

# 270.108 OCEANS AND ATMOSPHERES

Fall 2009

Tuesday and Thursday 1:30-2:50

## FACULTY

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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.

There are no pre-requisites for this class. It is a Natural Sciences class.

**Format:** The course will be taught as 80min lectures. There will also be review sessions and discussion of graded homeworks. Class materials will be posted to:

<https://jshare.johnshopkins.edu:443/thaine1/270.108%20oceans%20and%20atmospheres>

We will use the CPS "clickers" in this course, available at the bookstore. The class key is: G546071176.

Any student with a disability who may need accommodations in this class must obtain an accommodation letter from Student Disability Services, 385 Garland, (410) 516-4720, studentdisabilityservices@jhu.edu.

## BOOKS

The required text book is

*"Oceans and Atmospheres for JHU 207.108"*, Cengage Learning [ISBN-10: 1424086604], \$142.85, available at the bookstore (note that the book incorrectly is titled "207.108," not "270.108").

This book contains chapters out of the following two books:

- "Essentials of Oceanography" by T. Garrison [GC11.2.G36 2009 QUARTO].
- "Meteorology Today" by C. D. Ahrens [QC861.3.A47 2009 QUARTO].

These, and the following books, are available at the library:

- "Oceanography: A view of the Earth" by Gross and Gross [GC11.2.G76 QUARTO]
- "Oceanography" by Summerhayes and Thorpe. [QG11.2.O22]
- "Introduction to Ocean Sciences" by Segar. [QG11.2.S443 QUARTO]
- "Essentials of Meteorology" by Anthes. [QC861.3.A39 2008 QUARTO]
- "The Atmosphere" by Lutgens and Tarbuck. [QC861.2.L87]
- "Meteorology: The atmosphere ..." by Moran and Morgan. [QC861.2.M625]

Almost all of the material in *"Oceans and Atmospheres for JHU 207.108"* is also contained in these other books (among others).

## ASSESSMENT

There will be two exams – a mid-term and a final – and four homework assignments. Each exam is worth 30% of the final grade and each homework 7.5%. *Attendance will be collected during 13, randomly selected, classes, and attendance at each of these classes will count 1% point towards the final grade, up to a maximum of 10%.* Homeworks handed in late without an acceptable reason will be penalized, or returned un-marked, at the instructors' discretion. Please inform the instructors *before* the homework deadline if you anticipate a delay in submitting your work.

In addition, students are expected to read independently on the topics being taught in class. The relevant sections of the course text are indicated in the schedule below.

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.

**Ethics:** 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

- 1 Sept, Week 1: NO CLASS, Introduction to the Ocean, Seawater. (*Oceanography Chp. 1, Appendices*)
- 8 Sept, Week 2: Introduction to the Ocean (cont'd)
- 15 Sept, Week 3: Introduction to the Atmosphere (*Meteorology Chp. 1*)
- 22 Sept, Week 4: Ocean waves (*Oceanography Chp. 3*)
- 29 Sept, Week 5: Ocean tides (*Oceanography Chp. 4*) (Homework 1)
- 6 Oct, Week 6: Ocean circulation (*Oceanography Chp. 2*) DROP DEADLINE
- 13 Oct, Week 7: Ocean circulation cont'd. El Nino Southern Oscillation (*Oceanography Chp. 2*)
- 20 Oct, Week 8: Review, **EXAM** (Homework 2)
- 27 Oct, Week 9: Global Energy Balance (*Meteorology Chp. 2*)
- 3 Nov, Week 10: Atmospheric Temperature and Pressure (*Meteorology Chp. 3, 4*)
- 10 Nov, Week 11: Global Winds (*Meteorology Chp. 4, 5*) (Homework 3)
- 17 Nov, Week 12: Climate Change (*Meteorology Chp. 7*.)
- 24 Nov, Week 13: Coasts, THANKSGIVING (*Oceanography Chp. 5*)
- 1 Dec, Week 14: Hurricanes, Review (*Meteorology Chp. 6*) (Homework 4)

Homeworks are due on the Tuesday of each week indicated. The mid-term exam will take place on the Thursday indicated, and the final exam will take place at the time assigned by the Registrar during the exam period.