

UC 8614 OSF

CBM003 ADD/CHANGE FORM

Undergraduate Council
 New Course Course Change
 Core Category: Nat Sci Effective Fall 2006

or Graduate/Professional Studies Council
 New Course Course Change
 Effective Fall

1. Department: Geosciences College: NSM
2. Person Submitting Form: James Lawrence Telephone: 713-743-3410
3. Course Information on New/Revised course:
 - Instructional Area / Course Number / Long Course Title:
GEOL / 1350 / Introduction to Meteorology
 - Instructional Area / Course Number / Short Course Title (30 characters max.)
GEOL / 1350 / INTRO TO METEOROLOGY
 - SCH: 3.00 Level: FR CIP Code: 4004010002 Lect Hrs: 3 Lab Hrs: 0

RECEIVED OCT 13 2005

APPROVED FEB 22 2006

4. Justification for adding/changing course: To meet core curriculum requirements
5. Was the proposed/revised course previously offered as a special topics course? Yes No
If Yes, please complete:

- Instructional Area / Course Number / Long Course Title:
GEOL / 1397 / Introduction to Meteorology
- Content ID: 297189 Start Date (yyyy3): 20053

6. Is this course offered for undergraduate credit only? Yes No

7. Authorized Degree Program(s): BS Environmental Science
 - Does this course affect major/minor requirements in the College/Department? Yes No
 - Does this course affect major/minor requirements in other Colleges/Departments? Yes No
 - Are special fees attached to this course? Yes No
 - Can the course be repeated for credit? Yes No

8. Grade Option: Letter (A, B, C ...) Instruction Type: lecture

9. If this form involves a change to an existing course, please obtain the following information from the course inventory: Instructional Area / Course Number / Long Course Title

____ / ____ / ____
 • Start Date (yyyy3): _____ Content I.D.: _____

10. Proposed Catalog Description:
³Cr: (3-0) • ~~Prerequisites~~ ³Corquisite: MATH 1310 or 1311 • Description (30 words max.): Basic concepts and principles of meteorological processes including clouds and precipitation, local and global circulation, air masses and fronts, and severe weather systems.

11. Dean's Signature:  Date: 10 Oct '05

Print/Type Name: Ian Evans

RECEIVED DEC 13 2005

U N I V E R S I T Y *of* H O U S T O N

CORE CURRICULUM COURSE REQUEST

Originating Department/College: Geosciences / NSM
Person making request: James Lawrence Telephone: X33410
Dean's signature: _____ Date: 12/13/05

I. General Information:

Course number and title: GEOL 1350 Introduction to Meteorology

Complete catalog description (NOT required if attached to CBM 003 form):

Category of Core for which course is being proposed (mark only one):

- Communication
- Communication: Writing Intensive Experiences in the Disciplines
- Mathematics
- ✓ Mathematics/Reasoning (IDO)
- Natural Sciences
- Humanities
- Visual/Performing Arts Critical
- Visual/Performing Arts Experiential
- Social/Behavioral Sciences
- U.S. History
- American Government

II. Objectives and Evaluation (respond on one or more separate sheets):

Call 3-0919 for a copy of "Guidelines for Requesting and Evaluating Core Courses" or visit the website at www.uh.edu/academics/corecurriculum

- A. How does the proposed course meet the appropriate Exemplary Educational Objectives (see **Guidelines**). Attach a syllabus and supporting materials for the objectives the syllabus does not make clear.
- B. Specify the processes and procedures for evaluating course effectiveness in regard to its goals.
- C. Delineate how these evaluation results will be used to improve the course?

SVP. Effective 9/20/05. Replaces all previous forms, which may no longer be used.

Course Name: Introduction to Meteorology, GEOL 1397 (to be GEOL 1350)

Instructor: Dr. Sharon Zhong, Associate Professor, Department of Geosciences

A. How does the proposed course meet the appropriate Exemplary Education Objectives

Meteorology is a topic that easily generates interest in and appreciation of natural science. In recent years, weather and climate have become front page news from such events as Forest Fire in California and Hurricane Rita in the Gulf Coast. The dynamic nature of the atmosphere seems to demand our attention and underrating more these days than ever before and the interest in meteorology has been growing.

This course introduces students to basic concepts and principles of a wide range of meteorological phenomena including clouds and precipitation, local and global circulations, air masses and fronts, El Nino and jet streams, and severe weather systems such as tornadoes and hurricanes. The course emphasizes the understanding of dynamical principles governing weather phenomena and encourages students to observe the atmosphere and apply immediately their understanding to answer questions about weather and climate that arise in our day-to-day lives. The course is designed for non-science majors by conveying meteorological concepts in a visual, practical, and non-mathematical manner, while still providing some advanced topics with detailed mathematics for students majoring in science.

The following is the current Syllabus

GEOL 1397 INTRODUCTION TO METEOROLOGY

COURSE SYLLABUS Fall 2005

Dr. Sharon Zhong
Department of Geosciences
Rm 227, Science Building (502 on Campus Map)
Phone: 713-743-9130, Email: szhong@uh.edu

Office hours: Mondays 2:30 to 4:00 pm and Wednesdays 12:00-1:00 pm

Textbook (Required):

Title: Essentials of Meteorology
Author: Donald Ahrens
Publisher: Brooks/Cole, Thompson Learning
ISBN: 0-534-42264-0

Course Web Address

www.vnet.uh.edu
Click on VCLASS
Click on Geoscience Folder
Click on GEOL1397 Introduction to Meteorology

Course Objectives:

- To be able to describe general characteristics of a wide range of meteorological processes and weather phenomena
- To develop basic understanding of physical principles for these phenomena.

- To develop ability to make quantitative calculations using elementary principles of atmospheric dynamics and physics
- To develop ability to critically examine reports on weather and climate
- To become conversant in issues related to weather and climate, e.g., air pollution and climate change

Assignments and examinations:

There will be three exams during the semester and a comprehensive final exam. The exams will be a combination of multiple choices and short essay questions, and will cover materials from lectures and lab/homework assignments. As a general rule, a makeup exam will be offered only under extraordinary circumstances. If you miss an exam, your final exam grade will be used to substitute for the missed exam grade (proportionally).

Grading policy:

First three exams: 15% each, a total of 45%.

Final: 25%

Lab and homework assignments: 25%

Attendance (including the field trip): 5%

A: 90-100 B: 80-89 C: 70-79 D: 60-69 F: 0-59

Course Schedule (Tentative, subject to change during the semester)

Dates	Lectures and Labs
Aug 22	Lecture 1, Introduction
24	Lecture 2, Weather map basics – how to read surface and upper air weather maps
29	Lecture 3, The earth's atmosphere (Chapter 1)
31	Lab 1, Weather maps
Sept. 7	Lecture 4, Warming the earth and the atmosphere (Chapter 2)
12	Lecture 5, Air temperature (Chapter 3)
14	Lab 2, Temperature and temperature changes
19	Exam 1
21	Lecture 6, Humidity (Chapter 4)
26	Lecture 7, Condensation and clouds (Chapter 4 and 5)
28	Lecture 8, Stability and cloud development (Chapter 5)
Oct. 3	Lab. 3, Humidity, stability
5	Lecture 9, Precipitation (Chapter 5)
10	Lecture 10, Air pressure and winds (Chapter 6)
12	Lecture 11, atmospheric circulation (small scale) (Chapter 7)
17	Lecture 12, Atmospheric circulations (large scale), (Chapter 7)
19	Lab. 4, Atmosphere in motion
24	Exam 2
26	Lecture 13, Air masses and fronts (Chapter 8)
31	Lecture 14, Mid-latitude cyclones (Chapter 8)
Nov. 2	Lab 5, Weather fronts and cyclones
7	Lecture 15 Thunderstorms and tornadoes (Chapter 10)
9	Lecture 16 Hurricane

14	Field Trip
16	Lecture 17. Weather forecasting (Chapter 9)
21	Exam 3
28	Lecture 18. Global climate (Chapter 13)
30	Lecture 19. Meteorology and air pollution (Chapter 12)
Dec. 2	Semester Review

B. Specify the process and procedures for evaluating course effectiveness in regard to its goals.

The effectiveness of the course is regularly evaluated by frequent solicitations of feedback from students and by giving in-class quizzes and exams (three exams plus final). A detailed questionnaire is given at the end of the semester for students' comments on the weakness and strengths of various teaching techniques employed during the semester. Feedback and suggestions from colleagues will also be solicited by inviting them to attend lectures and lab sessions.

C. Delineate how these evaluation results will be used to improve the course

The instructor will use the feedback and questionnaires to improve the teaching of the course. For example, the current syllabus includes 5 labs as part of the course designed to help students learn the concepts by doing hands on experiments. Based on the feedback from the students about the effectiveness of these in-class labs, the lab sessions may be reduced or increased in the coming semester. The course also includes a field trip to the National Weather Service office and a guest lecture from a TV forecaster. The students' feedback on these activities will help determine whether to further expand such activities.