OCOR 5608 Introduction to Physical Oceanography

Fall 2014 - August 25 through November 14

Faculty:

Kristi Foster, PhD

All email correspondence should be initiated through Blackboard. (See Send Email link at the left of the screen.) If Blackboard is unavailable, you may contact your professor at kfoster@nova.edu.

Once the term has started, all course-related communication takes place within BlackBoard either as an announcement, by email, or as a Discussion posting. Any official NSU email communication outside of the course should be sent from, and will be sent to, the student's NSU Sharklink email address (e.g. xxxxx@nova.edu). Emails sent from other accounts may be blocked as spam.

If you are unable to contact your professor regarding an important matter, please inform the distance education office at the Oceanographic Center by telephone (toll-free at 1-800-541-6682 ext 23821 or locally at 954-262-3621) or by email (oconline@nova.edu).

Pre-requisites

Algebra and Physics

Textbooks

- *Ocean Circulation* (Second Edition) by A. Colling. Published by The Open University Course Team, 2001. Referred to in this syllabus as "OC".

- *Waves, Tides and Shallow-Processes* (Second Edition) by J. Wright, *et al.* Published by the Open University Course Team, 2000. Referred to in this syllabus as "WTS".

The textbooks are technically "out of print", meaning new hardcopies are not being made. However, new and used textbooks can be found at a variety of online sources (and possibly at the campus bookstore -- call before you go). Electronic versions are available at www.amazon.com for Kindles. The *Ocean Circulation* text is listed on www.scribd.com as one of its downloadable books for a $9 membership fee. Please let your fellow classmates know if you find other reasonably priced sources.
Course Description

This course is intended to give students an understanding of how wind, radiation, gravity, friction, and the Earth's rotation determine the ocean's temperature, salinity patterns and currents. Some important processes we will study include the heat budget of the oceans, exchange of heat with the atmosphere and the role of the ocean in climate, surface mixed layer, waves in the ocean, geostrophy, Ekman transport, and Rossby waves. Students will learn how to explain physical features of the ocean ranging from microscopic turbulence to global circulation.

Each week the students will be expected to read the assigned textbook chapter. Supplemental material is provided in the form of "Lectures", Exercises, or Videos. All supplemental material is also required. Weekly quizzes will help the students monitor their comprehension of the respective topic. Weekly Discussions are meant to relate topics to the “real world”. Students will write and peer review term papers. The final exam will be cumulative and largely based on the material emphasized in the weekly quizzes.

Learning Objectives

1. Calculate Coriolis parameter, Ekman boundary layer depth, and Brunt-Vaisala frequency.
2. Explain intensification of a western boundary current.
3. Identify coastal upwelling areas on satellite images of sea surface temperature and color.
4. Identify different water masses and their sources from global distributions of temperature and salinity.
5. Interpret tidal sea level record.

Course Syllabus (See Weekly Assignments under My Course Content for more information)

Week 1

- Textbook: Introduction (OC Chapter 1)
- Lecture: What is physical oceanography and why should I care?
- Quiz
- Discussion

Week 2

- Textbook: The Atmosphere and the Ocean (OC Chapter 2)
- Lecture: Seawater Properties
- Quiz
- Discussion
Week 3

- Textbook: Ocean Currents (OC Chapter 3)
- Lectures: Rotation and Geostrophy; Ocean Dynamics and Circulation
- Exercise: Nike Shoe Investigation
- Quiz
- Discussion

Week 4

- Textbook: The North Atlantic Gyre (OC Chapter 4)
- Video: The Gulf Stream and the Next Ice Age
- Quiz
- Discussion
- Term Paper Topic Due 21Sep2014

Week 5

- Textbook: Other Major Current Systems (OC Chapter 5)
- Video: El Niño
- Quiz
- Discussion

Week 6

- Textbook: Global Fluxes and Deep Circulation (OC Chapter 6)
- Articles: Ocean Circulation and Climate Change
- Quiz
- Discussion
- Term Paper Outline and References due 05Oct2014

Week 7

- Textbook: Waves (WTS Chapter 1)
- Videos: Mega Tsunami; Freak Waves
- Quiz
- Discussion

Week 8

- Textbook: Tides (WTS Chapter 2)
- Exercise: Tide Charts
- Quiz
- Discussion
Week 9

- Textbook: Estuaries (WTS Chapter 6)
- Lecture: Estuaries and Coastal Processes
- Quiz
- Discussion
- **Term Paper Due 26Oct2014**
- **Peer Review Assignments to be Issued by Professor**

Week 10

- Extra Credit Discussions available this week
- Reviews: Three papers required, up to three more allowed for extra credit
- **Peer Review of Term Papers Due No Later than 02Nov2014**

Week 11

- Review for cumulative final exam.
- Students may resubmit term paper based on comments from professor and peers. (Optional)

Week 12

- **Final Exam must be completed by Friday, November 14.**

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**Course Policies**

Students should familiarize themselves with the policies and procedures of the Oceanographic Center as described in the catalog found at [http://www.nova.edu/ocean/academics/course-catalog/index.html](http://www.nova.edu/ocean/academics/course-catalog/index.html)

The following are specific to OCOR 5608 Physical Oceanography.

**Point System**

Your grade will be determined by the sum of all points earned for quizzes, exercises, Discussion participation, term paper, peer reviews and the final exam. The maximum possible points is 490.

- Quizzes: Weekly, (205 points)
- Exercises: Nike Shoe Exercise, Tide Charts Exercise (15 points)
- Discussion Participation (75 points): See Discussion Guidelines
- Term Paper (75 points): See Term Paper Guidelines
- Peer Review of Term Papers (15 points)
- Final Exam: Cumulative, anticipate 110 points

**Grading Scale**

- A: 90 - 100%
- B: 80 - 89%
- C: 70 - 79%
- D: 60 - 69%
- F: Less than 60%
A grade of incomplete (I) must be requested from the instructor, have the Director’s approval, and be accompanied by a completed contract specifying outstanding course requirements and completion dates. Completion of the course graded incomplete must occur within one term (or 3 months) of the end of the course and the incomplete be changed to a different grade. If the course is not completed in 3 months, or the student has not withdrawn and received a W, the incomplete will automatically be converted to a grade of F. Under unusual circumstances students may request a time-extension to complete the course. Such requests must be submitted to, and approved by, the Director of Academic Programs prior to the end of the 3-month time limit. There are no exceptions to this rule. Securing the completed and signed incomplete contract forms is the responsibility of the student.

Quizzes

These are to be CLOSED BOOK, CLOSED NOTES, CLOSED INTERNET. To help keep everybody honest, the time allowed to take each quiz will be short (on average 1-2 minutes per question). The condensed timeframe will not allow you adequate time to try to look up answers. Either you know the material or you don’t.

Quizzes are randomized to promote honesty. One student’s Question #1 will be different than another student’s Q#1. Similarly, within a multiple choice question, the answers are ordered differently by the computer. For calculations, the computer works within assigned ranges to give each student different variables. In other words, don’t ask your fellow students what they got for a particular question and don’t try to use the answers from a past year’s quiz.

Quizzes will be available online for an entire week. Only one attempt is allowed per quiz. You should pick a time when you can take each quiz without interruption. No make-up quizzes will be allowed. You can take a quiz early if you know that you will be unavailable during the scheduled week.

Final Examination and Proctoring

The Oceanographic Center requires that at least one test be proctored during each online course. For this course, the chosen test will be the final exam.

A proctor is an impartial person, usually in a position with some authority, who is not related to you. The role of the proctor is to monitor you as you write a test to ensure your identity and the integrity of the process. The proctoring protocol for the Phys Oc final exam is as follows:

- All arrangements must be finalized with the proctoring center and provided to the Distance Education office at least one full week before the start of finals week. (Please email details to oconline@nova.edu, as that office will be responsible for distributing and collecting final exams to/from the proctors.)
- If you live close to the Oceanographic Center, you can arrange to come to the OC to have your test proctored, either with one of the librarians on site (Jaime Goldman, hj Jaime@nova.edu, telephone 954 262-3681) or with Jazmin Zea, Outreach and Student Services Coordinator (email jz164@nova.edu, telephone 954 262-3622). Please arrange
directly with them for a convenient time. You can find the library hours and other details at: http://nova.campusguides.com/oclibrary.
• If it is not convenient for you to come to the OC, you can find someone in your community to proctor who meets the definition above. They can be a supervisor at your workplace, a librarian, at your local community college or university, doctor, minister, etc. You can also check the website of the National College Testing Association to find a proctoring organization near to you. (Please see: http://www.ncta-testing.org/cctc/index.php). You must arrange to take the final at a location where you will have uninterrupted internet access on a computer.
• If you have audio-video capabilities with your computer, you can arrange with ProctorU to be proctored virtually at your computer. There is a cost associated with this service and you will need to make an appointment to use this service at least 72 hours before the exam time.

Attendance

Students are expected to actively participate online from the first week of class until the end of term. If a student anticipates that s/he may be unable to access the online course for several days, s/he should notify the instructor in advance to make alternate arrangements for any missed coursework. Similarly if an unanticipated event such as illness or an emergency takes the student away from coursework, s/he should inform their instructor.

Course Communication

Email: Use the email tool only for private, personal, one-to-one communication with a specific individual or groups of individuals within the class. Solicitations will not be tolerated. Please do not send course related emails to the instructor's email address; all work should be posted on BlackBoard. Assignments sent to the instructor's email will not be accepted.

Alternate Communication: In the event that the course communication tools are unavailable for more than 24 hours, the instructor will communicate with students (if necessary) via their non-BB Nova email addresses.

Discussions: Use the Cyber Cafe discussion forum to post questions that might be of general interest to all students such as questions about assignments, tests, etc. Feel free to respond to other students if you think you can help them. Remember - we are all in this together and we can learn from each other. Remember that the discussion tool is public - everyone will be able to view posts and responses.

Faculty Response Policy: Communications within BlackBoard will typically be answered on Mondays, Thursdays, and Saturdays. It is recommended that you post course related questions in the discussion area. If you need info related to a test or assignment, plan ahead and submit your questions well in advance of the due date. Your instructor is not online 24 hours per day, so please allow time for response.
Netiquette: In all online communication, it is expected that all students will follow rules of online "netiquette". Netiquette is a set of rules for polite online behavior that all members of this class are expected to follow. Read some general netiquette rules here. Basically, these rules say "be respectful and be polite to each other" and "be patient". No one is perfect and we all have different approaches to life, work, and school.

- Individuals who violate the netiquette policy or engage in disruptive online behaviors such as flaming (posting disrespectful or hostile comments), posting inappropriate comments, or shouting (posting messages using all capitals) may have their course access privileges revoked and/or they may be referred to the Student Dean. Students who continue to engage in unacceptable online behavior even after being warned, may be permanently denied access to the course and/or may receive an F for the course.

- Please don't use email short hand like ROTFLO (rolling on the floor laughing out loud) or BTW (by the way) - not everyone knows what these abbreviations mean. If you want to use emoticons (smileys) to convey feelings, please stick with the basics happy :-) sad :( or wink ;-) . Others are less well known and are subject to different interpretations. The idea is to be clear in your communications.

- Privacy Notice: Course access records, quiz scores, email postings, and discussion postings will be stored. This is one more reason to make sure that your communications adhere to the netiquette policy.

Withdrawals and Refund

Masters students may withdraw from a course at any time before the fourth week of class and may receive a partial refund. A request for tuition refund must be made in writing at the time of withdrawal to the distance education office at the Oceanographic Center at oconline@nova.edu (Do not send such requests to your instructor). Refunds will be made solely at the option of the university and will be based on the legitimacy of the reason for withdrawal. If granted, refunds are adjusted as follows:

- Before the first class meeting/week of class 100%
- Before the second class meeting/week of class 75%
- Before the third class meeting/week of class 50%
- Before the fourth class meeting/week of class 25%
- Thereafter 0%

Technical Help

If you encounter technical problems, please contact the NSU Help Desk at: http://www.nova.edu/help/index.html. Call: (954) 262-HELP (4357) or Toll Free: (800) 541-NOVA (6682) x24357.

Library and Study Support

The Oceanographic Center is fortunate to have its own dedicated library and librarians on site to assist in-house and distance students. Please explore the learning resources, including the extensive full-text
journals, and don’t hesitate to email or telephone to speak with a librarian. You can find details at: http://nova.campusguides.com/oclibrary.

**Academic Honesty/Plagiarism**

Read Section 5.0 Student Conduct of the [catalog](http://nova.campusguides.com/oclibrary) for details. The essential points are:

- Assignments such as exams, tests, projects, term papers, etc., must be the original work of the student.
- All academic work submitted for credit or as partial fulfillment of course requirements must adhere to the specific accepted reference manuals and rules of documentation (e.g. Chicago Manual of Style). It is plagiarism to represent another person’s work, words, or ideas as one’s own without use of a center-recognized method of citation.
- Giving or allowing one’s work to be copied, giving out exam questions or answers, or releasing or selling term papers is prohibited.
- Violations of academic responsibility include, but are not limited to:
  - plagiarism
  - any form of cheating
  - conspiracy to commit academic dishonesty
  - misrepresentation
  - bribery in an attempt to gain an academic advantage
  - forging or altering documents or credentials
  - knowingly furnishing false information to the institution
  - falsifying excuses for missing attendance

For clarification on plagiarism and copyright, students are referred to the online overview provided by the library at: [http://www.nova.edu/library/dils/lessons/plagiarism/](http://www.nova.edu/library/dils/lessons/plagiarism/)

Faculty members at the Oceanographic Center have access to comprehensive web-based Turnitin.com plagiarism prevention software. Registered students may request to submit their papers to Turnitin.com, prior to assignment submission, as a learning tool.

The institution reserves the right to require a student to withdraw at any time for misconduct as described above. It also reserves the right to impose probation or suspension on a student whose conduct is determined to be unsatisfactory.

**Class Rules**

By remaining enrolled in this course, you agree to abide by the class rules set forth herein.