

270.224 OCEANS AND ATMOSPHERES
Spring 2006
Monday, Wednesday, and Friday 1:00-2:00

FACULTY

Prof. T. Haine, 329 Olin Hall, ext 67048, Thomas.Haine@jhu.edu

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COURSE DESCRIPTION

This course is a broad survey course of the Earth's oceans and atmosphere, and their role in climate. Topics covered include waves, tides, ocean and atmosphere circulation, weather systems, tornadoes and hurricanes, El Nino, and climate change.

Details of the topics we will cover are in the Schedule below.

BOOKS

The following two books (which may be purchased as a package at the bookstore) are strongly recommended (but not essential):

1. "Essentials of Oceanography" by T. Garrison [ISBN 0534377327].
2. "Essentials of Meteorology" by C. D. Ahrens [ISBN 0534372007].

These and the following books are on reserve in the library:

1. "Oceanography: A view of the Earth" by Gross and Gross [GC11.2.G76 QUARTO]
2. "Oceanography" by Summerhayes and Thorpe. [QG11.2.O22]
3. "Introduction to Ocean Sciences" by Segar. [QG11.2.S443 QUARTO]
4. "Meteorology Today" by Anthes. [QC861.A581 QUARTO]
5. "The Atmosphere" by Lutgens and Tarbuck. [QC861.2.L87]
6. "Meteorology: The atmosphere ..." by Moran and Morgan. [QC861.2.M625]

ASSESSMENT

There will be two 1-hour exams, and four homework assignments. Each exam is worth 30% of the final grade and each homework 7.5%. Attendance will be collected during 10, randomly selected, classes and attendance at each of these 10 classes will count 1% point towards final grade.

The professors and teaching assistant are available to answer specific questions on course material. Please approach us at the end of class or send an email to arrange an appointment. As appropriate, the TA may schedule special question and answer sessions.

The strength of the university depends on academic and personal integrity. In this course, you must be honest and truthful. Ethical violations include cheating on exams, plagiarism, reuse of assignments, improper use of the Internet and electronic devices, unauthorized collaboration, alteration of graded assignments, forgery and falsification, lying, facilitating academic dishonesty, and unfair competition.

In addition, the specific ethics guidelines for this course are: (1) Homework assignments must be completed without any collaboration with anyone else. All printed and online information source, other than the Garrison and Ahrens texts should be accurately cited. (2) Tests must be completed without any collaboration with anyone else with strict adherence to the rubric of the test.

Report any violations you witness to the instructor. You may consult the associate dean of students and/or the chairman of the Ethics Board beforehand. See the guide on "Academic Ethics for Undergraduates" and the Ethics Board web site (<http://ethics.jhu.edu>) for more information.

SCHEDULE

- 30 Jan, Week 1: Introduction to the Ocean, Seawater. (*Garrison Chp. 6*)
- 6 Feb, Week 2: Introduction to the Atmosphere (*Ahrens Chp. 1*)
- 13 Feb, Week 3: Waves. (*Garrison Chp. 9*)
- 20 Feb, Week 4: Tsunami (*Garrison Chp. 9*)
- 27 Feb, Week 5: Tides (*Garrison Chps. 10*) (Homework 1)
- 6 Mar, Week 6: Temperature and Seasons (*Ahrens Chps. 2 and 3*)
- 13 Mar, Week 7: Air Pressure and Winds (*Ahrens Chps. 6 and 7*) (Homework 2)
- 20 Mar, Week 8: SPRING BREAK
- 27 Mar, Week 9: **TEST**. Tornados and Hurricanes (*Ahrens Chps. 10 and 11*)
- 3 Apr, Week 10: Ocean Circulation. (*Garrison Chp. 8*)
- 10 Apr, Week 11: El Nino (*Garrison Chp. 8*) (Homework 3)
- 17 Apr, Week 12: Global Warming (*Ahrens Chp. 14.*)
- 24 Apr, Week 13: Ozone Depletion (*Ahrens Chp. 12*) (Homework 4)
- 1 May, Week 14: Review, **TEST**

Homeworks are due on the Friday of each week indicated. Tests will take place on the Wednesday of each week indicated.