Program Change Request

New Program Proposal

Date Submitted: 08/21/19 12:04 pm

Viewing: Professional Program

Parent Plan: MAI Atmospheric & Oceanic Sci/M

Last edit: 08/21/19 12:21 pm

Changes proposed by: emklein

Name of the school or college academic planner who you consulted with on this proposal.

<table>
<thead>
<tr>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elaine M Klein - L&amp;S</td>
</tr>
</tbody>
</table>

Proposal/Abstract/Summary:
The 30-credit hybrid non-pooled tuition accelerated (12-month, part-time enrollment possible) named option professional master's focused on atmospheric science from the University of Wisconsin – Madison provides training for meteorology professionals supporting weather and climate needs of diverse industries. The program focuses on advanced training in fundamental atmospheric sciences in addition to skills development in forecasting, modeling, data analysis, scientific communication, and evaluation of research specific to our discipline. Target students leave with a M.S. degree equipped for positions in weather and climate forecasting, risk analyses, technical data analysis, and scientific communication.

Basic Information

Type of Program: Named Option
Parent Program: MAI Atmospheric & Oceanic Sci/M
Parent Audience: Graduate or professional
Parent Home: ATM OCN S
Department:
School/College: College of Letters and Science

The program will be governed by the home department/academic unit as specified. Will an additional coordinating or oversight committee be established for the program?

No

Parent is in the Graduate School:

Yes

SIS Code:

SIS Description:

Transcript Title: Professional Program
Named Options: Sub Plan 1047: No Title Round
Sub Plan 1052: No Title Round

Does the parent program offer this as an additional major as well?

No

Roles by Responsibility: List one person for each role in the drop down list. Use the green + to create additional boxes.

9/5/2019

https://next-guide.wisc.edu/courseleaf/approve/?role=GRAD SCH Dept. Approver
List the departments that have a vested interest in this proposal.

<table>
<thead>
<tr>
<th>Departments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Studies (ENVI ST &amp; L&amp;S)</td>
</tr>
<tr>
<td>Civil and Environmental Engr (CIV ENG)</td>
</tr>
<tr>
<td>Risk and Insurance (ACT SCI RM)</td>
</tr>
</tbody>
</table>

Are all program reviews in the home academic unit up to date?: Yes
Are all assessment plans in the home academic unit up to date?: Yes
Are all assessment reports in the home academic unit up to date?: Yes
Mode of Delivery: Face-to-face (majority face-to-face courses)
Will this program be part of a consortial or collaborative arrangement with another college or university?: No
Will instruction take place at a location geographically separate from UW-Madison?: No
Parent has outside accreditation?: No
Graduates of parent program seek licensure or certification after graduation?: No
First term of student enrollment: Fall 2019 (1232)
When will the application for the first term of enrollment open?: Fall 2019 (1202)
Which terms will you allow new students to enroll? What are the application deadlines for each term selected?

<table>
<thead>
<tr>
<th>Start Term</th>
<th>Application Deadline MM/DD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>01/15</td>
</tr>
</tbody>
</table>

Year of three year check-in to GSCC (6 years after first student enrollment): 2024

Year of first program review (5 years after first student enrollment): 2026

If this proposal is approved, describe the implementation plan and timeline.

February 2019: Course proposals entered and approved by department
March 2019: Complete program proposal, send forward
Following approval of program, the following steps will be pursued (roughly estimated to span Summer 2019 and early Fall 2019):
Convene implementation meeting to ensure all parties involved in implementation steps are aware of responsibilities and timeline.
Pending approval of program and funds, hire academic staff program coordinator
Develop recruitment materials, engage alumni board
(Note: Prof Desai has a Fall 2019 Prof Dev teaching release to work on Prof Master’s program)
Set up admissions website material
Line up internship partners, train new staff
Visit peer programs to study best practices (Desai)
Prepare material for Certified Consulting Meteorologist exam (Desai)
Advertise program at American Meteorological Society
Attend Certified Consulting Meteorologist exam
Review applications, admit first class (~10 students)
Set up Fall 2020 timetable
Develop materials for orientation
Verify internship partners, test technology for ACS 810/811
Rationale and Justifications

How does the named option relate to the major and to other named options in the major, if relevant?

With approval of this program, and the proposed "Research" named option, the MS in AOS will have two distinct programs:

A MS "Research Option" named option, which is a traditional 2-year in-person thesis based program. Students in this program are admitted based on research interest, and focus on conducting atmospheric science research with an advisor. The core focus on training for research careers and entry into the Ph.D. program. Required courses are focused on theory and training as a scholar.

MS "Professional Program" named option (this proposal), which is a hybrid (majority face-to-face) 1-year program where students will focus on practical training on skills needed to succeed in meteorological consulting, risk management, and operational forecasting. This program is geared to students who are not focused on careers in science research or entering a Ph.D. program. While many courses are similar to those taken for the "Research" option, the requirements of courses in programming, data analysis, professional development, and practical summer internship replace the thesis and direct mentoring by a research advisor. These students will be well trained for the AMS Certified Consulting Meteorologist exam.

Why is the program being proposed? What is its purpose?

The professional program concept was developed over the 2016-2018 period by the AOS Professional Master's ad hoc committee, and unanimously approved by the AOS faculty executive committee in December 2018. The goal of the program is to address 1) needs of undergraduate majors who have expressed interest in a 5th yr master's degree (including a successful trial test with 2-3 students), 2) at least 2 students a year who enroll in our MS thesis program who have found the research based thesis to be not suited to their interests (and therefore failing to complete) but who would have succeeded here, 3) significant applicant pool to our MS program (dozen +) who cannot be supported by thesis program (lack of RA/TA/Advisor) and therefore do not enroll, but who would be willing to enroll in this program, 4) market analysis and alumni interviews demonstrating growing demand by employers for M.S. trained weather professionals (and lower demand for solely B.S. trained), demand by students for this degree option, and relatively limited competition right now in this arena. Finally, we believe the developing such a program would benefit the department as a whole by providing more resources to offer courses specific to atmospheric science data analysis, forecasting, and programming that may also support other campus departments, our Ph.D./M.S. thesis students, and faculty teaching interests.

Do current students need or want the program? Provide evidence.

Our undergraduate advisor has been getting regular visits by our majors and intended majors expressing interest in this program and eagerness to enroll. Informal surveys of our majors suggested that a good fraction of our graduating seniors would consider enrolling in this program instead of seeking MS degrees elsewhere. We have also witnessed several of enrollments to our M.S. thesis research program each year who are primarily interested in professional development in the MS and struggle to complete the thesis. Finally, we note that a large fraction of our thesis students are terminal MS students who get good jobs after graduation. This program would better meet needs of those students and allow them to graduate sooner.

What is the market, workforce, etc. and industry need for this program? Provide evidence.

The Division of Continuing Studies conducted a market analysis, peer program analysis, and alumni interviews with our alumni board. All of these studies showed strong demand for the program, limited competition in the region or in our riches, and enthusiasm by alumni in industry for the program, for hosting interns, and for addressing the needs of our field. The American Meteorological Society has recently revised its recommended program standards to address a rapidly changing workforce, and our program directly addresses the needs outlined in those reports, too. The market analysis showed a larger number of positions seeking skilled atmospheric scientists. The alumni board noted that a professional MS from UW would be viewed strongly in that market. Most of our existing BS students have noted that an MS is the new entry ticket to many positions in our field in forecasting, consulting, operations. In particular, skills like technical writing, programming for data analysis, forecast modeling, working with diverse teams, and advanced understanding of societal issues of climate/weather are key factors for their hiring.

What gap in the program area is it intended to fill?

Our current MS Program is thesis based, thus requiring a research advisor, a thesis topic, and preferably assistantship support. For students primarily interested in careers in atmospheric science forecasting, modeling, communications, or consulting, this is not the best fit. As a result, often do no admit students whose primary interests is in these areas due lack of advisor/research topic. If we do admit them, then we struggle to find assistantship support for them, since we are a RA/TA funded program. We have 80-100 applicants a year to the PhD and MS program combined, and at least 10 or more of these already would be direct fits into a professional MS program based on the graduate chair's 9 years experience of running admissions. A program that is internship based instead of thesis driven, 1 year, with courses in programming and skills development, but still includes our rigorous core program and maintains high admissions and academic standards, will allow us to serve a pool of students who can grow the program, contribute broadly in careers in our field, and help maintain our reputation as a top graduate program.
Faculty and Staff Resources

List the core program faculty and staff with title and departmental affiliation(s) who are primarily involved and will participate in the delivery and oversight.

<table>
<thead>
<tr>
<th>Name (Last, First)</th>
<th>Department</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desai, Ankur R</td>
<td>Atmospheric &amp; Oceanic Sciences (ATM OCN S)</td>
<td>Graduate program chair</td>
</tr>
<tr>
<td>Dahmen, Chelsea Marie</td>
<td>Atmospheric &amp; Oceanic Sciences (ATM OCN S)</td>
<td>Department administrator</td>
</tr>
<tr>
<td>Vancuyen, Dee D</td>
<td>Atmospheric &amp; Oceanic Sciences (ATM OCN S)</td>
<td>Student status coordinator</td>
</tr>
<tr>
<td>Tripoli, Gregory J</td>
<td>Atmospheric &amp; Oceanic Sciences (ATM OCN S)</td>
<td>Dept chair</td>
</tr>
<tr>
<td>Morgan, Michael Cottman</td>
<td>Atmospheric &amp; Oceanic Sciences (ATM OCN S)</td>
<td>Undergraduate program chair</td>
</tr>
<tr>
<td>Schuefner, Eric L</td>
<td>Atmospheric &amp; Oceanic Sciences (ATM OCN S)</td>
<td>Undergraduate advisor</td>
</tr>
<tr>
<td>Pokrandt, Peter J</td>
<td>Atmospheric &amp; Oceanic Sciences (ATM OCN S)</td>
<td>Department computing support</td>
</tr>
<tr>
<td>Foldy, Susan D</td>
<td>Atmospheric &amp; Oceanic Sciences (ATM OCN S)</td>
<td>Administrative Assistant</td>
</tr>
</tbody>
</table>

What resources are available to support faculty, staff, labs, equipment, etc.?  
The AOS building contains the AOS department, Nelson Institute Center for Climate Research, the Graduate School's Space Science and Engineering Center, and the NOAA Center for Integration of Meteorological Satellite Studies (CIMSS). All units work together to create a dynamic environment with access to computer labs for students, the highest performance single compute node on campus in BSEC, access to the largest number of academic staff PCs on campus in a single center, and numerous meeting rooms, classroom spaces. There are seminars 3-4 days a week among the departments and center. All units (AOS, CCR, BSEC, CIMSS) have support staff that help students, labs for specialized needs, and conduct joint events like the buildingwide poster session every Spring, named lecture series, or alumni meet-up days in the fall. Professional program students would be given keys to the building, access to the 14th floor computer lab, and shared meeting space in seminar rooms on 8th, 10th, 14th and 15th floors.

Program advisor(s) with title and departmental affiliation(s).

<table>
<thead>
<tr>
<th>Name (Last, First)</th>
<th>Department</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desai, Ankur R</td>
<td>Atmospheric &amp; Oceanic Sciences (ATM OCN S)</td>
<td>Professor</td>
</tr>
</tbody>
</table>

Describe how student services and advising will be supported.

The non-tuition tuition revenue will support a full-time academic advisor/coordinator for the program. A tenured faculty member will be appointed to serve as program director. The director and advisor will work jointly on recruiting, admission, orientation, and advising.

Students will have regularly (monthly) meetings with the advisor. The advisor will be a core instructor for the internship course sequence (810/811). We also expect shared services with existing AOS staff such as the graduate coordinator of the thesis programs, department administrator, university staff, department chair, and thesis graduate program chair, on issues like registration, timetable, human resources, visa/immigration, financial aid, mandatory trainings, travel reimbursement and purchasing, and academic misconduct.

As the program grows beyond 20 students, we will need to revisit the advising model, including options for peer mentoring, hiring of dedicated 131-supported faculty, and/or second coordinator position.

Internship placement will also require additional consideration as the program grows. Our current policy now reads: “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, 811, and 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 cases 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.”

Confirm that the program advisor(s) or coordinator(s) have been consulted and reviewed this proposal.

Resources, Budget, and Finance

Is this a revenue program? Yes

What is the tuition structure for this program?
Markers-based tuition - separate proposal to be submitted

Select a tuition increment: $1,000/credit

What is the rationale for selecting this tuition increment?
DCS conducted a market analysis for peer programs. The analysis showed that a flat tuition rate of $30,000 ($1,000/credit; 30 credits, with up to 7 transfer credits for UW-Madison graduates) would put us on the low end of the scale (mean $25,000 in-state, $50,000 out-of-state). However, the faculty feel strongly that the main goal of this program is to provide an affordable pathway for students in our field, that is commensurate with typical tuition levels at this university and what allows the program to at least break even with a smallish class and make some money to support growth and investment in supports. We feel this attractive and easy to remember price will drive admissions here and away from over-priced programs at lower quality institutions. While this may make our budget smaller, the faculty strongly opposed setting a high tuition given the crisis in student loan debt and average salaries in our field. We are willing to revisit this, but we are interested in improving our program and providing access to all students.

Upload the proposal for market based tuition:
PREZ - ADS
Competitive
Price.pdf
Market-BasedTuitionPolicy_CMS.docx
131 Program Model:
ADS professional
masters
CMS081559.xls

Provide a summary business plan.

The ADS MS Professional Program named option will have a tuition rate of $1000/credit. We project long-term (steady-state) enrollment of 40, ramping up over first few years, starting with 10, and revenue projections of $1.2 million dollars a year once those enrollment targets are met.

The costs for this program are primarily for 1) academic staff support of marketing, advising, and instruction, 2) teaching assistant support for instruction of the internship class, and 3) additional teaching or project assistant's support once the program grows to meet enrollment projections to support academic staff advising and marketing. The program is expected to be self-funding within the first two years. At least initially, the program will make use of existing courses, with faculty paid on fund 101 and teaching as part of their regular teaching loads. In return, the program will use future expected 131 surplus to hire additional faculty, staff, and/or TAs in support of traditional 101 students.

We have selected $1,000 per credit based on market analysis of peers and expected program costs and revenue. Our faculty voted to select a tuition increment on the more affordable side given competition in the market (see market based tuition policy form attachment and DCS competitive pricing attachment), providing value to Wisconsin residents and regional students, and a relative salary potential of graduates.

Chelsea Dahmen, Department Administrator, will manage funds and support budget planning and projections. We will monitor admission and retention, and align future projections of student enrollment based on those.

Provide an overview of plans for funding the program including but not limited to program administration, instructional/curricular delivery, technology needs and program assessment.

As detailed on the budget, the program is relatively low cost to implement, as most of the classes are existing, new classes (internship) will be supervised by the academic staff hired to advise and support the program, underutilized existing computing lab and seminar space will be used in the ADS building, and lab materials are limited.

The revenue supports hiring of an academic staff 100% FTE to support recruiting, admission, advising, internship placement, and instruction of the summer internship course. This staff will work closely with the faculty appointment program director, who will shape academic policy, strategic plans, program assessment, and student support.

We will also utilize 131 revenue to hire a summer 50% teaching assistant (TA) who will assist on the summer internship courses (810/811), managing the online videoconferences and individual meetings and act as a point of contact for internship leads. The internship course will be taught by the academic staff hire who will mentor this TA.

We will use investment in later years both to support our 101 program, including return of initial startup funds supported by 101 through funding of 101 staff positions, and our 131 program by hiring additional TAs to assist instructors in other undergraduate courses or practical skills classes open to both graduates and undergraduates. This additional support will allow faculty to more intensively teach the larger graduate core classes that will arise from courses used by both 131 and 101 students. We will also invest in a TA to help maintain student records, organize website and marketing material, and help attend national meetings to recruit.

Our existing department administrator, student status coordinator, administrative assistant, and classroom IT support staff will provide support to 131 students. Given that our thesis based programs (MS and PhD) are smaller than long term average, there is adequate support at the moment from these staff. As the program grows, we intend to re-invest tuition funds for hiring of new appointments in these areas.

Travel support is included so that students can present and attend the annual American Meteorological Society (AMS) meeting, which is where the Certified Consulting Meteorologist (CCM) exam is administered.

Tuition support for electives in other departments is budgeted at $600/student credit hour, per UAS policy for several programs. These are not required courses so we have used best judgement in number of credit hours likely to be applied to each based on equal apportion of students to each specialty or elective.

We provide up to 7 transfer credits for our own majors (UAS ADS), which we view as a tuition discount for...
those students, assuming 20% of students fall in this category.

What is the marketing plan?

We have a robust recruiting plan already for our thesis based programs. Our initial market will draw from similar locations. Jointly with our graduate student association (GSA), undergraduate advisor, and graduate chair, we have designed a number of materials (brochures, website, table materials, posters) that will be updated to highlight the new named option. Our primary venue for this is the annual American Meteorological Society meeting. We have also identified a few other meetings and major undergraduate meteorology program (Oklahoma University, Penn State, University of Washington) where we will invest additional resources in visits, mailing flyers, and direct outreach to program chairs at respective institutions.

Our alumni engagement board has been involved in planning for last year. They formed three years ago with an elected body of alumni who organize events. They have started an annual alumni day in fall semester. We will use that event to recruit internship partners and promote the program.

We believe these efforts will be sufficient to attract students to our nationally recognized department (top 15 in nation for atmospheric science). We have many students who apply to our thesis named option who are better fits for the professional option. We will provide better guidance on our website to help students properly select program. The admissions committee will review both programs simultaneously to improve coordination and transfer of admission material from one program to the other based on fit.

Our department is also committed to recruiting and retaining a diverse graduate student pool. Though the Geosciences at large are less diverse than other STEM fields, work done by the department, through its adapted diversity plan, has allowed it to identify several pathways to help diversify its applicant pool and student body. Over the past 8 years, the department has transitioned to a holistic admissions model (as detailed in admissions section below), which has increased diversity, primarily in gender, but also in underrepresented minorities, while maintaining strength in students and outcomes. We are one of the only atmospheric science programs in the country that may not have significantly increased diversity in graduate program. We have placed emphasis on recruiting diverse faculty based on research that diverse faculty recruit diverse students, by being one of the first STEM departments in UW to require a diversity statement of all faculty candidates. We have added diversity events into our seminar calendar, the graduate students have formed a diversity committee, and ask all faculty to attend one workshop a year in areas of inclusion or bias training. We receive annual support from the graduate school support competition, which requires us to collect data on student diversity and to support recruitment practices that enhance diversity. We award AOE fellowships nearly every year. This year we will start funding more faculty visits to minority-serving institutions with strong atmospheric science programs such as Howard University, University of Puerto Rico Mayaguez, and University of Arizona.

Does the program or change require substantial new resources other than those just described? Describe the needs. Confirm that the dean is committed to providing the resources. An academic staff member will be hired in anticipation of being fully supported on program-generated 131 funds. The L&S Associate Dean for Fiscal Initiatives is aware that the account will be in deficit in advance of future revenues.

Are new library resources needed to support this program?

No

Describe plans for funding students including but not limited to funding sources and how funding decisions are made.

Students will not be provided direct funding in this program and policy will prohibit them from getting assistantship (RA, TA, or PA) support that would waive tuition; this support is reserved for the research program. However, we are allowing up to 7 credit transfer for UW AOS graduates, which will provide a substantial discount for graduates of the UW-Madison BA/BS major in AOS.

If program projections are accurate, we will consider re-investing in scholarships for students that should be seen as a way to increase enrollment and support increased diversity of enrollees.

Curriculum and Requirements

Parent Plan Admissions/How To Get In
Requirements

Students apply to the MS in Atmospheric and Oceanic Sciences through one of the named options:
- Atmospheric and Oceanic Research Program
- Atmospheric and Oceanic Sciences Professional Program

Guide Admissions/How To Get In

Approved Shared Content from /shared/graduate-school-admissions/

Graduate School Admissions

Graduate admissions is a two-step process between academic degree programs and the Graduate School. Applicants must meet requirements of both the program[s] and the Graduate School. Once you have researched the graduate program[s] you are interested in, apply online.

Graduate Admissions Requirements

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Deadline</td>
<td>January 15</td>
</tr>
<tr>
<td>Spring Deadline</td>
<td>This program does not admit in the spring.</td>
</tr>
<tr>
<td>Summer Deadline</td>
<td>This program does not admit in this summer.</td>
</tr>
<tr>
<td>GRE (Graduate Record Examinations)</td>
<td>General test required</td>
</tr>
<tr>
<td>English Proficiency Test</td>
<td>Every applicant whose native language is not English or whose undergraduate instruction was not in English must provide an English proficiency test score and meet the Graduate School minimum requirements (<a href="https://grad.wisc.edu/app/requirements/english-proficiency">https://grad.wisc.edu/app/requirements/english-proficiency</a>).</td>
</tr>
</tbody>
</table>
Admission to the Professional Program requires the same academic strength and expectations of the Research Program, except that you do not need to select an advisor or research topic.

Our criteria for admissions is holistic and we generally favor high-quality applicants who have:
- Evidence of interest in meteorological, climate, ocean, and/or remote sensing careers
- Sufficient background in prerequisite courses to be successful in AOS courses and careers, regardless of academic major
- Evidence of solid written and oral English communication skills
- GPA, GRE, and TOEFL scores reflective of academic strength
- Ability to enhance the academic, geographic, gender, ethnic, economic, or cultural diversity of our department, especially for underrepresented groups.

Applications submitted by January 15th are given highest consideration for Fall semester admission. All applicants are assessed and ranked by an admissions committee chaired by the Graduate Program Chair. Admission priority is given to the highest-ranked applicants who meet our application criteria. No assistantship funding is available in the professional program.

Describe plans for recruiting students to this program.

We have a robust recruiting plan already for our thesis-based programs. Our initial market will draw from similar locations. Jointly with our graduate student association (GSA), undergraduate advisor, and graduate chair, we have designed a number of materials (brochures, website, table materials, posters) that will be updated to highlight the new named option. Our primary venue for this is the annual American Meteorological Society meeting. We have also identified a few other meetings and major undergraduate meteorology programs (Oklahoma University, Penn State, University of Washington) where we will invest additional resources in visits, mailing flyers, and direct outreach to program chairs at respective institutions.

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Projected Annual Enrollment:

<table>
<thead>
<tr>
<th>Year</th>
<th>Projected Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>10</td>
</tr>
<tr>
<td>Year 2</td>
<td>15</td>
</tr>
<tr>
<td>Year 3</td>
<td>20</td>
</tr>
<tr>
<td>Year 4</td>
<td>30</td>
</tr>
<tr>
<td>Year 5</td>
<td>40</td>
</tr>
</tbody>
</table>

Maximum enrollment that can be supported with existing instructional and student services resources: 20

Those who are not familiar with using the html editor fields may upload a document with information about the curriculum for use by those who will format and edit the content that will appear in the Guide.

Parent Requirements

Approved Shared Content from /shared/graduate-minimum-degree-requirements-and-satisfactory-progress/

Minimum Graduate School Requirements

Review the Graduate School minimum academic progress and degree requirements, as well as the program requirements listed below.

Major Requirements

Note: The major is currently non-admitting. Students are admitted through one of the named options (sub-majors) below.

https://next-guide.wisc.edu/courseleaf/approve/?role=GRAD SCH Dept. Approver
### CURRICULAR REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Credit Requirement</td>
<td>M.S.–Research Named Option: 30 credits</td>
</tr>
<tr>
<td>Minimum Residence Credit Requirement</td>
<td>18 credits</td>
</tr>
<tr>
<td>Minimum Graduate Coursework Requirement</td>
<td>See either the M.S. named option in Research or Professional Program for the requirement information.</td>
</tr>
<tr>
<td>Overall Graduate GPA Requirement</td>
<td>See either the M.S. named option in Research or Professional Program for the requirement information.</td>
</tr>
<tr>
<td>Other Grade Requirements</td>
<td>The Graduate School requires an average grade of B or better in all coursework (300 or above, not including research credits) taken as a graduate student unless conditions for probationary status require higher grades. Grades of incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.</td>
</tr>
<tr>
<td>Assessments and Examinations</td>
<td>See either the named option in Research or Professional Program for the requirement information.</td>
</tr>
<tr>
<td>Language Requirements</td>
<td>No language requirements.</td>
</tr>
</tbody>
</table>

### REQUIRED COURSES

Select a Named Option for required courses.

#### Named Options (Sub-Majors)

A named option is a formally documented sub-major within an academic major program. Named options appear on the transcript with degree conferral. Students pursuing the Master of Science in Atmospheric and Oceanic Sciences must select one of the named options:

- Atmospheric and Oceanic Sciences Research Program
- Atmospheric and Oceanic Sciences Professional Program

#### Minimum Graduate School Requirements

Review the Graduate School minimum academic progress and degree requirements, in addition to the program requirements listed below.

**Named Option requirements**

#### mode of instruction

<table>
<thead>
<tr>
<th>Face to Face</th>
<th>Evening/Weekend</th>
<th>Online</th>
<th>Hybrid</th>
<th>Accelerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Approved Shared Content from /shared/graduate-school-mode-instruction-definitions/

**Evening/Weekend**: These programs are offered in an evening and/or weekend format to accommodate working schedules. Enjoy the advantages of on-campus courses and personal connections, while keeping your day job. For more information about the meeting schedule of a specific program, contact the program.

**Online**: These programs are offered primarily online. Many available online programs can be completed almost entirely online with all online programs offering at least 50 percent or more of the program work online. Some online programs have an on-campus component that is often designed to accommodate working schedules. Take advantage of the convenience of online learning while participating in a rich, interactive learning environment. For more information about the online nature of a specific program, contact the program.

**Hybrid**: These programs have innovative curricula that combine on-campus and online formats. Most hybrid programs are completed on-campus with a partial or completely online semester. For more information about the hybrid schedule of a specific program, contact the program.
Accelerated: These on-campus programs are offered in an accelerated format that allows you to complete your program in a condensed timeframe. Enjoy the advantages of on-campus courses with minimal disruption to your career. For more information about the accelerated nature of a specific program, contact the program.

Curricular Requirements

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Credit Requirement</td>
<td>30 credits</td>
</tr>
<tr>
<td>Minimum Residency Credit Requirement</td>
<td>16 credits</td>
</tr>
<tr>
<td>Minimum Graduate Coursework</td>
<td>At least half of degree coursework (15 out of 30 total credits) must be in graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Guide (<a href="http://my.wisc.edu/CourseGuideRedirect/BrowseByTitle">http://my.wisc.edu/CourseGuideRedirect/BrowseByTitle</a>).</td>
</tr>
<tr>
<td>Overall Graduate GPA Requirement</td>
<td>3.00 GPA required</td>
</tr>
<tr>
<td>Other Grade Requirements</td>
<td>Students must earn a C or above in all coursework.</td>
</tr>
<tr>
<td>Assessments and Examinations</td>
<td>Students may not have any more than two incompletes on their record at any one time.</td>
</tr>
<tr>
<td>Language Requirements</td>
<td>None</td>
</tr>
</tbody>
</table>

Required Courses

9 credits in fundamentals of AOS
Students pick three of the following

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Course List</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM OCN 610</td>
<td>Geophysical Fluid Dynamics I</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 611</td>
<td>Geophysical Fluid Dynamics II</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 630</td>
<td>Introduction to Atmospheric and Oceanic Physics</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 640</td>
<td>Radiation in the Atmosphere and Ocean</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

5-6 credits in technical scientific data analysis, measurements and/or programming
At least three credits must be in AOS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Course List</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM OCN 404</td>
<td>Meteorological Measurements</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ATM OCN 373</td>
<td>Computational Methods in Atmospheric and Oceanic Sciences</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 375</td>
<td>Climatological Analysis</td>
<td></td>
<td>3-4</td>
</tr>
<tr>
<td>ATM OCN 650</td>
<td>Analysis of Atmospheric Systems</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>R M I 700</td>
<td>Principles of Risk Management</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>R M I 650</td>
<td>Sustainability, Environmental and Social Risk Management</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

9-10 credits in applied aspects of AOS
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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Course List</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM OCN 435</td>
<td>Global Climate Processes</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 437</td>
<td>Biodisplacement</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 522</td>
<td>Tropical Meteorology</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 660</td>
<td>Past Climate and Climatic Change</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 705</td>
<td>Introduction to Physical Oceanography</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 715</td>
<td>The Middle Atmosphere</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 790</td>
<td>General Circulation of the Atmosphere</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 790</td>
<td>Large-Scale Ocean Atmosphere Coupling</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Satellite meteorology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Course List</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM OCN 441</td>
<td>Radar and Satellite Meteorology</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 637</td>
<td>Cloud Physics</td>
<td></td>
<td>3-4</td>
</tr>
<tr>
<td>ATM OCN 740</td>
<td>Advanced Atmospheric Radiation</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 745</td>
<td>Meteorological Satellite Applications</td>
<td></td>
<td>2-3</td>
</tr>
<tr>
<td>ENVIR ST/C/ENGIR/LAND ARC 556</td>
<td>Remote Sensing Digital Image Processing</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Air Quality

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Course List</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM OCN 535</td>
<td>Atmospheric Dispersion and Air Pollution</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 638</td>
<td>Atmospheric Chemistry</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 773</td>
<td>The Chemistry of Air Pollution</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ATM OCN 775</td>
<td>Boundary Layer Meteorology</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENVIR ST/POP HLTH 502</td>
<td>Air Pollution and Human Health</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Forecasting and modeling

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Course List</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM OCN 610</td>
<td>Geophysical Fluid Dynamics I</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 652</td>
<td>The Fractal Cyclone</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 653</td>
<td>The Fractal Cyclone I</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 453</td>
<td>Synoptic Laboratory II: Mesoscale Meteorology</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>ATM OCN 771</td>
<td>Numerical Modeling in Meteorology</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ATM OCN 801</td>
<td>Topics in Theoretical Meteorology</td>
<td></td>
<td>2-3</td>
</tr>
</tbody>
</table>

1 ATM OCN 610 can count only if not used to count for fundamentals requirement.

6 credits in professional development

https://next-guide.wisc.edu/courseleaf/approve/?role=GRAD SCH Dept Approver
Approved Shared Content from /shared/graduate-school-policies/

Graduate School Policies

The Graduate School’s Academic Policies and Procedures provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

Major-Specific Policies

Graduate Program Handbook

The Graduate Program Handbook is the repository for all of the program’s policies and requirements.

Prior Coursework

Graduate Work from Other Institutions
See either the M.S. named option in Research or Professional Program for the policy information.

UW-Madison Undergraduate
See either the M.S. named option in Research or Professional Program for the policy information.

UW-Madison University Special
See either the M.S. named option in Research or Professional Program for the policy information.

Guide Graduate Policies tab

Approved Shared Content from /shared/graduate-school-policies/

Graduate School Policies

The Graduate School’s Academic Policies and Procedures provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

Named Option-Specific Policies

GRADUATE PROGRAM HANDBOOK

The Graduate Program Handbook is the repository for all of the program’s policies and requirements.

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, 811, and 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.

PRIOR COURSEWORK

Graduate Work from Other Institutions
Students will not be permitted to use credits from previously earned graduate coursework.

UW-Madison Undergraduate
With advisor approval, up to 7 credits numbered 300 or above may be counted toward the degree specialization areas (not the core degree requirements). These credits may be counted toward the minimum graduate coursework (50%) requirement if they are in courses numbered 700 or above. No credits may be counted toward the minimum graduate residence credit requirement. Coursework earned five or more years prior to admission to a master’s degree is not allowed to satisfy requirements.

UW-Madison University Special
With program approval, and payment of the difference in tuition, students are allowed to count up to 7 credits of coursework numbered 300 or above taken as a UW-Madison Special student toward the minimum graduate residence credit requirement and the minimum graduate degree credit requirement. These credits may be counted toward the minimum graduate coursework (50%) requirement if they are in courses numbered 700 or above. Coursework earned five or more years prior to admission is not allowed to satisfy requirements.

PROBATION

The Graduate School regularly reviews the record of any student who earned grades of B, C, D, F, or incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School.

Good standing (progressing according to standards; any funding guarantee remains in place)

Probation (not progressing according to standards but permitted to enroll; loss of funding guarantee; specific plan with dates and deadlines in place in regard to removal of probationary status).

Unsatisfactory progress (not progressing according to standards; not permitted to enroll; dismissal, leave of absence or change of advisor or program).
A semester GPA below 3.0 will result in the student being placed on academic probation. If a semester GPA of 3.0 is not attained during the subsequent semester of full-time enrollment (or 12 credits of enrollment if enrolled part-time), this will be deemed unsatisfactory progress and the student may be dismissed from the program or allowed to continue for one additional semester based on advisor appeal to the Graduate School.

ADVISOR

All students will be assigned a faculty advisor who assists them in planning a course sequence that meets degree requirements and who will discuss career objectives with the students.

CREDITS PER TERM ALLOWED

15 credits

TIME CONSTRAINTS

The professional degree should take 12 months to complete at full-time enrollment, starting in fall semester. Master's degree students who have been absent for five or more consecutive years lose all credits that they have earned before their absence. Individual programs may count the coursework students completed prior to their absence for meeting program requirements; that coursework may not count toward Graduate School credit requirements.

OTHER

Students enrolled in this program are not permitted to accept teaching assistantships, project assistantships, research assistantships or other appointments that would result in a tuition waiver. Students in this program cannot enroll in other graduate programs or take courses outside the prescribed curriculum. Students in the professional program may not switch to research program and then back to professional program. A one-way switch is allowed.

Discuss expected progress to degree and time to degree. For undergraduate programs discuss considerations for supporting students to complete the degree in four academic years.

We expect most students enrolled full time will complete the program in 12 months (fall, spring, summer), with the internship and 810/811 serving as capstone in the summer. AO9999 is taken 1 credit per semester for professional development. We will allow students to enroll part-time on a per credit basis if that fits with job/work needs better (for example, employer is paying for student to acquire degree while still employed).

A typical sequence would look like this:

Fall - enrollment
4 3-credit courses
1 credit AO9999

Spring -
4 3-credit courses

11/11
Atmospheric and Oceanic Sciences

Competitive Pricing
Summary

- Eight competitor programs are included in this analysis. The programs were identified by UW–Madison faculty. To be considered a competitor the program had to confer a Master’s degree and be non-thesis.
  - 6 programs split tuition by in-state and out-of-state
  - 1 program (Miami) charges a flat rate
  - 1 program (Illinois) is fully funded, so tuition is irrelevant
  - 3 programs do not provide any special funding for students

- In-state tuition
  - Range: $14,694 - $50,944 (outlier)
  - Mean: $25,614
  - Median: $19,545
  - Tiers
    - Lowest: ~$15,000
    - Low: ~$24,000
    - Middle: ~$34,000
    - Highest: ~$51,000

- Out-of-State tuition
  - Range: $33,471 - $95,788 (outlier)
  - Mean: $50,088
  - Median: $36,552
  - Tiers
    - Low: ~$35,000
    - Middle: ~$61,000
    - Highest: ~$96,000

- The one flat-rate program charges $60,900 in tuition.
- Assuming Madison keeps the model (12 Fall + 12 Spring + 6 Summer) then regular graduate tuition rates would put us in the lowest-low end ($14,985 in-state and $31,644 out-of-state) of tuition charges amongst competitors.
Tuition Chart: Non-Thesis

- **In-state, funding available**
- **In-state, no funding**
- **OOS, funding available**
- **OOS, no funding**
- **Flat rate, no funding**

<table>
<thead>
<tr>
<th>University</th>
<th>Tuition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Arizona</td>
<td>$14,694</td>
</tr>
<tr>
<td>Colorado State</td>
<td>$15,320</td>
</tr>
<tr>
<td>FSU</td>
<td>$15,338</td>
</tr>
<tr>
<td>Millersville</td>
<td>$23,751</td>
</tr>
<tr>
<td>Millersville</td>
<td>$33,471</td>
</tr>
<tr>
<td>UCLA</td>
<td>$33,636</td>
</tr>
<tr>
<td>Northern Arizona</td>
<td>$34,323</td>
</tr>
<tr>
<td>FSU</td>
<td>$35,543</td>
</tr>
<tr>
<td>Colorado State</td>
<td>$37,560</td>
</tr>
<tr>
<td>Michigan</td>
<td>$50,944</td>
</tr>
<tr>
<td>Miami</td>
<td>$60,900</td>
</tr>
<tr>
<td>UCLA</td>
<td>$63,840</td>
</tr>
<tr>
<td>Michigan</td>
<td>$95,788</td>
</tr>
</tbody>
</table>
### Competitive Landscape: Non-Thesis

<table>
<thead>
<tr>
<th>Institution</th>
<th>Program/Degree</th>
<th>Thesis/Non-Thesis</th>
<th>Duration</th>
<th>Credits</th>
<th>Tuition Estimate</th>
<th>Modality</th>
<th>Available Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Northern Arizona</strong></td>
<td>Master of Science in Climate Science and Solutions</td>
<td>Non-Thesis</td>
<td>18 months</td>
<td>36</td>
<td>$14,694 (in-state) $34,323 (oos) *assume 3 semesters</td>
<td>Face-to-Face</td>
<td>Grad assistantships, scholarships, need-based stipends, project specific funding</td>
</tr>
<tr>
<td><strong>Colorado State</strong></td>
<td>Master of Science in Atmospheric Science</td>
<td>Non-Thesis Option</td>
<td>not specified</td>
<td>32 (minimum)</td>
<td>$15,320 (in-state) $37,560 (oos) *assume 3 semesters</td>
<td>Face-to-Face</td>
<td>Scholarships available</td>
</tr>
<tr>
<td><strong>University of Miami</strong></td>
<td>Master of Professional Science (3 tracks)</td>
<td>Non-Thesis</td>
<td>12-18 months</td>
<td>30</td>
<td>$60,900</td>
<td>Face-to-Face</td>
<td>None Self-funded degree program</td>
</tr>
<tr>
<td><strong>Florida State</strong></td>
<td>M.S. in Meteorology</td>
<td>Non-Thesis Option (Course Plan)</td>
<td>not specified</td>
<td>32</td>
<td>$15,338 (in-state) $35,543 (oos)</td>
<td>Face-to-Face</td>
<td>Fellowships, Grants, Grad Assistantships</td>
</tr>
</tbody>
</table>
# Competitive Landscape: Non-Thesis

<table>
<thead>
<tr>
<th>Institution</th>
<th>University of Michigan</th>
<th>UCLA</th>
<th>Millersville University</th>
<th>University of Illinois</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program/Degree</td>
<td>Master of Science Degree in Climate and Space Sciences and Engineering</td>
<td>Atmospheric and Oceanic Sciences M.S.</td>
<td>M.S. in Integrated Scientific Applications, concentration in Climate Science Applications</td>
<td>Master of Science Degree in Atmospheric Sciences</td>
</tr>
<tr>
<td>Duration</td>
<td>Not specified, assume 2 years</td>
<td>2 years (6 quarters)</td>
<td>not specified</td>
<td>not specified</td>
</tr>
<tr>
<td>Credits</td>
<td>30</td>
<td>36</td>
<td>36</td>
<td>32</td>
</tr>
<tr>
<td>Tuition Estimate</td>
<td>$50,944 (in-state) $95,788 (oos)</td>
<td>$33,636 (in-state) $63,840 (oos)</td>
<td>$23,751 (in-state) $33,471 (oos)</td>
<td>not applicable, full waiver program</td>
</tr>
<tr>
<td>Modality</td>
<td>Face-to-Face</td>
<td>Face-to-Face</td>
<td>Blended – online and face-to-face courses</td>
<td>Face-to-Face</td>
</tr>
<tr>
<td>Available Funding</td>
<td>None</td>
<td>fellowships, grants, teaching assistantships, research assistantships</td>
<td>None</td>
<td>Research Assistantships, Teaching Assistantships, Full tuition waivers</td>
</tr>
<tr>
<td>Institution</td>
<td>University of Washington</td>
<td>MIT</td>
<td>University of Oklahoma</td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>----------------------------</td>
<td>-----------------------------</td>
<td>------------------------</td>
<td></td>
</tr>
<tr>
<td>Program/Degree</td>
<td>Master of Science in Atmospheric Sciences</td>
<td>Master of Science (Atmospheric Science or Climate Science)</td>
<td>M.S. in Meteorology or M.S. in Professional Meteorology</td>
<td></td>
</tr>
<tr>
<td>Duration</td>
<td>3 years</td>
<td>2 years</td>
<td>2 years</td>
<td></td>
</tr>
<tr>
<td>Credits</td>
<td>36</td>
<td>10 courses</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Tuition Estimate</td>
<td>$47,718 (in-state) $85,185 (oos)</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Modality</td>
<td>Face-to-Face</td>
<td>Face-to-Face</td>
<td>Face-to-Face</td>
<td></td>
</tr>
<tr>
<td>Available Funding</td>
<td>Teaching Assistantships, Research Assistantships, Fellowships</td>
<td>All students are fully funded</td>
<td>Generally only accept students can support through GRA/GTA stipends</td>
<td></td>
</tr>
</tbody>
</table>

**Excluded Competitors:**
- Princeton University, PhD only
- Penn State University, ugrad only
- Lyndon State, ugrad only
Thank you Ankur. I just returned from Europe and have asked my department for a positive vote. I suspect we need also to go through the school and will find out by the end of the week. I personally am supportive,

Joan

On Mar 22, 2019, at 9:53 AM, Ankur Desai <desai@aos.wisc.edu> wrote:

Dear Joan,
I am following up the Atmospheric and Oceanic Sciences Program professional master’s. At the moment, we have placed two RMI courses (650 and 700) as electives within one of the requirements for the program. If students elect to take those, we would transfer to your unit $600/student credit hour per L&S policy. Given our enrollment projections are modest (~20), we expect increase in enrollment for these courses to be small (< 10/yr).

If you think your program is able to support this, it would be useful for the proposal (due April 1) to get either a letter of support or an email of saying you are in support of the proposal.

Attached is a brief “program concept” detailing the curriculum. You can also view the proposal (in progress) on Lumen at: https://next-guide.wisc.edu/programadmin/?key=1047
Market-Based Tuition Policy

V1 November 2017; V2 November 2018; V 3 11 17 2018; V4 12 04 2018

Under UW System tuition policy the UW-Madison Chancellor has the authority to propose to the UW System President per-credit market-based tuition for programs that serve non-traditional audiences. Programs that are specifically designed for adults and non-traditional audiences, and are supported directly through program revenue, may seek market-based tuition.

For-credit programs seeking market-based tuition must be designed to enhance the professional skills for post-bachelors and non-degree students, be responsive to local and national labor markets, and be delivered in non-traditional formats that include accelerated, hybrid face-to-face/online formats, or part-time, weekend or evening formats. Such programs typically have a clearly defined curriculum that follows a defined path and a predictable timeline for progress and completion. For eligible programs, the market-based tuition structure may allow for more competitive market pricing relative to peer and competitor programs and support enrollment growth.

Policy
Graduate and Capstone programs eligible for the market-based tuition structure may choose between tuition structures:

- A Board of Regent-approved standard graduate or professional-program-specific tuition structure, that includes resident/MN/nonresident tuition rates, plateau structure and segregated fees; OR
- Market-based tuition structure, using one of the following per-credit increments (no residency rates and no credit plateau).

<table>
<thead>
<tr>
<th>$800/credit</th>
<th>$1,200/credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$850/credit</td>
<td>$1,300/credit</td>
</tr>
<tr>
<td>$900/credit</td>
<td>$1,500/credit</td>
</tr>
<tr>
<td>$1,000/credit</td>
<td>$1,600/credit</td>
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<td>$1,100/credit</td>
<td>$2,000/credit</td>
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<tr>
<td>$1,150/credit</td>
<td>$2,500/credit</td>
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**Segregated University Fees**
Market-based tuition programs are predominately face-to-face programs and will charge segregated fees.

Proposal Deadlines
Implementation in Fall or Summer term: submit proposal by December 1 of prior year; approval must be complete by February 1. Implementation in Spring term: submit proposal by August 15; approval must be complete by October 1.

Implementation
- Market-based tuition programs may request any one of the approved tuition increments.
- Programs seeking to utilize one of the market-based tuition increments will have to show that the proposed tuition is appropriate based on the market, and show how the proposed tuition is competitive with peer or competitor programs.
- The tuition structure and rate will apply to all students in the program; cohort tuition is not allowed.
- Submit proposals to the director of Academic Planning and Institutional Research (Jocelyn Milner, Jocelyn.milner@wisc.edu).
- Academic Planning and Institutional Research will coordinate the approvals with the Provost, VCFA, Madison Budget Office and Office of the Chancellor.
- Notification of approval will include program representatives, school/college deans office, Graduate School, Registrar’s Office, Bursar’s Office, Madison Budget Office, Academic Planning and Institutional Research, Division of Continuing Studies, VCFA, and Provost.
- Proposals and decisions will be added to the Lumen Programs system administratively after approval.

This policy is in keeping with UW System Tuition Policy (SYS 805) and UW System Policy for Programming for the Non-Traditional Market (SYS 130)
https://www.wisconsin.edu/uw-policies/uw-system-administrative-policies/programming-for-the-non-traditional-market-in-the-uw-system/
MARKET-BASED TUITION PROGRAM TUITION REQUEST FORM

In keeping with UW System Administrative Policy 130 (SYS 130) on programming and tuition setting for the non-traditional market, this is a proposal for market-based tuition for a UW-Madison program that has been approved under the entrepreneurial program model. Programs are predominately face-to-face delivered programs designed for adults and non-traditional audiences, designed to enhance the professional skills for post-bachelors and non-degree students, be responsive to local and national labor markets, and be delivered in non-traditional formats that include accelerated, hybrid face-to-face/online formats, part-time, weekend or evening formats. Such programs typically have a clearly defined curriculum that follows a defined path and a predictable timeline for progress and completion. Market-based tuition rates are higher than standard Wisconsin resident graduate tuition at UW-Madison ($670 per credit for Wisconsin residents and $1503 for nonresidents in 2017-18).

1. Program Name: Atmospheric & Oceanic Sciences Professional Masters Program
   Plan Code:
   Subplan Code:

2. Department/Program Contact Person/Title/Email: Ankur Desai, Professor, desai@aos.wisc.edu

3. School/College Contact Person/Title/Email: Elaine Klein, L&S, Associate Dean for Academic Planning, elaine.klein@wisc.edu

3. Request Submission Date: March 27, 2019

4. Term for Requested Tuition to be Effective: Fall 2020

5. Requested Tuition Rate from List of Allowed Rates: $1,000 per credit

6. Describe the student audience, program structure, and how the program meets the criteria for market-based tuition: The student audience for this program are students primarily interested in careers in atmospheric science forecasting, modeling, communications, or consulting for which a research-based master’s program is not a good fit. The one-year, 30-credit professional program proposed would allow students with a 4-year undergraduate degree to get the additional education in a one-year time period that they need to successfully obtain jobs in weather-related fields. This program is designed for non-traditional students, has the potential for 40 students per year at 30 credits each (1200 credits total), and has the opportunity for differentiated market tuition.

7. Provide a rationale that this tuition rate is appropriate, based on the market, and show how the proposed tuition is competitive with peer or competitor programs. Specifically, provide information about competitor programs and pricing (usually presented in tabular form with relevant regional competitors, Big 10 competitors, and other key national competitors), including competitor programs at other UW institutions. Based on the market study conducted by the Division of Continuing Studies, $1,000/credit would put the total cost of the program at $30,000. When taking into account other programs (in-state and out-of-state tuition), this rate is mid-range. Specific details about the market study are included in an attached presentation. There is no other program like this at other UW institutions currently, and are very few nation-wide.
8. Provide a summary of applicant volume, enrollment trends, graduation patterns, and market demand for graduates. We have 80-100 applicants a year to the PhD and MS program combined, and at least 10 or more of these already would be direct fits into a professional MS program based on the graduate chair’s 9 years-experience of running admissions. A program that is internship based instead of thesis driven, 1 year, with courses in programming and skills development, but still includes our rigorous core program and maintains high admissions and academic standards, will allow us to serve a pool of students who can grow the program, contribute broadly in careers in our field, and help maintain our reputation as a top graduate program.

The Division of Continuing Studies conducted a market analysis, peer program analysis, and alumni interviews with our alumni board. All three studies showed strong demand for the program, limited competition in the region or in our niches, and enthusiasm by alumni in industry for the program, for hosting interns, and for addressing the needs of our field. The American Meteorological Society has recently revised its recommended program standards to address a rapidly changing workforce, and our program directly addresses the needs outlined in those reports, too. The market analysis showed a larger number of positions seeking skilled atmospheric scientists. The alumni board noted that a professional MS from UW would be viewed strongly in that market. Most of our existing BS students have noted that an MS is the new entry ticket to many positions in our field in forecasting, consulting, operations. In particular, skills like technical writing, programming for data analysis, forecast modeling, working with diverse teams, and advanced understanding of societal issues of climate/weather are key factors for their hiring.

9. Provide summary information about anticipated program revenues and expenses.
Based on the 131 Program Model spreadsheet, we expect expenses to cover a 50% TA for the summer internship course, a 100% FTE Student Services Coordinator to serve as the Program Coordinator, marketing costs (to cover printing and advertising, as well as funding for the Program Coordinator to travel to conferences for recruiting purposes. Additionally, there will be expenses associated with the credits required from courses in other programs.

The planned use of program revenue currently covers scholarships for current undergraduates in the AOS program at UW (approximately 20% of enrolled students will receive a $7000 discount on tuition), covering the costs (up to $1500 for each student) to attend the AMS Conference and complete their CCM certification, as well as a 33.4% TA for other courses to offset additional work associated with adding 10-40 students per year to existing courses.

Use this request form in conjunction with the UW-Madison policy on market-based tuition.
Submit the form to director of Academic Planning and Institutional Research (jocelyn.milner@wisc.edu)

Form creation date 2018 12 04
MEMORANDUM

Date: April 18, 2019
To: Elaine Klein, Associate Dean for Academic Planning, College of Letters and Sciences
From: Barry Gerhart, Interim Albert O. Nicholas Dean, Wisconsin School of Business
Re: Proposal for new named option in the MS-Atmospheric and Oceanic Sciences

Thank you for sharing information about the L&S Department of Atmospheric and Oceanic Sciences’ proposal to create a new “Professional Program” named option in the MS-Atmospheric and Oceanic Sciences. The Wisconsin School of Business (WSB) Academic Planning Council is pleased to provide our support for creation of this named option.

We note that the named option requires two WSB courses on Risk Management (RMI 700 and RMI 650), and look forward to development of an MOU with WSB to address enrollments in these courses by students in the MS-Atmospheric and Oceanic Sciences.

Copies:
Ankur Desai, Department of Atmospheric and Oceanic Sciences
Joan Schmit, Department of Risk and Insurance, WSB
Ella Mae Matsumura, Senior Associate Dean of Academic Programs, WSB
19 April 2019

To: Prof. Gregory Tripoli, Chair, Department of Atmospheric and Oceanic Sciences

Dear Prof. Tripoli,

We are pleased to enthusiastically endorse the proposal for a professionally focused named option within the Atmospheric and Oceanic Science (AOS) Master’s degree that will train application-oriented students.

The remit of the Nelson Institute is all of the environment. To accomplish this daunting objective, we must rely on collaborations across campus. It is for this reason, among others, that we can offer our encouragement and support for this initiative. The research and teaching of AOS is foundational to a strong institutional environmental program. We see this proposed program as adding additional strength.

This specific proposal addresses a need for persons whose objective lies in the direction of application rather than research. For such persons the long apprenticeship required of a research degree is not an efficient pathway. Thus the appeal of a strongly targeted one-year program that will provide them with the background necessary for jobs that require advanced knowledge but not advanced research experience. The credential they earn will allow them to assume a variety of positions as explained in your proposal.

Our experience with professional programs gives us confidence that your accelerated program can meet its objectives. A main reason is that the draw of the University of Wisconsin – Madison and in this instance the stellar reputation of AOS will assure that applicants will be of high quality. This will mean that students accepted into the program will already have substantial academic accomplishments and therefore be equipped to undertake an intensive single year course of study.

The curriculum is properly focused on rigorous technical coursework, but we note the inclusion of courses, for example ES/POP HLTH 502, that draw on broader environmental perspectives. As an interdisciplinary institute, we endorse this element.

We are very willing to provide whatever assistance we can in aid of this valuable program and are strongly supportive of its approval.

Sincerely,

Paul H. Zedler
Assoc. Dean for Research and Education