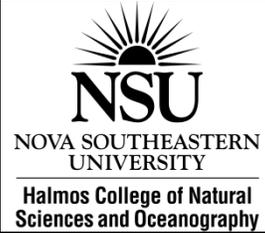


**Nova Southeastern University
Oceanographic Center
Deep-Sea Biology Course Syllabus
Winter 2016**



Last Date Revised: 2 October 2016

I. COURSE NUMBER AND TITLE:

- Deep-sea Biology OCMB 6560, MEVS 5550
- Lecture: Wednesday evenings, Jan 6 – March 23
- Time: Evenings 6:30 - 9:30 pm.
Building & Room: see <http://www.nova.edu/ocean/academics/winter-course-offerings.html>

II. INSTRUCTOR:

- Dr. Tamara Frank
- Office: CE 330
- Office hours: Mondays, Wednesdays and Fridays. I'm usually there all day, but it's best to call to make sure that I haven't gone over to the Davie campus
- Phone: 954-262-3637 (OC) or 954-262-7679 (Davie)
- E-mail: tfrank1@nova.edu

III. COURSE DESCRIPTION:

The deep sea is the largest living space on the planet, with some of the most diverse, complex and extreme environments on the planet. This course will cover major topics in deep-sea biology, including depth zonation, energetics, adaptations, extreme environments, sensory biology, and anthropogenic threats. This course will provide you with a basic understanding of what we know (and don't know) about deep-sea ecosystems, the methods used to study this environment and inhabitants, and it will create an opportunity to discuss major current questions and exciting new discoveries.

IV. LEARNING OUTCOMES:

At the conclusion of this course the student will be able to:

- *1) Demonstrate an understanding of ecological, geological, chemical and biological concepts as they relate to deep-sea ecosystems
 - a) Describe the co-varying effects of temperature, pressure, oxygen and light levels on the adaptations of deep-sea organisms
 - b) Demonstrate an understanding of the ecology of deep-sea organisms

- *2) Evaluate the potential impacts of anthropogenic activities on deep-sea animals
- *3) Read and understand a scientific paper, evaluate its findings and discuss the implications of those findings
- *4) Synthesize a body of literature on a topic and present a clear summation of the topic, with a comprehensive background and description of relevant controversies
- *5) Demonstrate effective communication skills and a full understanding of the scientific method

V. RECOMMENDED TEXTS AND MATERIALS:

Herring, P. 2002. The Biology of the Deep Ocean. Oxford University Press Press. 2002, 314 pages. ISBN 0 19 854956 3

Additional assigned readings will be placed on Blackboard.

VI. COURSE STRUCTURE

This will be a highly interactive class. I will give the lectures on the topics listed in the syllabus. In addition to the lectures during this time period, readings will be assigned every week from papers posted on Blackboard, with current updates/controversies for the lecture topics. These papers which will be discussed at the beginning of each lecture period, and cover a topic presented in the previous week's lecture. I will lead the first discussion, and no paper summary is due for this paper. After that, students will choose papers from those posted on Blackboard, and lead the discussions of those papers. Every student will be required to submit brief paper summaries for every paper that they are not leading the discussion on, with a deadline of noon on the day that the paper will be discussed. There will also be one lab to give you an overview of deep-sea organisms and their adaptations. The last two weeks of classes will be student presentations on a topic of their choosing relating to deep-sea biology.

Paper Discussion Leaders

- Describe the methods very briefly, emphasizing major findings and conclusions
- Be prepared with one or two questions per paper to stimulate discussion

Participation in Paper Discussions

- You will be required to submit a short paragraph of each paper (one paragraph, although you may write more), summarizing the results/important findings, as well as one issue/question/point that you would like to see discussed after the paper presentation. You may not copy the abstract and submit that as your summary. These need to be sent to me via E-mail by 11:59 a.m. on the Wednesday of the presentation. I will present the first paper during our second class meeting.

Topic Presentations

- Choose a topic relating to deep-sea biology (possible topics will be provided by your instructor, but you may select any topic that interests you)
- Introduce the topic, review the major results and conclusions
- Identify gaps/controversies
- Review it via a 12 minute PowerPoint presentation, leaving 1-3 minutes for questions
- Topic presentations will be evaluated by your peers and instructor, using a rubric provided by your instructor
- PowerPoint files of presentation with bibliography are due at time of presentation

Exams

- There will be two exams during the course, to test your knowledge and comprehension of the lecture material

VI. COURSE SCHEDULE AND TOPIC OUTLINE:

January 6	History of Exploration Deep-sea Environment Data Collection Techniques	
January 13	Patterns in Biomass/Body Size – zonation	Paper Discussion
January 20	Deep-sea Oases: Vents, Seeps and Whalefalls	Paper Discussion
January 27	Human Impacts	Paper Discussion
February 3	Exam	
February 10	Life in the Deep 1: Challenges and adaptations	Paper Discussion
February 17	Life in the Deep II: Challenges and adaptations	Paper Discussion
February 24	Lab	
March 2	Feeding, Metabolism and energy demands	Paper Discussion
March 9	Unusual Life Forms	Paper Discussion
March 16	Exam	
March 25	Student presentations	

Note: This is a tentative schedule that may change with time. Changes to the syllabus will be announced in class, and a revised syllabus posted on Blackboard

VII. GRADING CRITERIA:

Participation in paper discussions/paper summaries	15%
Leading Paper Discussion	15%
Evaluation of student topic presentations	10%
Topic Presentations	20%
Exam – on lectures notes and lab	40%

A standard grading scale will be used:

A = 93% - 100%	B- = 80% - 82 %	D+ = 66% - 69%
A- = 90% - 92%	C+ = 76% - 79%	D = 60% - 65%
B+ = 86% - 89%	C = 73% - 75%	F = < 60%
B = 83% -85%	C- = 70% - 72%	

Should class performance deviate significantly from this scale, adjustments will be made.

VII. CLASS POLICIES:

If you miss a lecture, you will miss the paper discussions, and that will reflect on your point totals for the class. Due to the short duration of the class, there can be no make-up for missed classes. If you have a bona-fide documented excuse following NSU's policy, then adjustments will be made to your point totals so that you will not be penalized for those missed discussions. All cell phones are to be silenced. If cell phones go off during class, they will be confiscated and returned at the end of class. Laptops may only be used to aid with note-taking. If I find you using your laptop for purposes other than taking notes, you will lose your privilege to use your laptop in class for the rest of the semester.

IX: COLLEGE-WIDE POLICY STATEMENTS

- A. Academic Misconduct:** Academic misconduct appears in a variety of forms (including plagiarism). It is a violation of NSU academic policy and may be punished in a variety of ways, from failing the assignment and/or the entire course to academic probation, suspension or expulsion. If you have questions about what constitutes academic misconduct before handing in an assignment, see your instructor. For more information regarding academic misconduct policies, see the NSU Undergraduate Student Catalog (<http://www.fcas.nova.edu/catalog/2010-2011catalog.pdf>).

- B. Last Day to Withdraw:** It is your responsibility to formally withdraw from this course by completing the appropriate forms before end of the drop period in order to receive a partial refund (<http://www.nova.edu/ocean/coursepolicy.html>). A request for tuition refund must be made in writing at the time of withdrawal. Refunds will be made solely at the option of the university and will be based on the legitimacy of the reason for withdrawal. Should you fail to appropriately withdraw from this course, and then earn a grade below your expectations, I will NOT backdate paperwork so that you can avoid earning a grade lower than you like.
- C. Email Policy:** All email communications between students and faculty must be conducted via NSU email accounts. This requirement will assist NSU in communicating more effectively and protecting your privacy. Emails sent to faculty from non-NSU accounts will be returned to the sender with instructions to resend the communication from your NSU account. To set up an NSU email account or to get help with an existing account, go to <http://www.nova.edu/cwis/oit/stuservices.html> . Also, the computer help desk is available to assist you with questions regarding your NSU email account. It can be reached at 954-262-HELP or 1-800-541-6682, ext. HELP (4357).
- D. Student Course Evaluations:** Student comment and feedback evaluating each college class is an important tool to evaluate program effectiveness. Participation in this process is a responsibility of each student. The university uses anonymous evaluations that are completed with the instructor out of the classroom. At the completion of the term and after instructors submit grades, instructors will receive an anonymous summary of the entire class's evaluation. Student names or ID numbers cannot be identified.
- E. Accommodations for students with documented disabilities.** You must go through Student Disability Services in order to receive academic accommodations. They will notify the instructor with a confidential letter of notification once the proper procedures have been followed. Until the instructor receives this letter, you will not receive accommodations. For more information about ADA policy, services, and procedures, students may call the Office of Student Disability Services at 954-262-7189 or visit <http://www.nova.edu/disabilityservices>.