WINONA STATE UNIVERSITY
PROPOSAL FOR NEW COURSES

Department ___________ GEOSCIENCE ___________________________ Date 01 OCTOBER 2003

116 ___________ METEOROLOGY ________________________________ 3 ___________
Course No. Course Name Credits

This proposal is for a(n) ___ XX __ Undergraduate Course _____ Graduate Course

Applies to: ___ XX __ Major ___ XX __ Minor ___ XX __ University Studies*
___ XX __ Required ___ XX __ Elective
___ XX __ Required ___ XX __ Elective

Prerequisites _____ NONE ____________

Grading method ___ XX __ Grade only _____ P/NC only _____ Grade and P/NC Option

Frequency of offering ___ Alternate Years (Spring)___

*For University Studies Program course approval, the form Proposal for University Studies Courses must also be completed. submitted according to the instructions on that form.

Provide the following information (attach materials to this proposal):

A. Course Description
   1. Catalog description.
   2. Course outline of the major topics and subtopics (minimum of two-level outline).
   3. Basic instructional plan and methods.
   4. Course requirements (papers, lab work, projects, etc.) and means of evaluation.
   5. Course materials (textbook(s), articles, etc.).
   6. List of references.

B. Rationale
   1. Statement of the major focus and objectives of the course.
   2. Specify how this new course contributes to the departmental curriculum.
   3. Indicate any course(s) which may be dropped if this course is approved.

C. Impact of this Course on other Departments, Programs, Majors, or Minors
   1. Does this course increase or decrease the total credits required by a major or minor of any other department? If so, which department(s)?
   2. List the departments, if any, which have been consulted about this proposal.

D. University Studies Course Proposals
   The form Proposal for University Studies Course must also be completed and submitted according to the instructions on that form.

Attach a Financial and Staffing Data Sheet.

Attach an Approval Form.

Department Contact Person for this Proposal:

Toby Dogwiler _____________ x5267 _____________ tdogwiler@winona.edu
Name (please print) Phone e-mail address

Geoscience 116 1 T. Dogwiler
Meteorology Course Proposal
Include a Financial and Staffing Data Sheet with any proposal for a new course, new program, or revised program.

Please answer the following questions completely. Provide supporting data.

1. Would this course or program be taught with existing staff or with new or additional staff? If this course would be taught by adjunct faculty, include a rationale.

Geoscience 116, METEOROLOGY, will be taught by existing staff.

2. What impact would approval of this course/program have on current course offerings? Please discuss number of sections of current offerings, dropping of courses, etc.

The Geoscience Department anticipates offering GEOS 116, Meteorology, regularly in association with GEOS 115, Meteorology (a currently approved course satisfying US Natural Science Lab requirements). GEOS 116 will offer students a lecture-only option (3 cr) and GEOS 115 will continue to be lecture plus laboratory (4 cr). Thus, the lecture for both courses will taught simultaneously. This will give students the option of taking the course for lab or non-lab credit. In semesters when faculty teaching loads do not permit an additional laboratory course, GEOS 116 may be offered alone without the option of enrolling in GEOS 115 for lab credit.

3. What effect would approval of this course/program have on the department supplies? Include data to support expenditures for staffing, equipment, supplies, instructional resources, etc.

None. Existing resources (for GEOS 115) will be utilized in this course.
Routing form for new and revised courses and programs.  

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<th>Course or Program</th>
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<td><strong>Department Recommendation</strong></td>
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<td><strong>Dean’s Recommendation</strong></td>
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<td>Dean of College</td>
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<td><strong>A2C2 Recommendation</strong></td>
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<td><strong>Graduate Council Recommendation</strong></td>
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<td>Director of Graduate Studies</td>
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<td><strong>Faculty Senate Recommendation</strong></td>
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<td>President of Faculty Senate</td>
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<td><strong>Academic Vice President Recommendation</strong></td>
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A. Provide a Description of the Course

Sample Syllabus

GEOS 116 Meteorology

MWF 11:00 – 11:50
Room 206 Stark Hall

Instructor: Dr. Toby Dogwiler, PA 114A, 457-5267, tdogwiler@winona.edu

Course Catalog Description:

116 – Meteorology—3 S.H.
Study of the earth's dynamic weather system including atmospheric structure, composition, and processes; origin and development of storms and related phenomena. Lecture only. Offered in alternate years, normally in the Spring Semester. Prerequisites: none. NOTE: A student may enroll in either GEOS 115 or GEOS 116, but cannot earn credit for both courses.

Literature

Required Text:

References
Wright, H.E., Jr., et al. (eds.), 1993, Global Climates since the Last Glacial Maximum: University of Minnesota Press, Minneapolis.

Laptop Information

1. Laptop is required for course
2. Laptop must have Microsoft Excel, Microsoft Word, Adobe Acrobat Reader, and a web browser installed and functional.
3. You will need an ethernet cable for lecture

Class Materials

1. Bring your laptop, ethernet cable, Blue Skies CD, and/or Tropical Cyclones workbook and CD when directed
2. Bring a Scantron to each class meeting, in case of pop quizzes, and to each exam
3. Bring your textbook to every class. My lectures will be based on the textbook and often I will display figures during the lecture from the textbook.

Assessment

Grading: A > 90%; B 80-89; C 70-79; D 60-69; F <60 (Course must be taken for a Letter Grade)

Exams (3) 75%
Class Participation/Assignments 15%
Quizzes 10%

Policies

• **Class Attendance**- Class attendance is essential for success. You are responsible for knowing what is covered and assigned in class regardless of whether or not you are present. A lecture will not be repeated to you during office hours simply because you chose not to attend class. Attendance and participation will affect the outcome of your final grade.

• **Absences**- Examples of unexcused absences include but are not limited to: attendance at weddings, convenient rides home, oversleeping, un-preparedness. Examples of excusable absences include verifiable illness, and family emergency. Prior notice must be given by e-mailing (tdogwiler@winona.edu) the instructor. Notification by phone call will only be acceptable under the most extenuating circumstances and must be followed promptly by an e-mail.

• **Attendance to exams is mandatory**

• **Assignments**- In-class, web-based assignments, reading, and study assignments will be made throughout the semester. It is assumed that students will come to class prepared to participate and discuss the assignments. Pop quizzes will be administered periodically to ensure that students are keeping up with these assignments.

• **Late assignments**- Late assignments will be penalized 15% per day, including the day it was originally due.

• **Academic Dishonesty**- Cheating of any kind will be grounds for automatically failing the course, or at the instructor’s discretion, a minimum penalty of a zero (0) for that assignment may be assessed to first time offenders. Cheating on an exam will automatically, and without exception, result in failure of the course. All cases of academic dishonesty will be reported to university authorities. If you discuss an assignment with someone else, you are both expected to write up your answers individually and in your own words. It is a violation of academic honesty (in other words, cheating) to turn in answers copied from another students paper, even if you worked together to achieve the answer!

Disabilities:
If you have a documented physical or cognitive disability, please notify me as soon as possible so that we can discuss how best to accommodate your needs. Further information and assistance is available from Student Support Services (Howell 133, x5465, www.winona.edu/studentsupportservices) or the Disability Resource Center (Howell 136, x2391, x2409 TTY, www.winona.edu/disabilityservices).

Course Outline

We will generally follow the outline of the Meteorology Textbook. I will attempt to cover one chapter each week. However, regular updates about material and reading assignments will be made in lecture and over Blackboard.

1) Introduction
   a) Climate vs. Weather
2) Structure of the Atmosphere
   a) Physical/Density
   b) Chemical/Compositional
3) Solar Radiation
   a) Energy Budget
   b) Albedo
   c) Changes through time
4) Thermal Systems
   a) How the Earth is heated
   b) Temperature variations
   i) Daily
   ii) Seasonally
   iii) Annually
5) Atmospheric Moisture
   a) Hydrologic Cycle
   b) Entrainment of moisture
   c) Humidity
6) Adiabatics
Course Philosophy

Meteorology is a particularly interesting subject because it plays such an intimate role in our daily routines. Part of the fun of this subject is the ease with which anyone can make weather observations using readily available and easy-to-use equipment (i.e., rain gauge, thermometer, barometer, etc.). This course will follow local, regional, and national weather occurrences and phenomena by beginning each lecture with an overview of the current weather and the short-term forecasts. Students will complete short, in-class assignments where they directly measure weather phenomena and where they obtain real weather data from the internet. These observations, assignments, and research activities will allow us to maintain a solid grounding in the actual weather all around us while we investigate the more abstract concepts and processes at work in the atmosphere that are, as a sum-total, the weather.

B. Rationale for the New Course

Major Focus and Course Objectives

The four major goals of the course: These are the ideal outcomes of the course. A student’s overall grade in the course will, for the most part, be an assessment of how successful one is in attaining these goals (as demonstrated through assignments, quizzes, and exams):

1) Each student will have a working knowledge of how the wind moves around weather areas and how weather patterns move across the U.S.
2) Each student will be able to go outside and with a few observations be able to predict the weather for the next 12-24 hours with a 70% accuracy.
3) Each student will be able to describe the forces of nature that determine the various weather elements and relate those forces to the pertinent weather processes.
4) Given a current weather map and/or upper atmospheric charts, each student will be able to predict at least 5 of the 7 main weather elements and predict the weather for the following 24 hours.

How the Course Will Contribute to Geoscience Department Curriculum

The existing laboratory course (GEOS 115) is a required course for Geoscience majors on the Earth Science Teaching track. By offering Meteorology in a lecture-only option, (GEOS 116), we bring this course in alignment with our other introductory level courses that explore topics of general interest in geoscience for the general university student population. In addition to providing an opportunity for our
majors to learn about atmospheric processes, Meteorology helps students develop skills at analyzing data and quantifying trends and patterns. This course also adds to our departmental goal of providing major and non-major students with a broad range of introductory courses of topical interest.

**Courses which may be dropped**
None.

C. **Provide a Statement of the Impact of this Course on Other Departments…**

**Clearly State the Impact of this Course on Course Taught in Other Departments**
No impact on courses taught in other departments is anticipated. This course does not duplicate the content of courses taught in other departments. There is no anticipated effect on prerequisites.

**Would Approval of this Course Change the Total Number of Credits Required by any Major…**
No.

**Impact on the Major or Minor of Another Department**
None anticipated.

D. **University Studies Program**
If approved by the CPPS, this course will be submitted for approval in the University Studies program as a course satisfying the Arts & Science Core: Nature Science requirements.