

ATMOSPHERIC AND OCEANIC SCIENCES: PROFESSIONAL PROGRAM, MS

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (<http://guide.wisc.edu/graduate/#policiesandrequirements>), in addition to the program requirements listed below.

NAMED OPTION REQUIREMENTS MODE OF INSTRUCTION

Face to Face	Evening/ Weekend	Online	Hybrid	Accelerated
Yes	No	Yes	No	Yes

Mode of Instruction Definitions

Accelerated: Accelerated programs are offered at a fast pace that condenses the time to completion. Students typically take enough credits aimed at completing the program in a year or two.

Evening/Weekend: Courses meet on the UW–Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.

Face-to-Face: Courses typically meet during weekdays on the UW–Madison Campus.

Hybrid: These programs combine face-to-face and online learning formats. Contact the program for more specific information.

Online: These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

CURRICULAR REQUIREMENTS

Requirement Detail

Minimum Credit Requirement

Minimum Credit Requirement

Minimum Graduate Coursework Requirement

15 credits must be graduate-level coursework. Refer to the Graduate School: Minimum Graduate Coursework (50%) Requirement policy: <https://policy.wisc.edu/library/UW-1244> (<https://policy.wisc.edu/library/UW-1244/>).

Overall Graduate GPA Requirement

3.00 GPA required. Refer to the Graduate School: Grade Point Average (GPA) Requirement policy: <https://policy.wisc.edu/library/UW-1203> (<https://policy.wisc.edu/library/UW-1203/>).

Other Grade Requirements

Students must earn a C or above in all coursework.

Students may not have any more than two incompletes on their record at any one time.

Assessments and Examinations

None.

Language Requirements

No language requirements.

REQUIRED COURSES

Code	Title	Credits
Fundamentals of ATM OCN		9-10

Students pick three of the following.

ATM OCN 610 Geophysical Fluid Dynamics I

ATM OCN 611 Geophysical Fluid Dynamics II

ATM OCN 630 Introduction to Atmospheric and Oceanic Physics

ATM OCN 640 Radiation in the Atmosphere and Ocean

ATM OCN 660 Introduction to Physical Oceanography

Technical Scientific Data Analysis, Measurements and/or Programming	5-6
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At least three credits must be in ATM OCN.

ATM OCN 404 Meteorological Measurements

ATM OCN 573 Computational Methods in Atmospheric and Oceanic Sciences

ATM OCN 575 Climatological Analysis

R M I 650 Sustainability, Environmental and Social Risk Management

R M I 700 Principles of Risk Management

Applied Aspects of ATM OCN	9
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Students must pick a specialty option and PICK AT LEAST TWO courses of those lists for the specialty based on availability and interest, and AT LEAST ONE course either from the same specialty or another specialty. At least 6 of these credits must be ATM OCN.

Climate

ATM OCN/
ENVIR ST/
GEOG 332 Global Warming: Science and Impacts

ATM OCN 425 Global Climate Processes

ATM OCN/
ENVIR ST 520 Bioclimatology

ATM OCN 522 Tropical Meteorology

ATM OCN 705 The Middle Atmosphere

ATM OCN 712 General Circulation of the Atmosphere

ATM OCN 760 Large-Scale Ocean-Atmosphere Coupling

Satellite Meteorology

ATM OCN 441	Radar and Satellite Meteorology
ATM OCN 637	Cloud Physics
ATM OCN/ ENVIR ST 745	Meteorological Satellite Applications
ENVIR ST/ CIV ENGR/ LAND ARC 556	Remote Sensing Digital Image Processing

Air Quality

ATM OCN/ ENVIR ST 355	Introduction to Air Quality
CIV ENGR/ G L E 511	Mixing and Transport in the Environment
ATM OCN/ ENVIR ST 535	Atmospheric Dispersion and Air Pollution
ATM OCN 638	Atmospheric Chemistry
ATM OCN/ CIV ENGR 701	The Chemistry of Air Pollution
ATM OCN 773	Boundary Layer Meteorology
ENVIR ST/ POP HLTH 502	Air Pollution and Human Health

Forecasting and Modeling

ATM OCN 610	Geophysical Fluid Dynamics I ¹
ATM OCN 751	The Frontal Cyclone
ATM OCN 753	Mesoscale Meteorology
ATM OCN 801	Topics in Theoretical Meteorology

Professional Development 6

ATM OCN 810	Practical Training in Atmospheric and Oceanic Sciences I ²
ATM OCN 811	Practical Training in Atmospheric and Oceanic Sciences II ²
ATM OCN 999	Advanced Independent Study ³

Total Credits 30

¹ ATM OCN 610 Geophysical Fluid Dynamics I can count only if not used to count for fundamentals requirement.

² ATM OCN 810 Practical Training in Atmospheric and Oceanic Sciences I and ATM OCN 811 Practical Training in Atmospheric and Oceanic Sciences II require a supervised 20-30 hour/week internship during the summer after completion of other course requirements. This course is taken in conjunction with 1 credit of ATM OCN 999 Advanced Independent Study. Placement in internship is made during the spring semester with support from the program coordinator and academic advisor. See program policies for more details.

³ ATM OCN 999 Advanced Independent Study credit earned through 1-2 hours per week attendance and reporting on: weekly meeting with program advisor, participation in Graduate School professional development workshops, attendance at research seminars or lab meetings, participation at professional conferences, department presentation of CCM portfolio (summer). Write up on activities required each semester. ATM OCN 999 Advanced Independent Study is taken for one credit in each of fall, spring, and summer session. Summer session ATM OCN 999 Advanced Independent Study can be taken remotely if internship placement is off campus.

Internship Requirement

At the end of the spring semester, all students are expected to have secured a paid or unpaid internship with a minimum of 10 hours per week of expected work for a minimum of 8 weeks. The internship, occurring in conjunction with online classes ATM OCN 810, ATM OCN 811, and ATM OCN 999, can include placement in a private company, public sector agency or lab, university setting, on or off campus, based on student interest, availability, and advisor approval. It is the responsibility of both the student and the program coordinator to assist in this match. In case the student is unable to secure an internship or seeks a more entrepreneurial approach, the student can propose an alternate in lieu of internship. The alternative must still meet minimum hour and length requirements, but may include independent business start-up planning, direct consulting with faculty, or other creative approaches. The alternative must have a direct mentor or supervisor identified and requires approval of the program director.

Other Policy

Students in this program may not take courses outside the prescribed curriculum without faculty advisor and program director approval. Students in this program cannot enroll concurrently in other undergraduate or graduate degree programs.