

Introduction to Marine Science

BIO K175 - TI Three semester hour credits

CRN: 32215

Classroom: A221 Wed. 6:00pm - 8:45pm

Office Hours: W - 5:30-6:00pm and 8:45-9:15pm (Or by appointment)

Email: Holly.buckley@elpsk12.org (preferred) or HBuckley@trcc.commnet.edu

Three Rivers Community College

Norwich, CT 06360

Instructor: Holly Buckley

Fall 2017

Required Text:

Karleskint, Turner and Small. 2013. *Introduction to Marine Biology; 4th edition*. Brooks/Cole Publishing. 526p. ISBN-13:978-1-133-36535-8

Catalog Description:

This is an introductory course in marine science. Topics to be explored include: general marine biology, intertidal ecology, plankton biology, marine communities, and the geomorphology of the New England coast. Some field work will be involved.

Primary Objectives:

Students should expect to learn the fundamentals of marine biology and understand ecological principles that govern marine systems. Also, emphasis will be placed on various marine systems such as: energy transfer, organismal biology, organism adaptations to seawater, and marine habitats.

Attendance Policy:

Students are expected to attend class regularly, as in accordance with TRCC attendance policy. If a class is missed due to circumstances beyond your control, **please**, be sure to notify your instructor and make the necessary arrangements for obtaining the lecture notes. **You will be responsible** for the material. If you **miss three** or more classes your **final grade** will be dropped by **5 points from your final grade**.

Grade Evaluation:

There will be 3 non-cumulative examinations. The 3rd exam will be given during final exam week. There will be several quizzes based on the reading and lecture from the previous week. Quizzes may be during class or on Blackboard. There will be a 5 page research paper due toward the end of the semester. There will also be several in-class activities. Exam and quiz questions will consist of multiple choice, matching, short answers, identification, etc. Some questions will come directly from the questions for review. All scores will be added to Blackboard and the average will be calculated by dividing through by the total possible points.

Exam and quiz questions will consist of multiple choice, matching, and short answers. Some questions will come directly from the Questions for Review, Matching, Short answer and Thinking Critically.

Research Paper & Presentation of Research:

All students are required to maintain a learning portfolio in Digication that uses the (Three Rivers) College Template. This is a suggested assignment for your portfolio. The paper will be on a marine topic of your choice. It will be 5 FULL typed pages with normal margins excluding any diagrams, pictures, title pages or bibliography (in MLA format). There will be at least 5 references in alphabetical order and at least one must be a **primary source**. A primary source is a direct or firsthand evidence about an event, object or person. It can include results of experiments, statistical data, audio or video recordings, or eyewitness accounts. It will be typed, double spaced and no more than 12 font. Some paper might be selected to be submitted to turnitin.com to check for plagiarism. You should start your paper soon, the semester goes very quickly. **I WILL NOT ACCEPT ANY LATE PAPERS!** The grade for the paper will be determined by the content, length, number of references and internal citations. Internal citations are required. If you have any questions, ask them soon. **Your topic is due March 6th. The paper is due May 1st.** **Again, no late papers!** You will also need to create a 5 minute presentation on your findings (use PowerPoint or Google Slides). This will be presented on our last day and then we will start the final exam.

Bibliography Rubric

Category	2	1	0	Total (10)
Correct placement of author, title, etc.	All entries have the author, title, etc., in correct order	A few entries have the author, title, etc., in correct order	None of the entries have the author, title, etc., in correct order	(2)
Correct hanging indent		All entries are correctly indented	Not all entries are correctly indented	(1)
Citations	All sources have been represented in paper	Some sources have been represented	No sources are cited in paper	(2)
Correct capitalization	All of the entries have correct capitalization in titles, names, etc.	A few of the entries have correct capitalization in titles, names, etc.	None of the entries have correct capitalization in titles, names, etc.	(2)
Number of sources	Minimum of 5 sources with one primary	3-4 sources sited with one primary	0-2 sources sited with one primary	(2)
Correct alphabetization		Bibliography is in alphabetical order	Bibliography is not in alphabetical order	(1)

Add/Drop Procedures:

Please consult the TRCC catalog for this policy.

Suggestions for the course:

To gain a better understanding be sure to read the required reading sections **before** coming to class. Also, be prepared to participate in classroom discussions.

Final Grade:

100-94.0 = A	76.9-74.0 = C
93.9-90.0 = A-	73.9-70.0 = C-
89.9-87.0 = B+	69.9-67.0 = D+
86.9-84.0 = B	66.9-64.0 = D
83.9-80 = B-	60.0-63.9 = D-
79.9-77.0 = C+	59.9-00 = F

Various presentations will be expected on different organisms and on major contributors to the field of marine science.

College Withdrawal Policy:

A student who finds it necessary to discontinue a course once class has met must provide written notice to the registrar. **See Registrar for dates and forms.** After that period, a student wishing to withdraw must obtain written authorization of the instructor to receive a "W" grade on their academic record, non-punitive grade indicating termination of class participation. Students who do not withdraw, but stop attending **will receive** a grade of "F" for the final grade. **Verbal withdrawals cannot be accepted.**

Disabilites Statement:

If you have a hidden or visible disability, which may require classroom or test-taking modifications, please see me as soon as possible. If you have not already done so, please be sure to register with the college disability counselors by contacting the Student Services Office.

- Matt Liscum - Counselor: (860) 215-9265 - Rm. A113
 - Learning disabilities
 - ADD/ADHD
 - Autism Spectrum
 - Mental Health Disabilities
- Elizabeth Willcox, Advisor: (860) 215-9289 - Rm. A113
 - Medical Disabilities
 - Mobility Disabilities
 - Sensor Disability

Academic and Classroom Misconduct:

The instructor has the primary responsibility for control over classroom behavior and maintenance of academic integrity, and can order the temporary removal or exclusion from the classroom, and/or laboratory, of any student engaged in conduct that violates the general rules and regulation of the institution. Extended or permanent exclusion from classroom, and/or laboratory, or further disciplinary action can be effected only through appropriate college procedure. Plagiarism, cheating, or any form of academic dishonesty is **prohibited**. Students guilty of academic dishonesty directly or indirectly will receive a **zero** for an exercise or exam and may receive an **F** for the course in addition to other possible disciplinary sanctions which maybe imposed through the regular institutional procedures. Any student that believes he or she has been erroneously accused may appeal the case through the appropriate institutional procedures if their grade was affected.

Digication:

All students are required to maintain an online learning portfolio in Digication that uses the college template. Through this electronic tool, students will have the opportunity to monitor their own growth in college-wide learning. The student will keep his/her learning portfolio and may continue to use the Digication account after graduation. A Three Rivers General Education Assessment team will select and review random works to not include names and all student work will remain private and anonymous for college improvements purposes. Students will have the ability to integrate learning from the classroom, college and life in general, which will provide additional learning opportunities. If desired, student will have the option to create multiple portfolios.

BIO K175 - Intro to Marine Science Tentative Schedule

Fall 2017 W: 6:00 -8:45p.m. A-221

Syllabus Revisions:

This schedule may be subject to change as the instructor sees fit. Any changes will be announced by the instructor in advance.

Lecture Schedule

<u>Date</u>	<u>Topic</u>	<u>Reading</u>
Week 1 - Aug. 30	Introduction & Classification and History (history of marine bio slide show due in google drive before next class) -	Chapter 1
Week 2 - Sept. 6	History of Marine Science, start on ecology	
Week 3 - Sept. 13	Before class take Quiz 1- ch. 1, classification and history - TENTATIVE FIELD TRIP TO PLEASURE BEACH!! Be prepared to get wet!	Chapter 2
Week 4 - Sept. 20	Lecture: Ecology (chapter 2)	Chapter 7
Week 5 - Sept. 27	Quiz 2 - chapter 2 - Lecture: Chapter 7 (Seaweeds & marine plants) Research topic due = 10 points!	
Week 6 - Oct. 4	Quiz 3 - chapter 7 - Lecture: chapter 8.1 - 8.4	Chapter 8.1 - 8.4
Week 7 - Oct. 11	Lecture: Chapter 8.5 - 8.8 and then Test #1 Chapter 1, 2, 7, 8.1 - 8.4	Chapter 8.5 - 8.8
Week 8 - Oct. 18	chapter 9.1 - Lecture: Mollusks	Chapter 9.1
Week 9 - Oct. 25	Quiz 4 - ch. 8.5-8.8 & 9.1 Mollusk activity - Lecture: ch.9.2 - 9.5	Chapter 9.2-9.5
Week 10 - Nov. 1	Quiz 5 - chapter ch. 9.2 - 9.5 - Lecture: ch. 9.6 - 9.9	Chapter 9.6 - 9.9
Week 11 - Nov. 8	Lecture: 10.1 - 10.3 (Jawless fish & sharks) and then test #2 ch.8.5 - end of ch. 9	Chapter 10.1 -10.3
Week 12- Nov. 15	Lecture: 10.4 - 10.6 Lobe & ray-finned fish & adaptations	Chapter 10.4 - 10.6
Nov. 22	THANKSGIVING BREAK - NO CLASS	
Week 13 - Nov. 29	Research paper due w/ bibliography (100 pts) - Marine Reptiles	Chapter 11
Week 14 - Dec. 6	Quiz 6 - chapter 10 & 11 - Lecture: ch. 12 - marine mammals	Chapter 12
Week 15 - Dec. 13	Project Presentation (30 points) due then 3 rd exam (chapter 10 - 12)	DONE!!!

Detailed Syllabus

Introduction to Marine Biology - 4th edition - By Karleskint, Turner and Small

- Chapter 1 Science and Marine Biology
 - The Importance of Ocean and Marine Organisms
 - Study of the sea and its inhabitants
 - Marine Biology - A history of changing perspectives
- Chapter 2 Fundamentals of Ecology
 - Study of Ecology
 - Ecology and the Physical environment
 - Populations
 - Communities
 - Ecosystems - Basic Units of the Biosphere
 - Biosphere
- Chapter 5 Biological concepts
 - Classification: Bringing Order to Diversity
- Chapter 7 Multicellular Primary Producers
 - Multicellular Algae
 - Marine flowering plants
- Chapter 8 Lower Invertebrates
 - What are animals?
 - Sponges
 - Cnidarians: Animals with Stinging cells
 - Ctenophores
 - The evolution of Bilateral Symmetry
 - Flatworms
 - Ribbon worms
 - Lophophorates
- Chapter 9 Higher Invertebrates
 - Molluscs
 - Annelids: The segmented worms
 - Nematodes
 - Ecological roles of Marine worms
 - Arthropods: Animals with Jointed appendages
 - Arrowworms
 - Echinoderms: animals with Spiny skins
 - Hemichordates
 - Invertebrate Chordates
- Chapter 10 Marine Fishes
 - Fishes and Other Vertebrates
 - Jawless Fishes
 - Cartilaginous Fishes
 - Lobefins
 - Ray-finned fishes
 - Biology of fishes
- Chapter 11 Marine Reptiles and Birds
 - General characteristics of reptiles
 - Sea turtles
 - Marine Iguanas
 - Marine Birds
 - Shorebirds
 - Penguins
- Chapter 12 Marine Mammals
 - Characteristics of marine mammals
 - Sea otters
 - Polar bears
 - Pinnepeds (seals, sea lions & walruses)
 - Sirens (manatees and dugongs)
 - Cetaceans (dolphins, whales & porpoises)

Detailed Course Objectives:

After completing this course, the student will be able to:

1. Understand the importance of the ocean and marine organisms.
2. Know how the world's ecosystems are interconnected and form the biosphere
3. Identify biotic factors that influence life in the ocean.
4. Discuss the productivity and trophic pyramids in the ocean.
5. Be able to distinguish between different divisions and structures of marine algae.
6. Distinguish between marine algae and marine flowering plants.
7. Classify living organisms of major phyla.
8. Identify the structure and function of lower invertebrates like sponges, cnidarians, ctenophores and worms.
9. Identify the structure and function in high invertebrates like mollusks, bilaterally symmetrical worms, arthropods and echinoderms.
10. Be able to identify common organisms of Long Island Sound and the New England coast.
11. Discuss adaptations and strategies of marine organisms for survival, reproduction, growth, mobility, defense, and competition.
12. Identify and characterize pelagic, coastal, benthic, estuarine, and intertidal habitats.
13. Identify the major groups of fish and their distinguishing features.
14. Identify the major groups of marine mammals and their distinguishing features.