

SIO126 Marine Microbiology

Time and location: MWF 9-9:50. Warren Lecture Hall 2207

Instructor: Brian Palenik, 3110 Hubbs Hall, SIO
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Office hours: By appointment

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Course web site: triton.ed.ucsd.edu

The lecture notes (ppt slides) will be available usually on the day of the lecture.

Sections: W 11-11:50 (Center Hall, 220) F 11-11:50 (York 3030).

First sections will be Jan 16(W section), Jan 11 (F section).

Grading: There will be three quizzes and a final exam. The final exam will count for 30% of the grade. The lowest quiz score will be dropped and the remaining two will count for 50%. The quizzes will be a combination of multiple choice, short answer, and short essay and will cover the material immediately preceding them. The final will be comprehensive and will be similar to the quizzes in format. Three short assignments will count for 5% each. These are typically short 1 page paper reviews of assigned papers. Section attendance and participation will count for 5%.

Cheating: The University imposes strict guidelines on academic integrity (<https://senate.ucsd.edu/Operating-Procedures/Senate-Manual/Appendices/2>) and these will be enforced. Anyone caught cheating will receive an F for the course and will be reported to the Academic Integrity coordinator. Please bring a photo ID to all exams and quizzes. You may be required to sign an attendance sheet when you turn in your exams.

Recommended Texts:

There will be required reading posted on TritonEd.

Review Articles: An entire issue of Nature Reviews Microbiology has been devoted to marine microbiology (5:2007).

<http://www.nature.com/nrmicro/focus/marinemicrobiology/index.html>

M Jan 7 Introduction to the marine environment

W Jan 9 Physics of the marine environment

F Jan 11 Chemistry of the marine environment

M Jan 14 Methods in Marine Microbiology A (Field sampling etc)

W Jan 16 Methods in Marine Microbiology B (Molecular approaches)

F Jan 18 Methods in Marine Microbiology C (Genomics)

M Jan 21 Holiday

W Jan 23 The Prokaryotic Cell

F Jan 25 Phylogenetic Diversity of Marine Prokaryotes

M Jan 28 **Quiz 1 (material through Jan 25)**

W Jan 30 Metabolic Diversity A

F Feb 1 Metabolic Diversity B **Assignment 1 Due in Class**

M Feb 4 Metabolic Diversity C Eukaryotic Diversity (Phototrophs)
W Feb 6 Eukaryotic Diversity (Heterotrophs/Mixotrophs)
F Feb 8 Peter Franks

M Feb 11 Marine Viruses
W Feb 13 Cold Deep Sea and Hydrothermal Vents
F Feb 15 **Quiz 2**

M Feb 18 Holiday
W Feb 20 The Microbial Loop
F Feb 22 Kelly Goodwin Marine Microbes and Disease I

M Feb 25 Marine Microbes and Disease II **Assignment 2 Due in class**
W Feb 27 Sea Ice/Changing Oceans
F Mar 1 Marine Metagenomics in Diverse Environments

M Mar 4 Symbiotic Associations A
W Mar 6 Symbiotic Associations B
F Mar 8 Paul Jensen, Marine Natural Products

M Mar 11 **Quiz 3**
W Mar 13 Symbiotic Associations C **Assignment 3 Due in class**
F Mar 15 Current directions and developments in marine microbiology/

FINAL W March 20, 8-11, Location TBA.

Writing assignments.

Writing assignments are summaries of provided papers (different from occasional class readings)

Summaries address three main questions:

- 1) What research questions/hypotheses was the paper trying to address and why?
- 2) What methods did it use?
- 3) What were its conclusions? How this contribute to our understanding of the field?

Papers are meant to be about 1 page of about three paragraphs. DO NOT USE LISTS.

Please turn it in as a hard copy in class AND via Turnitin.

The following may help you write a summary for is assignment.

<https://www.wikihow.com/Summarize-a-Journal-Article>

Winter 2019	
Winter Quarter begins	Wednesday, January 2
Instruction begins	Monday, January 7

Martin Luther King, Jr. Holiday	Monday, January 21
Presidents' Day Holiday	Monday, February 18
Instruction ends	Friday, March 15
Final Exams	Saturday – Saturday, March 16–23
Winter Quarter ends	Saturday, March 23