

## OCE 3014 Oceanography

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- **Office:** No face-to-face office
- **Office Hours:** Thursdays 2-3 pm through Zoom

## Course Description and Purpose

**This is a Discipline Specific Course Global Learning course that counts towards your FIU Global Learning graduation requirement.**

Although our planet is overwhelmingly oceans, life originated in the oceans and oceans are home to an overwhelming majority of living organisms on our earth, we know less about the oceans than perhaps the surface of the moon.

Apart from being the main supplier of oxygen to our atmosphere, the oceans are also major sources of food and energy resources. The oceans are the major sink for carbon; without this sink our planet would move on an uncontrolled path towards global warming. Ocean currents keep our climate equitable making it possible for human civilization to flourish.

Yet the oceans are the biggest dumping ground for human wastes, the effect of which we are yet to understand or ascertain. Agriculture, Mining, Power generation are continuously affecting the orderly function of the ocean system and by our interference we are impacting the cycling rates and the global biogeochemical cycles that affect not only the oceans but the entire earth.

More volcanoes, mountains and canyons, greater than any on the land, exist under the oceans. Oceans provide the heat for the hurricanes, cause coastal and beach erosion, generate tidal waves. Over half the human population lives in the coastal regions and are directly affected by oceanic processes and hazards. This was so tragically highlighted by the 2004 Indian Ocean tsunami and the 2011 Fukushima disaster.

## Course Objectives

This course takes an inter-disciplinary approach in studying the world. The course emphasizes the following.

1. The flow and transformations of water and energy into and out of the ocean,
2. The physical and chemical properties of seawater,
3. Ocean circulation,
4. Marine life and its adaptations,
5. Interactions between the ocean and the other components of the Earth system (hydrosphere, atmosphere, geosphere, and biosphere), and
6. The human/societal impacts on, and response to, those Earth System interactions.

## Important Information

Before starting this course, please review the following pages:

- [Policies](#)
- [Technical Requirements and Skills](#)
- [Accessibility and Accommodation](#)
- [Academic Misconduct Statement](#)

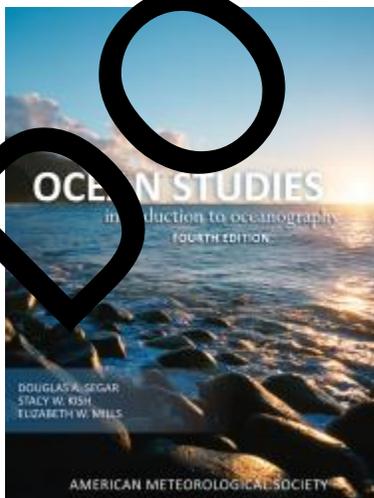
## Course Prerequisites

There are no prerequisites for this course.

## Proctored Exam Policy

The exams will be conducted under Honorlock. The students need to ensure that their system is compatible with Honorlock.

## Textbook and Course Materials



## Ocean Studies: Introduction to Oceanography (Required)

Douglas A Segar, Stacy W Kish and Elizabeth W Mills  
Education Program American Meteorological Society, Fourth Edition  
ISBN: 978-1-944970-09-3

You may purchase your textbook online at the [FIU Bookstore](#).

You need only the textbook. You do not need the whole student package. An older edition of the book is perfectly acceptable. The older edition was also published under the name of "Online Ocean Studies". Inexpensive used copies are available in Amazon, eBay and various other online sites like Half.com and Powell books. Please get the book immediately because you will not be able to do the quizzes without the book. I will post a pdf of the first two chapters only of the book. **There will be no relaxation of deadlines because your book did not reach you in time.**

**Apart from the text book, this course also includes study material from diverse sources that include readings from websites, magazine, newspaper and journal articles, videos from youtube and other sources as well as reports and data from sources like NOAA, EPA, USGS and IPCC.**

## Course Modality

This is an online course, which means most (if not all) of the course work will be conducted online. Expectations for performance in an online course are the same for a traditional course. In fact, online courses require a degree of self-motivation, self-discipline, and technology skills which can make these courses more demanding for some students.

## Course Communication

Communication in this course will take place via the Canvas Inbox. Check out the [Canvas Conversations Tutorial](#) to learn how to communicate with your instructor and peers using Announcements, Discussions, and the Inbox.

## Discussion Forums

The following discussion forums are available to you:

- **Introduce Yourself** - post a self-introduction to the class
- **Open Forum** - for class discussions and other postings of general interest that are directly related to the course.

Everyone can read forum posts, do not post private information. Care should be taken when determining what to post.

## Global Learning:

A **Global Learning** course has three components: Global Awareness, Global Perspective and Global Engagement. To fulfil the aims of **Global Awareness** the students should be able to demonstrate knowledge of the interrelatedness of local, global, international, and intercultural issues, trends, and systems. In the context of this course the course learning outcome requires the students to be able to understand the scientific information and key concepts of oceanography, the interactions between the ocean and the other earth systems (i.e, hydrosphere, lithosphere, biosphere and atmosphere) and also the impact of such interactions on the humans and on human societies. This they exhibit through weekly quizzes involving multiple choice type questions and through group projects which are described in more details below.

**Global Perspective** requires the students to be able to develop a multi-perspective analysis of local, global, international, and intercultural problems. In the context of this course this involves student's ability to analyze issues affecting world's oceans from multiple perspectives (i.e. from the perspective of different people, nations, cultures, population needs, technology, sustainability, natural cycles), including analysis of the various stakeholders and impacts affecting oceans and humans. All students will participate in a group based role-playing exercise where they will represent the positions of different nations/peoples/commercial interests when it comes to issues affecting the oceans (looking at causes, impacts, and potential solutions). The exercise will include a presentation or a report on selected topics.

**In the Global Engagement** part of the course students should be able to demonstrate willingness to engage in local, global, international, and intercultural problem solving. Students should be able to propose personal, political, and global decisions and initiatives needed at the present and in the future for adaptation and mitigation of the challenges facing the ocean environment. The student activity includes Group projects as explained in the global perspective part but also includes fashioning of a solution to the problems discussed. Students will critique the team projects and take part in online debates and discussions. As a proof of global engagement they may also prepare one page position paper or letters to the instructor or congress person advocating the position of the stake holders they are representing

Students will also take part in community based activities related to some aspect of human-ocean interaction

## Quizzes

A quiz corresponds to one chapter's worth of material.

You will get two attempts at every quiz, the higher grade will be automatically recorded. The quizzes and the exams are time limited and Canvas will force a submission after the time is over. Your quizzes will be graded by the computer and the scores will be available immediately after submission. **You can see your answers and also the correct answers after the quiz** is available.

The quiz deadlines are generally on the midnight of **Sunday** of the week when the quizzes are posted, but during exam weeks, the quizzes will be due on **Thursday** so you have time to review answers before the exam becomes available over the weekend. Please see the weekly calendar.

**There will be no relaxation of the deadline for the quizzes under any circumstances.** Please don't wait till the last moment to submit these assignments. The deadlines will not be extended even if FIU server dies, your computer crashes, there is a flood in Miami, Heat loses NBA finals, you smash your car, whatever.

Suggestions:

- Read the notes and chapters before you attempt the quizzes
- You may take the quizzes up to 2 times. The highest score is recorded
- Take the Quizzes on time. Quizzes will not be available after the due date. Please do not leave your assignments for the last moment
- Do your assignments and quizzes early so you can get help if needed

In order to mitigate any issues with your computer and online assessments, it is very important that you take the Practice Quiz from each computer you will be using to take your graded quizzes and exams.

## Exams

Exams will be offered online and will be proctored by Honorlock. You must take the exam within the time and date stipulated.

You should leave free a 90-minute block of time for each exam and 4 hours for the final exam (the exams will be of shorter duration, but you should plan to have some extra time in hand). I have scheduled the exams on the **weekends (Friday - Sunday)**. Please see the weekly calendar. If you have problem taking the exams on weekends then you must contact me at the beginning of the semester and arrange for an alternate day before hand.

Please check the exam dates --- no make up will be given. If you forget the exam date – you will end up with a zero.

## Assignments

### Group Projects

This course is designated to fulfill the requirement of a Global Learning course. A Global Learning course requires you to know the material, analyze issues from different perspective and be engaged in finding a solution to the global problems. This class also has adopted an active learning strategy in which the students learn to learn by themselves and help each other in learning. This the students in this course will do by participating in group projects.

1. All students will be divided in to several groups **after the add/drop date**. Please check the group pages to find out which group you belong to and who are the other group members. Establish a communication between the group members as soon as possible.
2. You will post group projects in the **Discussion Board**.
3. The groups will post their project in the Discussion Board by the deadline. Every group member has to take part in preparing the project and the submission should clearly show the work done by each member. Any student who does not contribute to a project will get zero credit.

4. Once the projects are posted, I expect the rest of the students to post their comments on the project. Your comment should be critical not something innate like “This is a nice project” or “we all should be concerned about global warming”.
5. Please remember, this is a group project. No individual submission will be accepted.

## Community Engagement Project

In addition to the group projects, all students need to take part in a community engagement project of their choice as part of the “Global Engagement” requirement. The way to do it is: we all are complaining about the sad state of various things – waste, global warming, ocean acidification. What we all need to do is to do something about all the problems instead of just complaining. So for your part, you need to “do something” about any of the problems facing the world’s oceans. Your grade for this project will depend on how much effort you put in the project and how effective has been the outcome of the project. Detailed instructions will be available in the course.

## Grading

Course Requirements	Number of Items	Percent for Each
Quizzes	15	2%
Exams	2	10%
Final Exam	1	20%
Group Projects	2	10%
Community Engagement Project	1	10%
<b>Total</b>	<b>21</b>	<b>N/A</b>

Letter	Range%	Letter	Range%	Letter	Range%
A	95 or above	B	83 - 86	C	70 - 76
A-	90 - 94	B-	80 - 82	D	60 - 69
B+	87 - 89	C+	77 - 79	F	less than 60

## Weekly Schedule

- Quizzes are available **Monday - Sunday** of the week scheduled, except on Exam weeks, when they're due on **Thursday**.

- Exams are available **Friday - Sunday** of the week scheduled.

<b>Date</b>	<b>Readings</b>	<b>Activities Due</b>
Week 1 Aug 24-Aug 30	Ch. 1: Ocean in the Earth System	<ul style="list-style-type: none"> <li>• Quiz 1</li> </ul>
Aug 31 - Sep 6	Ch. 2: The Ocean Basins and Plate Tectonics	<ul style="list-style-type: none"> <li>• Quiz 2</li> </ul>
Week 3 Sept 7-13	Ch. 3: Properties of Ocean Water	<ul style="list-style-type: none"> <li>• Quiz 3</li> </ul>
Week 4 Sept 14-20	Ch. 4: Marine Sediments	<ul style="list-style-type: none"> <li>• Quiz 4</li> </ul>
Week 5 Sept 21-27	Ch. 5: The Atmosphere and Ocean	<ul style="list-style-type: none"> <li>• Quiz 5 (due Thursday)</li> <li>• Exam 1 (Chs. 1-5)</li> </ul>
Week 6 Sept 28-Oct 4	Ch. 6: Ocean Currents	<ul style="list-style-type: none"> <li>• Quiz 6</li> <li>• Group Project 1</li> </ul>
Week 7 Oct 5-11	Ch. 7: Waves and Tides	<ul style="list-style-type: none"> <li>• Quiz 7</li> </ul>
Week 8 Oct 12-18	Ch. 8: The Dynamics Coast	<ul style="list-style-type: none"> <li>• Quiz 8</li> </ul>
Week 9 Oct 19-25	Ch. 9: Marine Ecosystem	<ul style="list-style-type: none"> <li>• Quiz 9</li> </ul>
Week 10 Oct 26-Nov 1	Ch. 10: Life in the Ocean	<ul style="list-style-type: none"> <li>• Quiz 10 (due Thursday)</li> <li>• Exam 2 (Chs. 6-10)</li> </ul>
Week 11 Nov 2- 8	Ch. 11: Ocean, Atmosphere and Climate Variability	<ul style="list-style-type: none"> <li>• Quiz 11</li> <li>• Group Project 2</li> </ul>
Week 12 Nov 9-15	Ch. 12: The Ocean and Climate Change	<ul style="list-style-type: none"> <li>• Quiz 12</li> </ul>
Week 13 Nov 16-22	Ch. 13: The Future of the Ocean	<ul style="list-style-type: none"> <li>• Quiz 13</li> <li>• Community Engagement Project</li> </ul>
Week 14 Nov 23- Nov 29	Ch. 14: Ocean Stewardship	<ul style="list-style-type: none"> <li>• Quiz 14</li> </ul>

Date	Readings	Activities Due
Week 15 Nov 30 - Dec 5	Ch. 15: Ocean Problem and Policy	<ul style="list-style-type: none"><li data-bbox="1019 258 1414 363">• Quiz 15 (Please note the deadline is on Saturday)</li></ul>
Week 16 Dec 6-13	Final Exam (Cumulative) TBA	

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