

The Johns Hopkins University
Krieger School of Arts and Sciences
Advanced Academic Programs:
Environmental Science and Policy Program
Fall Term 2018

SYLLABUS
OCEANIC AND ATMOSPHERIC PROCESSES
(420.608.81)

Instructor: Kathryn Schubel

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If you need to be in touch with me outside of Blackboard, email is the best way to reach me. Include the Title of the course in the subject field (JHU Oceans) and the **Section (.81)** you are in. You can expect to hear back from me with 48 hours. If you don't hear from me within that time frame please don't hesitate to send another email. I am in the Pacific Time Zone. Please call between 11:00 am and 9:00 pm ET.

Course Description: In this course, students study the oceans and the atmosphere as interrelated systems. The basic concepts of air masses, water masses, winds, currents, fronts, eddies, and storms are linked to permit a fundamental understanding of the similar nature of oceanic and atmospheric processes. Among the course's topics are weather forecasting, global climate change, marine pollution, and an introduction to applied oceanography.

Course Goals and Learning Objectives: This course will provide you with a broad introduction to the fluid envelopes that surround the earth—the world ocean and the atmosphere. We will investigate oceanic and atmospheric processes and the interactions between the two. We will also consider coastal processes, coastal zone management, marine ecosystems and marine pollution.

Over the course of the semester we will:

- Explore the concept of One World Ocean.
- Evaluate ocean exploration tools.
- Explore and evaluate the Earth's surface—distribution of land and water, configuration and evolution of ocean basins and their impact on seawater composition and sea level.
- Explore and evaluate seawater and its role in the water cycle.
- Evaluate the atmosphere, atmospheric motion and its role in weather and climate.
- Explore and evaluate ocean-atmosphere interactions, ocean circulation and its drivers and their role in global climate.
- Explore and evaluate physical ocean processes—waves, tides.
- Explore and evaluate coastal ecosystems.
- Explore and evaluate the role and impact of marine organisms in the world ocean.

You will leave the course a more ocean literate scientist armed with strategies to help others become more Ocean literate, and the inspiration to put those strategies into action.

Required Text: *Essentials of Oceanography 12th Edition* (© 2017), by Al Trujillo and Harold Thurman, Pearson Publishers.

You may also use the 10th or 11th edition of this book if it is more cost effective.

Course Protocols: Course Protocols:

Changes to the Course

Any changes to the course will be announced in the Announcements section. Please check announcements every time that you log into the Bb.

Communication with Professor or Other Students

The majority of communication will take place within the Discussion forums. When you have a question about an assignment or a question about the course, please contact me, or post your question in the “Syllabus & Assignment Question” forum.

In all online communication it’s important to follow proper rules of netiquette—network etiquette. "Etiquette" means the social and culture norms of communicating with others in a proper and respectful way. In other words, netiquette is a set of rules for behaving and interacting properly online. The Netiquette “Core Rules” linked below are a set of general guidelines for cyberspace behavior. They probably won't cover all situations, but they should give you some basic principles to use in communicating online. For Netiquette Core Rules visit this web page: www.albion.com/netiquette/corerules.html

Emails

When you send an e-mail message to me or to another participant in the course, please observe the following guidelines:

- Include the title of the course in the subject field (JHU Oceanography).
- Keep messages concise; check spelling and grammar.
- Sign your full name (sender’s email is not always obvious).

Grades:

Your grade in this course will be based on the following formula:

Problem Sets (3@60 points)	180 points
Midterm exam	185 points
Final exam	185 points
Discussions (10 discussions@20 points)	200 points
Project and Presentation	250 points
TOTAL=	1000 points

Grading Scale

980-1000 points	A+
940-979 points	A
900-939 points	A-
880-890 points	B+
840-870 points	B
800-839 points	B-
700-799 points	C
< 700 points	F

Course Work:

There are a total of 1000 points in the course, which are divided between problem sets, exams, discussions and a project and presentation. See details of these course elements below.

Problem Sets

There will be 3 problem sets (60 points each) for a total of 180 points or 18% of your final grade. Problem sets will include both qualitative and quantitative questions. You should write out answers in complete sentences and paragraphs where appropriate and show your work if calculations are required. You should work on these on your own. You may use outside sources (written) in completing these assignments. You will upload your problem sets through Blackboard. This may require that you scan your documents and save them as either MS Word or PDF documents. Assignments will be accepted up to three days after the due date. They will be penalized 10% for every day they are late. Please contact in advance me if you will have difficulty getting your problems sets in on time and I will work with you.

Exams

There will be two **closed-book, closed-note, 3-hour** exams, a midterm and a final. Each exam is worth 185 points or 18.5% of your final grade. Examinations may include the following types of questions: short answers, essays, and labeling diagrams. You will take an exam during a single 3-hour block anytime during the exam week. Exam due dates are shown on the syllabus. Please return your completed exam to me as soon as you are finished. This facilitates the grading process on my end. You will upload your exam to Turnitin. Late exams will NOT be accepted unless prior arrangements have been made.

Discussions

There will be on-line discussions each week, except finals week. You must participate in at least 10 discussions over the course of the semester. This means you may miss three discussions with no negative repercussions. You will receive a grade of zero for those weeks in the gradebook, but do not despair the discussion average gradebook column is set up to delete the three lowest grades. I would ask everyone to participate in discussions during Student Presentation Weeks (Weeks 12 and 13) as a show of support for one another. If this is a big problem, please send me an email and we will work something out. Discussion topics before Thanksgiving will be opened Wednesday at noon ET and will close the following Wednesday at noon ET. There's a Thanksgiving Break which throws our schedule off a bit. After Thanksgiving our weeks will run from Monday at noon to Monday at noon. You are required to post a minimum of three times during the weeks that you participate. Please try to post on a couple different occasions during the week. A continual flow of content helps move the discussion along. You will be graded (on a scale of 1-20) on the quality of your posts. 17.5-20

points is an A, 16-17.5 points represents a B, 14-15.5 points a C, and so on and so forth. Posts should be at least 3 substantive paragraphs long in order to receive full credit. Discussions are an important tool that allows us to stay connected with each other and therefore, constitute 200 points or 20% of your total grade. Late posts will not be counted unless you make arrangements with me in advance.

I will pose starter questions at the beginning of each week. If you get in on the discussion early you may respond directly to those questions. Please read all postings. You may also continue the discussion in light of these earlier postings. Please do not repeat what has already been said. You are also free to post new questions related to the week's topics. In order to receive full credit for such a posting you must go beyond a simple question and demonstrate what you understand and where that understanding breaks down, or you may go in a new direction and provide new insights. If you want to start a new topic you may start a new thread. Please do not simply cut and paste information from the Internet. This is plagiarism. Use multiple sources and synthesize information into a cohesive post. Use scientific sources.

Project and Presentation

You will be required to pick a major issue facing the world ocean and to prepare a PowerPoint presentation (13-15 slides) with separate presenter notes. You will present this to the class during the 12th and 13th weeks of the semester. Half of the class will present each week. You are required to post your materials (presentation, notes, and discussion questions) to Blackboard **before** the start of the week that you are presenting. Each week starts on Monday at noon ET. You will lose 10% of the total for each day that you are late in posting your materials. Students who are presenting will be responsible for leading the discussions that week. I will set up a discussion thread for each of you. Your project and presentation are worth 250 points or 25% of your final grade. The starter discussion questions that you post do NOT count toward your posting totals for that week. You need to contribute to discussions as you would any other week.

I will put out a list of possible topics during Week 2. Topics are available on a first-come, first-serve basis. If you want to present on a different topic, please contact me for approval.

Instructor Feedback on Assignments:

You can expect to receive feedback on materials that are handed in within one week. If there are any delays I will send out an email and announcement to keep you updated.

General:

This course adheres to all University policies described in the academic catalog. Please pay close attention to the following policies:

Students with Disabilities

Johns Hopkins University is committed to providing reasonable and appropriate accommodations to students with disabilities. Students with documented disabilities should contact the coordinator listed on the [Disability Accommodations](#) page. Further information and a link to the Student Request for Accommodation form can also be found on the [Disability Accommodations](#) page.

Ethics & Plagiarism

JHU Ethics Statement: 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. Report any violations you witness to the instructor.

Read and adhere to JHU's [Notice on Plagiarism](#).

Dropping the Course

You are responsible for understanding the university's policies and procedures regarding withdrawing from courses found in the current catalog. You should be aware of the current deadlines according to the [Academic Calendar](#).

Getting Help

You have a variety of methods to get help on Blackboard. Please consult the resource listed in the "Blackboard Help" link for important information. If you encounter technical difficulty in completing or submitting any online assessment, please immediately contact the designated help desk listed on the [AAP online support page](#). Also, contact your instructor at the email address listed in the syllabus.

Copyright Policy

All course materials are the property of JHU and are to be used for the student's individual academic purpose only. Any dissemination, copying, reproducing, modification, displaying, or transmitting of any course material content for any other purpose is prohibited, will be considered misconduct under the [JHU Copyright Compliance Policy](#), and may be cause for disciplinary action. In addition, encouraging academic dishonesty or cheating by distributing information about course materials or assignments which would give an unfair advantage to others may violate AAP's [Code of Conduct](#) and the University's [Student Conduct Code](#). Specifically, recordings, course materials, and lecture notes may not be exchanged or distributed for commercial purposes, for compensation, or for any purpose other than use by students enrolled in the class. Other distributions of such materials by students may be deemed to violate the above University policies and be subject to disciplinary action.

Code of Conduct

To better support all students, the Johns Hopkins University non-academic [Student Conduct Code](#) has been integrated and updated to include all divisions of the University. In addition, it is important to note that all AAP students are still accountable for the [Code of Conduct for Advanced Academic Programs](#).

Title IX

Confidentiality and Mandatory Reporting

As an instructor, one of my responsibilities is to help create a safe and inclusive learning environment on our campus. I also have mandatory reporting responsibilities related to my role as a Responsible Employee under the Sexual Misconduct Policy & Procedures (which prohibits sexual harassment, sexual assault, relationship violence and stalking), as well as the General Anti-Harassment Policy (which prohibits all types of protected status-based discrimination and harassment). It is my goal that you feel able to share information related to your life experiences

in classroom discussions, in your written work, and in our one-on-one meetings. I will seek to keep information you share private to the greatest extent possible. However, I am required to share information that I learn of regarding sexual misconduct, as well as protected status-based harassment and discrimination, with the Office of Institutional Equity (OIE). For a list of individuals/offices who can speak with you confidentially, please see Appendix B of the [JHU Sexual Misconduct Policies and Laws](#).

For more information on both policies mentioned above, please see: [JHU Relevant Policies, Codes, Statements and Principles](#). Please also note that certain faculty and other University community members also have a duty as a designated Campus Safety Authority under the Clery Act to notify campus security of certain crimes, as well as a duty under State law and University policy to report suspected child abuse and/or neglect.

Tentative Schedule of Topics, Readings, and Exams

<u>Date</u>	<u>Topic</u>	<u>Readings and Assignments</u>
<u>Week 1</u> 9/5-9/12	Introduction. Why study the oceans? How do we study the Oceans?	Chap. 1
<u>Week 2</u> 9/12-9/19	Earth surface mega-geography Plate tectonics and ocean basin formation	Chap. 3 Chap. 2 Problem Set #1
<u>Week 3</u> 9/19-9/26	Water Chemistry of seawater Structure of the oceans	Chap. 5 Problem Set #2
<u>Week 4</u> 9/26-10/3	Marine Sediments	Chap. 4
<u>Week 5</u> 10/3-10/10	Atmosphere I—Composition and Structure Atmosphere II—Atmospheric Circulation	Chap. 6
<u>Week 6</u> 10/10-10/17	Midterm Exam Ocean-atmosphere interactions	Midterm Exam is due by 10/17 at Noon ET Chap. 6
<u>Week 7</u> 10/17-10/24	Ocean circulation— Thermohaline and Wind-driven	Chap. 7 Problem Set #3
<u>Week 8</u> 10/24-10/31	Waves and Tsunamis	Chap. 8
<u>Week 9</u> 10/31-11/7	Tides Coastal Processes	Chap. 9 Chap. 10
<u>Week 10</u> 11/7-11/14	Estuaries Fisheries	Chap. 10, p. 328-345 Chap. 13, p. 430-443
<u>Week 11</u> 11/14-11/18*	Primary Productivity Marine Life and the Environment	Chap. 12, Chap. 13, p. 403-429
11/19-11/25	<i>Thanksgiving Break</i>	
<u>Week 12⁺</u> 11/26-12/3	<u>Student Presentations</u>	
<u>Week 13⁺</u> 12/3-12/10	<u>Student Presentations</u>	
<u>Week 14⁺</u> 12/10-12/15	Final Exam	Final exam is due by 12/15 at Noon ET.

* Take note of changes to week duration due to Thanksgiving Holiday next week (shortened week)

+ Weeks 12-14 run from Monday to Monday