575 or lower). With Graduate Program Committee (GPC) approval, students may take up to 3 credits of ATSC 594 Independent Studies in lieu of a classroom course. Students must also complete 4-9 credits of ATSC 998 Thesis.

Non-Thesis Option

The non-thesis option requires the student to independently investigate a topic related to the major field and successfully complete an oral comprehensive examination consisting of a public seminar and closed door meeting with the student's advisor and the GPC. A written summary of the project must be submitted to the Department of Atmospheric Sciences. Non-thesis investigations may be an original contribution to knowledge, computing project, or discussion of ideas already in the literature. These requirements ensure that students can investigate and communicate a scholarly project.

Non-thesis option students are required to complete at least one course from three of the four core areas. They must also complete two credits of ATSC 997 Independent Study Report. A minimum of 24 credits must be from classroom courses (ATSC 575 or lower). With Graduate GPC approval, students may take up to 3 credits of ATSC 594 Independent Studies in lieu of a classroom course.

Code	Title	Credits
ATSC 500	Introduction to Atmospheric Research	
ATSC 594	Independent Studies	
Select one of the following (Dynamics):		
ATSC 505	Advanced Atmospheric Dynamics	
ATSC 518	Advanced Synoptic Meteorology	
ATSC 548	Advanced Mesoscale Dynamics	
Select one of the following (Physical):		
ATSC 450	Introduction to Cloud Physics Meteorology **	
ATSC 520	Atmospheric Chemistry	
ATSC 525	Atmospheric Radiation	
ATSC 532	Cloud Microphysics Parameterization Simulation	
ATSC 560	Boundary Layer Meteorology	
ATSC 565	Air Quality	
Select one of the following (Climate Systems):		
ATSC 510	General Circulation	
ATSC 515	Advanced Climatology	
ATSC 545	Hydrometeorology	
ATSC 550	Tropical Meteorology	
ESSP 507	Earth Systems Processes and Vulnerability Analysis	
Select one of the following (Tools):		
ATSC 420	Advanced Weather Forecasting **	
ATSC 441	Radar Meteorology **	
ATSC 456	Introduction to Professional Meteorology **	
ATSC 528	Atmospheric Data Analysis	
ATSC 530	Numerical Weather Prediction	
ATSC 535	Measurement Systems	
ATSC 540	Statistical Methods in Atmospheric Science	
ATSC 552	Satellite Meteorology	
ATSC 553	Advanced Satellite Meteorology	
Select one of the following (Thesis or Independent Study):		
ATSC 997	Independent Study Report (Non-Thesis Option)	
ATSC 998	Thesis	

** Courses taken at the undergraduate level cannot be repeated for graduate credit.

Combined Degree Program B.S./M.S. in Atmospheric Sciences

The Atmospheric Sciences program offers a combined B.S./M.S. in Atmospheric Sciences program. The intent of the combined program is to allow qualified students to complete the requirements for both degrees in one year beyond that required to receive the Baccalaureate degree. Students may be accepted into this program upon completion of 90 credits toward the Bachelor's degree and must apply prior to their fourth year of academic work. All requirements for both degrees must be met, and up to eight credits of prior-approved coursework may be double-counted toward each of the two degrees. Double-counted credits may not include required courses for the B.S. degree, but may include appropriate elective coursework. Combined degree students are placed within the non-thesis track of the MS degree.

Admission Requirements

Admission requirements for the M.S. in Atmospheric Sciences, with the following additional criteria:

1. 3.0 GPA overall.

2. Completion of 90 credit hours prior to year four, including a course in dynamic meteorology.

Degree Requirements

Degree requirements for the M.S. in Atmospheric Sciences, with the following additional criteria:

1. Up to 8 credits of graduate-level coursework can be double counted for the B.S. and M.S. degrees. These credits can only be taken after admission to the graduate program.

2. The B.S. and M.S. degrees will be awarded sequentially upon completion of the degree requirements.