Program Request for Meteorology Minor

Department of Meteorology
College of Mines and Earth Sciences
January 16, 2004
Table of Contents

SECTION I: The Request .................................................................................................................. 1
   The Request .......................................................................................................................... 1

SECTION II: Program Description ................................................................................................. 1
   Complete Program Description ............................................................................................. 1
   Purpose of the Degree ............................................................................................................ 2
   Admission Requirements ....................................................................................................... 2
   Student Advising .................................................................................................................. 2
   Justification for Number of Credits ...................................................................................... 2
   External Review and Accreditation ......................................................................................... 2

SECTION III: Program Need ......................................................................................................... 3
   Program Necessity .................................................................................................................. 3
   Similar Programs .................................................................................................................... 3
   Benefits .................................................................................................................................. 3
   Consistency with Institutional Mission ................................................................................. 4

SECTION IV: Institutional Impact ................................................................................................... 4
   Projected Enrollment .............................................................................................................. 4
   Expansion of Existing Program .............................................................................................. 4
   Faculty ..................................................................................................................................... 4
   Staff ......................................................................................................................................... 4
   Library .................................................................................................................................... 4
   Other Learning Resources ...................................................................................................... 4

SECTION V: Finances ....................................................................................................................... 4
   Budget ...................................................................................................................................... 4

Signature Page ............................................................................................................................... 5
SECTION I: The Request

The Request

This proposal requests to establish an Undergraduate Minor in Meteorology. The proposed minor will offer interested undergraduate students the opportunity to explore the impacts of the atmosphere upon society. It will also provide a way for students to diversify their academic backgrounds and apply fundamental scientific principles in an interdisciplinary way.

SECTION II: Program Description

Complete Program Description

The proposed Undergraduate Minor in Meteorology will require students to complete the following six courses in the Meteorology Department:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>METEO 1010</td>
<td>Introduction to Meteorology</td>
<td>3</td>
</tr>
<tr>
<td>METEO 1020</td>
<td>Climate Change</td>
<td>3</td>
</tr>
<tr>
<td>METEO 2810</td>
<td>Undergraduate Seminar</td>
<td>1</td>
</tr>
<tr>
<td>METEO 3000</td>
<td>Mountain Meteorology</td>
<td>3</td>
</tr>
<tr>
<td>METEO 3100</td>
<td>Atmospheric Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>METEO 3110</td>
<td>Introduction to Atmospheric Sciences</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Number of METEO Units 16

The following prerequisite courses are also required to complete this course sequence.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1210</td>
<td>General Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 1210</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 1220</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>PHYCS 2210</td>
<td>Physics for Scientists and Engineers I</td>
<td>4</td>
</tr>
</tbody>
</table>

Total Number of Prerequisite Units 15

Total Number of Units Required to Complete the Minor 31

Math, engineering, and other science majors wishing to complete an Undergraduate Minor in Meteorology may choose to replace one or more of the required METEO courses listed above with upper-division meteorology courses from the following list of options.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>METEO 3410</td>
<td>Meteorological Instrumentation and Computing</td>
<td>3</td>
</tr>
<tr>
<td>METEO 3510</td>
<td>Atmospheric Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>METEO 5110</td>
<td>Dynamic Meteorology I</td>
<td>3</td>
</tr>
<tr>
<td>METEO 5120</td>
<td>Dynamic Meteorology II</td>
<td>3</td>
</tr>
<tr>
<td>METEO 5140</td>
<td>Mesoscale and Radar Meteorology</td>
<td>3</td>
</tr>
<tr>
<td>METEO 5210</td>
<td>Physical Meteorology</td>
<td>3</td>
</tr>
<tr>
<td>METEO 5410</td>
<td>Remote Sensing of the Environment</td>
<td>3</td>
</tr>
<tr>
<td>METEO 5530</td>
<td>Synoptic Meteorology I</td>
<td>3</td>
</tr>
<tr>
<td>METEO 5540</td>
<td>Synoptic Meteorology II</td>
<td>3</td>
</tr>
<tr>
<td>METEO 5810</td>
<td>Weather Discussion</td>
<td>1</td>
</tr>
</tbody>
</table>
All meteorology courses must be passed with a letter grade of C- or better to count as credit toward the Undergraduate Minor in Meteorology.

**Purpose of the Degree**

This program offers a structured framework in which a student can receive training in the atmospheric sciences through a prescribed course of study. The meteorology minor offers the opportunity for undergraduate students in any discipline to engage in a program of study designed to teach the fundamentals of atmospheric sciences and the impact of the atmosphere on society. Students interested in this program must successfully complete METEO 1010 (or equivalent) and apply for the program with the Meteorology Department. The Meteorology Minor requires the successful completion of a minimum of 16 credit hours of courses within the Meteorology Department.

**Admission Requirements**

Students are required to be in good standing with the university as evidenced by official transcripts and to have successfully completed METEO 1010 (or equivalent). Students meeting these criteria will be allowed to register with the Meteorology Department and declare their intent to pursue a meteorology minor. Registration will consist of the student’s name, student ID, contact information, expected date of graduation, and their declared major. The meteorology minor requires a letter grade of C- or higher in all courses required for the minor. With the exception of METEO 2810 and 5810, grades of Credit cannot be used to fulfill any of the requirements for the meteorology minor.

**Student Advising**

To help students maintain high scholastic standards, the department has appointed advisers to consult with them about their academic progress. All students will be assigned an academic adviser upon declaring a meteorology minor. We recommend that students consult their advisers at least twice each year and require everyone to consult with the advisers yearly. Failure to do so may result in dismissal from the program.

**Justification for Number of Credits**

The number of credit hours required for the Meteorology Minor, 16, is within the range of the number of hours required by other minors already in existence at the University of Utah. In addition, this number of required hours is sufficient to expose the students to the fundamentals of the atmospheric sciences and allow the target student audience for the minor to include it in a complete program of study.

**External Review and Accreditation**

No external consultants were involved in the development of this program and no professional accreditation is required. The primary goal of this program is to provide students with an understanding of the fundamentals of atmospheric sciences and the effects of the atmosphere on society. It is not intended to prepare students for employment as a professional meteorologist. Students wishing to pursue a career as a professional meteorologist need to complete the B.S. Degree in Meteorology that is offered by the Department of Meteorology.
SECTION III: Program Need

Program Necessity

There are two groups of students that will benefit from the creation of an Undergraduate Minor in Meteorology. These groups include: 1) students interested in pursuing a career in broadcast meteorology, and 2) engineering and science students that have an interest in the atmosphere.

Many incoming freshmen that are interested in pursuing a Meteorology degree have an interest in the field of broadcast meteorology. Although these students are very interested in the atmospheric sciences, many are overwhelmed by the large number of prerequisite courses in math, physics, chemistry, and computer science that are required to complete a meteorology degree. They also don’t have enough elective credits available to pursue many courses within the communication department that would help build the skills necessary for a successful career in broadcast meteorology. As a result, these students are forced into one of the following options:

1) complete a degree in meteorology and forego the communication courses that they desire,
2) delay graduation so that they can complete the meteorology degree and the communication courses that they desire,
3) design a Bachelor of University Studies Degree in Broadcast Meteorology, or
4) drop out of the meteorology program altogether to pursue another degree such as communication.

Unfortunately, many of these students end up choosing the last option despite their strong interest in meteorology. The choice for these students is made somewhat easier when they realize that a meteorology degree is not mandatory to pursue a career in broadcast meteorology.

The second group of students that will benefit from the creation of an Undergraduate Minor in Meteorology is engineering and science students that have an interest in the atmosphere and related environmental fields. At present there is no incentive for these students to take more than one or two meteorology courses. However, the existence of a meteorology minor could encourage students with a strong interest to continue the pursuit of additional meteorology courses beyond their initial foray into the field.

Similar Programs

A total of 57 colleges and universities in the United States offer a B.S. degree in meteorology. Slightly more than half of these programs also offer a meteorology minor. The program outlined in SECTION II of this proposal is consistent with programs offered by other departments that are members of the University Corporation for Atmospheric Research (UCAR).

Benefits

The University of Utah and the USHE benefit by offering a Meteorology Minor program because it fulfills the need of the student, the ultimate customer. When students have options such as this open to them they will be more likely to stay on track in the University of Utah system.
Consistency with Institutional Mission

The proposed Meteorology Minor program is consistent with and appropriate to the University of Utah mission toward undergraduate and graduate education, research and scholarship. This undergraduate program will provide high quality academic, professional, and applied learning opportunities designed to advance the intellectual well-being of the students who enroll in it. In doing so, the Meteorology Minor will be consistent with the institutional mission of the university.

SECTION IV: Institutional Impact

Projected Enrollment

The projected enrollment of students interested in broadcast meteorology would be about 5 students/year. The number of engineering and science majors enrolling in the program is likely to be in the 1-2 students/year range for the first few years and 3-5 students/year as the availability of the program becomes more well known.

Expansion of Existing Program

The Meteorology Minor is not an expansion of any existing program and will not require any additional courses.

Faculty

No additional faculty will be required; current faculty, materials and facilities can absorb the additional student load.

Staff

No additional staff will be required; current staff can meet the needs of the additional student load.

Library

The University of Utah’s Marriott Library currently has all of the materials required to offer a meteorology minor program as described in this proposal.

Other Learning Resources

No additional learning resources are required to support this program.

SECTION V: Finances

Budget

No additional resources are required, either as new funding or reallocation of existing budgets.
Signature Page

Institution Submitting Proposal: University of Utah

College, School of Division affected: College of Mines and Earth Sciences

Department(s) or Area(s) affected: Meteorology Department

Change Description: Creation of a Undergraduate Minor in Meteorology

Proposed Beginning Date: Fall 2004

_______________________________________________

Institutional Signatures (as appropriate):

Edward J. Zipser, Department Chair

Francis H. Brown, Dean

Chief Academic Officer

President

_______________________________________________

Date