

# MSL 111, The Oceans



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**September 01, 2008 - September 08, 2008**



**Fri, Sep 05, 2008 -- Welcome**

Posted by John Kelley

Welcome to this first web-offering of The Oceans (MSL111X). This course grew out of our regular classroom course which we taught for several decades. We have had many requests from students located in communities far from Fairbanks who expressed interest in The Oceans. Now we are able to satisfy that need through distance delivery.

This course will cover the same material presented in the classroom course at the UAF, but will contain more content to supplement the material in the text book. Although we cannot offer you an actual experience at sea, the Investigations section will serve as a virtual laboratory which will introduce you to the practical aspects of the marine sciences.

To get started, go to the Syllabus and thoroughly read through the course information and then go to the assignments area to complete the introductory assignments. Don't neglect to present some brief information on you. A photo would also be desirable. This is also a good time to familiarize yourself with the location of the course sections and get to feel comfortable with BLACKBOARD. If you experience any problems contact me right away.

Finally, It is very important that you dedicate time each week to the course so that you don't miss the due dates for assignments. It is very easy to fall behind by putting them off.

I look forward to working with you throughout the semester.

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**Dr. John Kelley**

**Email** [ffijk@uaf.edu](mailto:ffijk@uaf.edu)

**Notes**

Dr. John Kelley has been conducting research in the polar regions since 1960. His professional training is in the fields of geophysics, geochemistry and the marine sciences.

He is Professor of Marine Science in the Institute of Marine science at the University of Alaska Fairbanks where he is currently involved in teaching and research. Recent research topics cover, contaminants in the marine environment, fisheries acoustics, radioactivity and investigations of the seabed for gravel, gold and platinum. Dr. Kelley served as the Director of the Naval Arctic Research Laboratory and Director of the National Science Foundation's Polar Ice Coring Office. He also serves as Chairman of the North Slope Borough's Science Advisory Committee since 1981. He also has served as a member of the National Academies of Sciences, U.S. National Planning Committee for the International Polar Year, 2007/2008. Dr. Kelley is a 2008 recipient of a Usibelli Foundation award for Distinguished Service to scientific research and teaching at the University of Alaska.



 **Syllabus****Course Welcome and Directions for Getting Started**

I would like to welcome you to The Oceans (MSL111X). This is the initial offering of this course which has been adapted for web delivery from the classroom-delivered course at the UAF. We are excited about this web-delivered course on the oceans as we can reach so many more students especially in Alaska when so much attention is being directed to the marine environment. We hope to make this an enjoyable experience for you and give you a well rounded view of the marine sciences.

Unlike a classroom course you will have much freedom in when you do the assignments. Since we are following the UAF academic semester, it is very important for you to follow the course schedule. It is so easy to fall behind. If you have any problems please contact me at once. Unlike a regular classroom course, we have an opportunity for much greater interaction through the discussion forum. I urge you to take an active part in this forum. I look forward to interacting with you in this exciting study of our planet's oceanic environment.

Please remember when you communicate by email with me to **ALWAYS include MSL 111X** in the subject line. This will assure you that I get the message.

John Kelley, Professor of Marine Science

**Course Characterization and Aims**

MSL F111, The Oceans (n) 4 credits. Prerequisites: Placement in ENGL F111X or higher; placement in DEVM F105 or higher; or permission of instructor.

This online course is primarily intended for Freshmen and Sophomores not majoring in science. It meets half of the "breadth" Natural Sciences Core Curriculum requirement. It is, however, a required course for undergraduate Fisheries majors, who generally take this course as Freshmen. Students who successfully complete the course will gain a basic understanding of the geology, physics, chemistry, and biology of the oceans, and of the interconnections between the ocean and atmosphere, and the oceans and the solid earth (the continents and sea floor).

As a Natural Sciences Core course, the course also explores how scientific research is conducted, the historical development of some key scientific concepts, how scientific research helps citizens understand and predict humans' effects on the environment, and how scientists and scientific knowledge contribute to public policy decisions. {Note that other than Fisheries majors, most UAF students who already have a strong background in the sciences will find "depth" Natural Sciences core courses more appropriate and challenging.}

**Required Course Materials**

- *Ocean Studies: Introduction to Oceanography*, 2nd Edition, Joeseeph M. Moran, Editor, American Meteorography Society.
- *Online Oceans Studies Investigations Manual*
- Inflatable World Globe
- Various websites as posted in individual lessons.

To purchase these materials, please contact the CDE Bookstore at 479-4726 or 800-277-8060 or by email at [rycdebks@uaf.edu](mailto:rycdebks@uaf.edu)

**Instructional Methods**

**Blackboard Course Website:** Your primary contact with instructors and other students will be through Blackboard: <http://classes.uaf.edu> (guess if you're reading this you found it!)

Grades for labs and exams/quizzes will be posted on Blackboard. Students should contact instructors as soon as possible if they discover any errors, and check frequently to make sure they have been credited with a correct grade for all work done. If you have any problems accessing Blackboard, call the IT help desk at (907) 474-6564 to ensure that you have a valid e-mail account and that you are using the correct login.

**Text and Reading Assignments:** Students will read and answer a prescribed number of self-guided questions at the rate of completing one chapter per week, Chapters 1-12, **plus** one other elective chapter (Chapter 13, 14, or 15), and may complete a second elective chapter (Chapter 13, 14, or 15) for extra credit.

**Exams:** There will be two mid-term examinations and one final exam. The final exam will be comprehensive; that is, it will cover material presented during the entire semester. Each mid-term exam will be worth 200 points (~10% of total grade) and the final will be worth 400 points (~20% of total grade). Although students may make up missed exams, it is the student's responsibility to arrange this with the instructor. Arrangements must be made ahead of time for missing an exam's due date.

**Term Paper:** Students will write a term paper during the semester. Weekly or biweekly preparation assignments will help to

make the task more manageable and will improve the quality of the final product.

**Lab:** Students will complete two laboratory simulation exercises weekly from the AMS Online Ocean Studies Investigations Manual. These match and support Chapters 1-12 and Chapters 13-15 in the text (see preceding paragraph about optional lesson.) The labs are worth ~750 points (about 36% of the total grade).

**Supplemental AMS Website:** "Current Ocean Studies" news and images is updated twice weekly (Tues/Thurs) and is meant to supplement the laboratory activities A (Tues) and B (Thurs) from the Investigations Manual: <http://www.ametsoc.org/oceanstudies>.

**Extra Credit Review:** Students can receive up to 50 extra credit points (~2.5% of total grade) for 1) a review of an article or series of articles related to ocean science, 2) for a review of website or series of websites related to ocean studies. Students may receive up to 60 additional extra credit points (~3% of total grade) for completing an extra text and laboratory investigation from the final three units of the AMS Online Ocean Studies Investigations Manual (see Lab Investigations, above). Extra Credit submissions are due on the final due date for this class (14 December 2008).



### Course Schedule

This course will have weekly deadline on homework assignments. The schedule is as follows:

Week	Topic	Submit	Discussion	Submit	Due Date
0	Introductory Assignment	Read Syllabus			Sun, Sept 7
		Homepage			
1	Ocean in the Earth System	Pretest 01	Forum 01	Lab 1A	Sun, Sept 14
		Quiz 01		Lab 1B	
2	Ocean Basins and Plate Tectonics	Pretest 02	Forum 02	Lab 2A	Sun, Sept 21
		Quiz 02		Lab 2B	
	Term Paper Prep	Reading Response			
3	Properties of Ocean Water	Pretest 03	Forum 03	Lab 3A	Sun, Sept 28
		Quiz 03		Lab 3B	
	Term Paper Prep	Brainstorm			
4	Marine Sediments	Pretest 04	Forum 04	Lab 4A	Sun, Oct 5
		Quiz 04		Lab 4B	
Mid-Term Exam #1					Sun, Oct 12
5	The Atmosphere and Ocean	Pretest 05	Forum 05	Lab 5A	Sun, Oct 12
		Quiz 05		Lab 5B	
	Term Paper Prep	Beginning Research			
6	Ocean Currents	Pretest 06	Forum 06	Lab 6A	Sun, Oct 19
		Quiz 06		Lab 6B	
	Term Paper Prep	References			
7	Ocean Waves and Tides	Pretest 07	Forum 07	Lab 7A	Sun, Oct 26
		Quiz 07		Lab 7B	
8	The Dynamic Coast	Pretest 08	Forum 08	Lab 8A	Sun, Nov 2
		Quiz 08		Lab 8B	
	Term Paper Prep		First Draft		
9	Marine Ecosystems	Pretest 09	Forum 09	Lab 9A	Sun, Nov 9
		Quiz 09		Lab 9B	
Mid-Term #2					Sun, Nov 16
10	Life in the Ocean	Pretest 10	Forum 10	Lab 10A	Sun, Nov 16
		Quiz 10		Lab 10B	
	Term Paper Prep	Refinement			
11	The Ocean, Atmosphere, and Climate Variability	Pretest 11	Forum 11	Lab 11A	Sun, Nov 23
		Quiz 11		Lab 11B	

	Term Paper Prep	Abstract			
12	The Ocean and Climate Change	Pretest 12	Forum 12	Lab 12A	Sun, Nov 30
		Quiz 12		Lab 12B	
13	Final Chapter (13, 14, or 15: your choice)	Pretest #	Forum #	Lab #A	Sun, Dec 7
		Quiz #		Lab #B	
	Term Paper	Final Version			Sun, Dec 14
	Final Exam				Sun, Dec 14
	Grades Due To Registrar				12/23



### Course Grading

**Grading:** Grading will be based on your point total for the semester, as follows:

- Completion of student homepage and self-guided weekly multiple-choice and discussion/essay exercises: up to ~119 points (~5%)
- Midterm exam #1: up to 200 points (~10%)
- Midterm exam #2: up to 200 points (~10%)
- Participation in discussion forums: up to 160 points (~13%)
- Final exam: up to 400 points (~20%)
- Lab total: up to ~750 points (~35%)
- Term paper (all steps): up to 150 pts (~7%)
- Total: **~2073 points**

(note that point values are approximate due to optional assignment choices for final unit)

### Extra Credit Options:

- Scientific Journal Review or Website Review option: up to 50 points (~3%);
- Chapter and Lab option: up to ~60 points (~2.5%);

**Extra Credit Total: ~110 points, or (~5.5%) percent**

### Grading scale (based on 2075 point approximation):

- 1867 points and above = A
- 1660-1866 points = B
- 1453-1659 points = C
- 1245 to 1452 points = D
- 1244 points and below = F

The grading policy will **not** use (+/-) values.

**The vast majority of students who fail this class do so because they do not take one or more of the exams and/or do not turn in most of their lab exercises on time.**



### Course Policies

**Attendance:** Students are expected to submit homework assignments each week. It is very easy to fall behind in a web-delivered course. It is important to do the assignments on a regular schedule as directed.

**Incompletes (I):** An Incomplete (I) will be given only to those students who have received permission from instructors to complete course work after 14th December 2008 (final exam day). Students who do not have permission to turn in their work late will be given a grade based on the number of points they have earned as of that date. **Incomplete grades will be changed to the grade you earned as of 23rd December 2008 if coursework is not completed within one year.**

**Course Policies:** Students should be familiar with the UAF Honor Code, which can be found in the Catalog. All written work, including projects, class questions, exams, lab reports, and extra credit reviews, must be the work of the student submitting it and not copied from another source, such as another student (past or present). The only exception is for sharing of lab results or observations, when specifically instructed to do so by the lab manual or the lab TA.



### Tips for Success

- Do not discard or electronically delete graded and returned work, labs, or other assignments until after you have received your final grade for the class. We try not to make errors in recording grades, but we are not perfect. Your class record will be posted on Blackboard, and you should check your grades periodically.

- Students who have not passed this class generally have missed one or more of the exams or have failed to turn in their assignments on time. The designers of this online course, urgently recommend that students not fall behind in regular weekly attention to assignments.
- Speak with or e-mail the instructor ([ffjik@uaf.edu](mailto:ffjik@uaf.edu)) if you find yourself getting behind in completing readings, self-guided quizzes, discussions or labs, or if you are doing poorly with assignments or exams. We will try to help you complete the course successfully on time. Remember to always include MSL111X in the subject line.
- We will be using the UA e-mail address that was assigned upon registration for all communications in this course. If you need to forward your mail or if you need help establishing this email, contact the help desk at:
  1. e-mail at [helpdesk@alaska.edu](mailto:helpdesk@alaska.edu)
  2. fax at (907)-450-8312
  3. phone in the Fairbanks area is 450-8300 and outside of Fairbanks is 1-800-478-8226



### Explanation of Extra Credit Options

[Journal/Web Review \(pdf\)](#) (582.463 Kb)

**Journal and web-site reviews.** The technical requirements for each of these reviews should not be lengthy, but should follow a formal writing style which includes a title, author/affiliation, Introduction, assessment of what was presented, conclusions and references.

See the attached example for an idea of what I'm looking for. Follow the basic format based on the Term paper tutorials. At the very least, the format should include: Title of the review, Name and address of the student, Introduction, Assessment, Conclusions, References. The length should be less than 1500 words exclusive of heading and references. Follow the general rules in the Term Paper tutorials.

#### Sources for Interesting Articles:

1. *Science*
2. *National Geographic*
3. *American Scientist*
4. *Journal of Geophysical Research*
5. *Sea Technology*
6. *Limnology and Oceanography*

#### Sources for Interesting Websites:

1. AMS web site (additional resource links)
2. NOAA Ocean Exploration
3. NASA

Students may receive up to 60 additional extra credit points for completing an extra text and laboratory investigation from the final three units of the AMS Online Ocean Studies Investigations Manual (see Lab Investigations, above).

Extra Credit submissions are due on the final due date for this class (14 December 2008).



### Additional Services

[Disability Services](#) For more information about getting help if you have a disability please see this website.

[Help Desk](#) Click here to see about current network outages and news.

Reach the Help Desk at:

1. e-mail at [helpdesk@alaska.edu](mailto:helpdesk@alaska.edu)
2. fax at (907)-450-8312
3. phone in the Fairbanks area is 450-8300 and outside of Fairbanks is 1-800-478-8226

[Forward your Email](#) Go here to find out more about the UA Email account you automatically have set up with you register for a UA class. Your instructor will only use your designated UA email address in this class to communicate with you.

#### Math Lab

Contact UAF's toll-free Math Hotline for problem solving and math help. Call 866-823-6284 during regular fall and spring semesters.

See External links for more services



## Assignments



### **Week 0 - Introduction to the course due Sept 7**

Introduction to the course, its designers and its participants: Who instructs, how do I find learning support resources, and how can I connect with other students?



### **Week 1 - Ocean in the Earth System due Sept 14**

Oceans in the Earth System: How do scientists view dynamic interactions of components of this planet's systems, and what are the unique qualities of "the water planet?"



### **Week 2 - Ocean Basins and Plate Tectonics due Sept 21**

Plate Tectonics: What processes shape Earth's lithosphere, how long do these processes take, and how do they affect oceanic basins?



### **Term Paper Prep: Tutorials and Information due Sept 21**

Ten percent of your final grade for this course will be earned by writing and submitting a term paper on a topic relevant to the oceans. Half of the grade (five percent of total course grade) will be based on the quality of your final written paper. The other half of the grade will be earned by completing weekly preparation assignments.

The weekly assignments will break the task of writing a scientific paper into small, manageable chunks, supported by feedback from your instructor. Ultimately, these assignments should help you to learn the process of academic writing and help you to write a better paper.

Click the link above for the first term paper preparation assignment (worth 2 points).



### **Week 3 - Properties of Ocean Water due Sept 28**

How do the extraordinary physical and chemical properties of water and sea water determine so much of how our oceans work?



### **Term Paper Prep: Brainstorm Potential Topics due Sept 28**

This assignment is worth 3 points. Click the link above for more information.



### **Week 4 - Marine Sediments due Oct 5**

How do sediments enter the ocean, what are their physical and chemical qualities, and how do they cycle back to the lithosphere?



### **Mid-Term Examination #1 due Oct 12**

It is time for the exam. It is a 1-hour exam made up of multiple choice questions and several short answer essay questions. It is closed book.

If you're close by go to the Center for Distance Education & Independent Learning office 2175 University Avenue South (corner of Davis and University Avenue South) to take the exam. Please remember that at the end of a semester the office becomes very busy and adequate testing space is limited. If you are concerned, please call ahead.

If you aren't able to go to the office in Fairbanks, you will need to find an appropriate proctor with appropriate testing facilities. CDE will issue the password information to your proctor so you can take the exam on-line. You may request this information by going to

[distance.uaf.edu/students/](https://distance.uaf.edu/students/) and submitting the form to CDE.



**Week 5 - The Atmosphere and Ocean due Oct 12**

What are the especially intimate connections between oceans and atmosphere that determine the long-term state of the atmosphere?



**Term Paper Prep: Familiarize Yourself with Library Resources due Oct 12**

This assignment is worth 3 points.



**Week 6 - Ocean Currents due Oct 19**

Ocean currents: What causes water in the oceans to circulate, and what geographic and climatic patterns result from this circulation?



**Term Paper Prep: Research your Topic due Oct 19**

This assignment is worth 5 points.



**Week 7 - Ocean Waves and Tides due Oct 26**

Ocean waves and tides: What are the various types of sea waves and tides, their causes and their consequences?



**Week 8 - The Dynamic Coast due Nov 2**

Dynamic Coasts: Why are coastal zones particularly vulnerable portions of the Earth's systems?



**Term Paper Prep: First Draft due Nov 2**

This assignment is worth 5 points.



**Week 9 - Marine Ecosystems due Nov 9**

Marine Ecosystems: What are basic structures and components of various marine ecosystems, and how do they function in respect to energy and matter?



**Mid-Term Examination #2 due Nov 16**

It is time for the exam. It is a 1-hour exam made up of multiple choice questions and several short answer essay questions. It is closed book.

If you're close by go to the Center for Distance Education & Independent Learning office 2175 University Avenue South (corner of Davis and University Avenue South) to take the exam. Please remember that at the end of a semester the office becomes very busy and adequate testing space is limited. If you are concerned, please call ahead.

If you aren't able to go to the office in Fairbanks, you will need to find an appropriate proctor with appropriate testing facilities. CDE will issue the password information to your proctor so you can take the exam on-line. You may request this information by going to [distance.uaf.edu/students/](https://distance.uaf.edu/students/) and submitting the form to CDE.



**Week 10 - Life in the Ocean due Nov 16**

Ocean life: How have diverse marine biota adapted to environmental conditions in the oceans?



**Term Paper Prep: Writing Center due Nov 16**

This assignment is worth 2 points.



### **Week 11 - The Ocean, Atmosphere, and Climate Variability due Nov 23**

Ocean, Atmosphere and Climate Variability: How do oceans and atmosphere interact to affect worldwide weather and short-term climatic extremes?



### **Term Paper Prep: Adding the Abstract due Nov 23**

This assignment is worth 5 points.



### **Week 12 - The Ocean and Climate Change due Nov 30**

Oceans and Climate Change: Why do climates change, and what are the roles played by oceans in these changes?



### **Week 13 - Specialization Assignment due Dec 7 and Extra Credit Opportunity week**

13—Future of Ocean Science: Based on historical developments of ocean science, what new developments and capabilities are likely in the coming century? Or

14—Ocean Stewardship: What parts of the oceans' finite bounty are threatened, and what are the obstacles to safeguarding these resources? Or

15—Ocean Problems and Policies: What governance and institutional measures are available to protect oceanic resources on a sustainable basis?

Of the three assignments that you'll find here - select one that interests you the most and complete the required tasks. **Due Dec 7**

\*\*Earn Extra Credit by selecting an additional assignment **due Dec 14**



### **TP8 - Term Paper: Final Version due Dec 14**

You've completed a number of sequenced steps toward writing your term paper. It's time to polish the final version, incorporating your abstract and any feedback you've received from the instructor, your peers, or the Writing Center. When your paper is complete, click the link below and submit your paper as a Microsoft Word document or a pdf. (If you need to use a different format, contact your instructor for permission.)

This assignment is worth 25 points.

>> [View/Complete Assignment: TP8 - Term Paper: Final Version due Dec 14](#)



### **Final Examination due Dec 14**

It is time for the exam. It is a 1-hour exam made up of multiple choice questions and several short answer essay questions. It is closed book.

If you're close by go to the Center for Distance Education & Independent Learning office 2175 University Avenue South (corner of Davis and University Avenue South) to take the exam. Please remember that at the end of a semester the office becomes very busy and adequate testing space is limited. If you are concerned, please call ahead.

If you aren't able to go to the office in Fairbanks, you will need to find an appropriate proctor with appropriate testing facilities. CDE will issue the password information to your proctor so you can take the exam on-line. You may request this information by going to [distance.uaf.edu/students/](http://distance.uaf.edu/students/) and submitting the form to CDE.



### **Presentations and Resouces**

Here you will find presentations and resources to supplement the text. These are the same presentations that you will find in each of the lesson modules.