

# APPLIED METEOROLOGY (MS)

## Exploration and Discovery

The Master of Science in Applied Meteorology program is housed in the Judd Gregg Meteorology Institute in the Boyd Science Center. The degree is designed to meet regional and national needs for professional meteorologists, who increasingly require more than baccalaureate-level education and qualifications. The program offers students the latest knowledge and research skills in many core areas of operational meteorology needed to provide modern weather support to a wide variety of customers. It focuses on such areas as advanced weather analysis and forecasting; air quality; aviation meteorology; hydrology; mesonet/road weather meteorology; radar/satellite meteorology; computer-based programming, and other meteorological applications.

## Program Highlights

- The only MS in meteorology program in New Hampshire and one of only a handful in the northeastern United States
- Outstanding technology and facilities
- Dedicated faculty who work closely with students
- Active collaborations with several agencies including NOAA, NASA, NWS, MWO, Scripps, NHDOT, and UCAR/NCAR
- Limited assistantships with tuition waivers available
- Flexibility in course selection to tailor the program to individual student's needs
- It is possible for some students to complete the program in approximately 18 months
- Office space for graduate students
- Cost-efficient program

## Admission Requirements

Plymouth considers applications on a rolling admissions basis that allows students to apply at any time of the year. The program is based on full fall, spring, and summer terms. However, it is generally recommended that students start the program during the fall term. Applicants planning to begin studies during the fall term should submit completed admissions applications by January 31 for priority consideration for the limited enrollment slots and available assistantships. Prospective students will automatically be considered for assistantships during the admission process. The most highly qualified admitted students may be offered assistantships, tuition waivers, or both based on available resources on any given year. Students not initially receiving assistantships or tuition waivers may later be considered eligible based on academic performance. Applicants wanting to start in the spring term should apply by August 31 for limited enrollment slots, but should be advised that assistantship support may not be available.

An official score report from the Graduate Record Examination for the quantitative, verbal, and analytical writing components is optional. Applicants with degrees in subjects other than meteorology or atmospheric science should apply for the Extended Concentration. All interested candidates are welcome to contact the program coordinator for an in-person or phone conversation before submitting their application.

## GPA Requirements

Graduate students in the program must maintain a GPA of 3.0 or higher in the program to maintain satisfactory progress. Only one passing course

grade of less than B- will be allowed to count toward the 30-credit degree. Students enrolled in the program who fall below a 3.0 GPA will have one semester to restore it to the satisfactory level. If a student does not achieve this level after one semester, the student will be barred from future coursework and pursuit of the MS degree and lose assistantship support (if applicable). Students who fail more than one graduate course will also not be allowed to continue in the program.

## Degree Requirements

### Curriculum and Degree Requirements

The MS Applied Meteorology program has two concentrations. The Standard concentration requires students to complete 30 credits and is intended for students that have already completed an undergraduate degree in meteorology or atmospheric science. The Extended concentration requires students to complete 45 credits and is intended for students that do not have an undergraduate degree in meteorology or atmospheric science. Each concentration has a research requirement. Students will choose to complete either a thesis or non-thesis research project to satisfy this research requirement. However, not all students may be able to select the thesis research project since the number of thesis students that can be supported is limited by faculty availability. Students desiring to pursue the thesis option will need to consult with their advisor and other meteorology faculty to identify a faculty mentor.

Course	Title	Credits
Required Core Courses		
MT 5200	Transportation Meteorology	3
MT 5330	Satellite Meteorology	3
MT 5340	Radar Meteorology	3
MT 5600	Computer Applications in Meteorology	3
or MT 5650	Research Methods in Meteorology	
MT 5000	Meteorology Seminar <sup>1</sup>	1
Concentration		10-28
Standard Concentration (10-13 credits)		
Extended Concentration (25-28 credits)		
Research Requirement		6-3
Complete 6 credits of Thesis Research or 3 credits of Independent Study/Research		
MT 5800	Thesis Research	
or MT 5910	Independent Study/Research	
Total Credits		30-44

### Standard Concentration

Course	Title	Credits
Elective courses		
Complete 10-13 credits from courses in the following list		
MT 5150		
MT 5400	Numerical Weather Prediction	
MT 5420	Tropical Weather and Climate	
MT 5430	Climate Change	
MT 5460	Climate Dynamics	
MT 5560	Topics in Meteorology	
MT 5600	Computer Applications in Meteorology	
or MT 5650	Research Methods in Meteorology	

MT 5000	Meteorology Seminar <sup>1</sup>	
MT 5710	Internship <sup>3</sup>	
MT 5910	Independent Study/Research <sup>3</sup>	
ESP 5215		
ESP 5225		
ESP 5230		
ESP 5320	Watershed Hydrology	
ESP 5440		
<b>Total Credits</b>		<b>10-13</b>

**Extended Concentration**

Course	Title	Credits
MT 5280	Synoptic Meteorology	3
MT 5310	Dynamic Meteorology I	3
MT 5320	Dynamic Meteorology II	3
MT 5410	Atmospheric Physics	3
MT 5560	Topics in Meteorology <sup>2</sup>	3
<b>Elective Courses</b>		<b>10-13</b>
Complete 10-13 credits from courses in the following list		
MT 5150		
MT 5400	Numerical Weather Prediction	
MT 5420	Tropical Weather and Climate	
MT 5430	Climate Change	
MT 5460	Climate Dynamics	
MT 5480	Mesoscale Meteorology	
MT 5000	Meteorology Seminar	
MT 5710	Internship	
ESP 5215		
ESP 5225		
ESP 5230		
ESP 5320	Watershed Hydrology	
ESP 5440		
<b>Total Credits</b>		<b>25-28</b>

<sup>1</sup> Students must enroll in at least two semesters of MT 5000 Meteorology Seminar (1 cr each semester). Students may enroll in additional semesters of the course as an elective.

<sup>2</sup> A course in Atmospheric Thermodynamics

<sup>3</sup> These courses are variable credit and are repeatable. For each course, only up to 4 credits may count as an elective toward the 30 credit degree requirement

## Co-listed Courses

Some upper-division undergraduate courses are co-listed as graduate courses. Graduate students enrolled in these courses will be expected to complete additional coursework, such as papers and projects, to earn graduate credit in these courses. The co-listed courses are as follows:

### Co-listed Meteorology Courses

Course	Title	Credits
		1
MT 5000/4000	Meteorology Seminar	1
MT 5150/4150		3
MT 5280/4280	Synoptic Meteorology	3

MT 5310/4310	Dynamic Meteorology I	3
MT 5320/4320	Dynamic Meteorology II	3
MT 5400/4400	Numerical Weather Prediction	3
MT 5410/4410	Atmospheric Physics	3
MT 5420/4420	Tropical Weather and Climate	3
MT 5430/4440	Climate Change	3
MT 5460/4460	Climate Dynamics	3
MT 5480/4480	Mesoscale Meteorology	3
MT 5560/4560	Topics in Meteorology	1-3

## Learning Outcomes

- Effective communications both orally and in writing.
- One or more research tools used in atmospheric science, such as data analysis, visualization software, and/or computer programming.
- Successful completion of a guided research project with appropriate supervision.
- Practical applications through internships/course work/research projects

## Career Pathways

A meteorology degree from Plymouth State prepares students for a wide variety of career options in each profession. Plymouth State University focuses on several concentrations within the program:

Meteorology touches upon virtually all aspects of human activity. Consequently, a variety of career opportunities are available for graduates. Graduates can also enter the Ph.D program. Meteorologists are employed in all the economic sectors—private, government and military.

For more information, visit Career Services in the Global Education Office.

### Sample Job Titles:

- Air Quality Engineer
- College Professor
- Environmental Consultant
- Flight Director
- Forensic Meteorologist
- Instrumentation Specialist
- Meteorologist
- Physicist
- Risk Manager
- Technical Writer
- Broadcast Meteorologist

See the U.S. Department of Labor Outlook for a complete list.

### Useful Skills for Jobs in the Atmospheric Science Fields:

- Ability to analyze cause and effects
- Proficiency in analytical reasoning
- Strong mathematical background
- Ability to organize and memorize detailed information
- Strong organization skills