

# Oceanography

This course satisfies the DEC category **E**  
This course satisfies the SBC category **SNW**

**Course Description:** An examination of the World Ocean and the chemical, geological, biological, and physical processes that control its major features and the life that inhabits it. Students will also explore human interactions with the marine environment.

**Course Learning objectives:** By assessing scientific information (data, concepts, & models), students will understand and explain....

- the fundamental processes that dictate the history and functioning of the World Ocean.
- how the World Ocean and atmospheric interactions affect global climate.
- factors controlling the distribution of life in the World Ocean.
- contemporary issues regarding interactions between human society and the World Ocean.

These objectives will be met through participation in lectures and reading assigned course material. Progress will be assessed through performance on quizzes during each lecture, four in-semester examinations, and a final, comprehensive examination.

This course satisfies the requirements of the current Diversified Education Curriculum (D.E.C.) Tier II Category E to expand students' knowledge about objects and processes observable in nature. It is anticipated that this course will fulfill the requirement for the SNW (Study the Natural World) learning outcomes in the new Stony Brook Curriculum, expected to be implemented in 2014.

**Lecture:** Tues & Thurs: 10:00 – 11:20; Harriman Hall 112

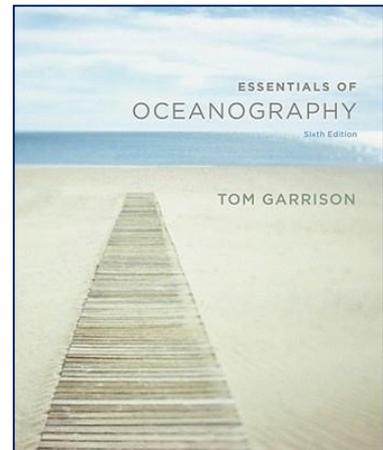
**Lecturer: Dr. Kurt Bretsch**

Office hours: Tues 11:45-12:45 in ESS 104 (main campus)  
Weds 12:30-1:30 in NS 123 (Southampton campus)  
(or by email appointment) Kurt.Bretsch@stonybrook.edu

**Teaching Assistant: Haikun Xu**

Office hours: Tues & Thurs 11:30-12:30; in ESS 104  
(or by email appointment) Haikun.Xu@stonybrook.edu

**Required text:** Essentials of Oceanography, 6<sup>th</sup> edition, Tom Garrison



**Attendance:** Required. Arrive on time and expect to stay for the scheduled duration of each class. Many topics, such as current events, are not in your book and will be discussed in lecture. One full week advance email notice is required if you must miss a lecture; we will discuss your options. Absences due to illness are excusable, but require submission of a signed doctor's note at the next lecture attended.

**Quizzes:** Each lecture will begin with a short quiz to assess your comprehension of the pre-lecture textbook readings (3 questions) and material from the previous lecture (3 questions). Quizzes can not be made up with an unexcused absence, or if you arrive late. Unexcused early departures from class will result in a 0 on your quiz. Note that when calculating your final course grade, your lowest quiz grade will be dropped.

**Lecture Notes:** Incomplete PowerPoint lecture notes will be posted on Blackboard by noon the day before each lecture. You may bring printed handouts of the lecture notes to class, or you may elect to bring a laptop. During lecture, laptops can only be used for MAR 104 activities. Use of your laptop for other activities is a distraction to your fellow students, and will result in revocation of laptop privileges.

<u>Grade Breakdown</u>	<u>%</u>
Exam 1	15
Exam 2	15
Exam 3	15
Exam 4	15
Final Exam	18
Quizzes (23)	22 (your lowest quiz grade will be dropped)
SRF	+3 (extra credit)

**Extra Credit - Seminar Response Form:**

Attend a marine science seminar this spring and submit a **completed** seminar response form (download from Blackboard, under Course Documents) to add **3 pts** to your final grade. Only one form may be submitted for extra credit. I strongly recommend that you take advantage of this opportunity as soon as possible. Do not wait until the end of the semester when your workload is high.

Seminars are held in Endeavour 120 at noon on most Wednesdays and Fridays. Seminars are also held at the Southampton campus at 7:30 pm on March 7, April 4, and May 2 (Fridays). On these dates, a SoMAS van will leave SoMAS at 6:00 pm and the SAC loop at 6:10 pm and return to Stony Brook campus from Southampton by 9:30 - 10:00 pm. To reserve a seat, email Bill Wise ([william.wise@stonybrook.edu](mailto:william.wise@stonybrook.edu)) by noon on the day of the talk. The van will not run unless there are at least two reservations.

The seminar schedule can be viewed at: [http://www.somas.stonybrook.edu/news\\_events/seminar.html](http://www.somas.stonybrook.edu/news_events/seminar.html)

If you would like to attend a different Oceanography-related seminar held elsewhere, I must first approve it. Send me an email request and description of the seminar at least 1 week before the seminar.

**Other:** Mobile communication devices must remain off during class.

**Americans with Disabilities Act:** If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

**Academic Integrity:** Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at <http://www.stonybrook.edu/uaa/academicjudiciary/>

**Critical Incident Management:** Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.

## MAR 104, Spring 2014

### Lecture Schedule

Week	Date	Topic	Reading
01	Jan 28 Jan 30	Introduction to Course & Oceanography Ocean History	--- Ch 1
02	Feb 4 Feb 6	Ocean Exploration Earth Structure	Ch 2 pgs 50 - 56
03	Feb 11 Feb 13	Plate Tectonics Bathymetry	pgs 57 - 77 Ch 4
04	Feb 18 Feb 20	<b>Exam 1</b> Marine Sediments	--- Ch 5
05	Feb 25 Feb 27	Properties of Water I Properties of Water II	pg 124 - Sec 6.4 Sec 6.5 – pg 149
06	March 4 March 6	Atmospheric Circulation Oceanic Circulation	Ch 7 Ch 8
07	March 11 March 13	<b>Exam 2</b> Waves	--- Ch 9
08	March 18 March 20	<b>Spring Break – No Class</b>	--- ---
09	March 25 March 27	Tides Coasts	Ch 10 Ch 11
10	April 1 April 3	Marine Life Plankton	Ch 12 pg 294 – Sec 13.8
11	April 8 April 10	<b>Exam 3</b> Nekton I (Cephalopods, Arthropods, Fishes)	--- Sec 13.9 – pg 314
12	April 15 April 17	Nekton II (Reptiles, Birds, Mammals) Nekton III	pgs 314 – 323 TBA
13	April 22 April 24	Benthic Communities Coral Reef Communities	pg 324 – Sec 14.6 Sec 14.7 & TBA
14	April 29 May 1	Life in the Deep Sea <b>Exam 4</b>	Sec 14.8 – pg 347 ---
15	May 6 May 8	Humans & the Ocean Today I Humans & the Ocean Today II, Review Session	pgs 348 – Sec 15.9 Sec 15.10 – pg 391

### Final Exam: Friday, May 16, 11:15-1:45, Harriman 112

(covers material from **entire** semester with emphasis on Ch 15 {~ 1/5 of the questions})

#### Take note:

- Complete each reading BEFORE the lecture. Listed readings are inclusive.
- The order of topics and or/duration of coverage may change during the semester. Exam dates are fixed.
- Additional readings might be assigned during the semester (TBA=To Be Announced).