

ATMOSPHERIC & OCEANIC SCIENCES 100: WEATHER AND CLIMATE (3 credits)

LECTURE 1 2004 EIGHT-WEEK SUMMER SESSION

LECTURES: 10:20–11:35 AM, MTWR; Rm. 811 Meteorology and Space Science Bldg.

INSTRUCTOR: Dr. Edward J. Hopkins

OFFICE: Rm. 1407 Meteorology and Space Science (262–1605 or 262–2828)

OFFICE HOURS: 1:00–2:00 PM, MTWR (or by appointment)

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This introductory level course explores our earth's atmospheric environment. Emphasis is placed upon providing you with a deeper appreciation of the various atmospheric phenomena that you may witness. You will become acquainted with some of the more important economic and social aspects of weather and climate. You will see how meteorology has evolved as a science with the development of various tools and concepts that permit rational description of various weather and climatic phenomena.

Some knowledge of geography and the basic concepts of high school algebra is assumed. Since meteorology is a visual science, slides, videos and current weather map discussions will be routinely used. The materials covered in class will be stressed on the examinations, with the text serving as a background resource. Therefore, attendance at each of the **FOUR** regularly scheduled lectures per week (75 minutes each) is **strongly recommended**. Several homework assignments will be given to help you prepare for the examinations; these homework assignments represent 15% of your course grade. If you are having trouble with the course, please ask your instructor for help as soon as possible.

You are encouraged to use the World Wide Web (WWW) as a learning tool. You will need to access the Web for part of written assignments. The official address for our ATM OCN 100 home page is:

<http://www.meteor.wisc.edu/~hopkins/aos100>

By the end of the course you should be able to:

- Interpret current weather maps appearing on television, or in the newspaper, locating and identifying the broad-based air pressure, wind, cloud and temperature patterns.
- Correctly use and explain selected fundamental terminology employed by meteorologists (*e.g.*, dewpoint, barometric pressure, cyclones, *etc.*).
- Identify various weather instruments and instrument platforms currently used to monitor the weather and measure atmospheric properties.
- Explain why the atmosphere helps make planet Earth unique in our solar system.
- Trace the flow of energy into and out of the Earth-atmosphere system.
- Describe the role of water and the hydrologic cycle in the planetary system.
- Distinguish the characteristic sizes of various atmospheric systems.
- Explain, in general terms, the reasons for atmospheric motions.
- Identify some of the fundamental conceptual models developed by meteorologists to explain atmospheric processes.
- Make simple, short-term weather forecasts for your location, based upon your observation of the sequence of winds, clouds and changes in air temperature and pressure.
- Distinguish the various severe weather phenomena and appropriate advisories, watches and warnings issued by the National Weather Service for your safety.
- Appreciate the challenges facing the atmospheric scientist.
- Locate useful sources of weather and climatological information for your locale.

TENTATIVE GRADING SCHEME:

Your course grade depends upon the numerical point distribution accumulated from each of the following items, using the *approximate* weighting factors:

3 rd Week Exam	(Thursday, 1 July 2004)	25%
6 th Week Exam	(Thursday, 22 July 2004)	25%
8 th Week (Final) Exam	(Thursday, 5 August 2004)	35%
Homework		15%
Total		100%

REQUIRED TEXT:

Moran, J.M, 2002: *Online Weather Studies*. (2nd ed.) American Meteorological Society. Washington, DC. 416 pp. (ISBN 1-878220-50-0)

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