SIO126 Marine Microbiology

SIO126 is an introduction to the unicellular microbes that live in the oceans and how they interact with their physical and chemical environment and each other.

Time and location: MWF 10-10:50. (via Zoom)
Instructor: Brian Palenik, 3110 Hubbs Hall, SIO
Phone: 858-534-7505, email: bpalenik@ucsd.edu
"Office" hours: By appointment
TA: Kaitlin Creamer email:kcreamer@ucsd.edu
Course web site: Canvas
The lecture notes (pptx) will be available usually on the day of the lecture. Recordings of the lectures will be made available afterwards.
Sections: WF. 11-11:50 (via Zoom)
Grading: There will be four quizzes (80 %). Each quiz will have two parts, one a vocabulary/concept part (5%) and one part with short essays (15%). The first three quizzes will cover the material immediately preceding them while the fourth will be a little broader in scope. Three short assignments will count for 5% each (15 % total). These are typically short 1 page paper reviews of assigned papers. Class and 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. Plagiarism of a writing assignment will result in a 0 for that assignment and will be reported to the Academic Integrity coordinator. Anyone caught cheating on an exam will receive an F for the course and will be reported to the Academic Integrity coordinator. Plagiarism includes copying material from sources without citation. Putting text from papers in quotes as part of a citation is not appropriate in scientific writing.
Recommended Texts:
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
Covid-19:
I believe that learning partly occurs through interactions during class time. It is a chance for me to understand what concepts I might need to explain better as well as a chance for you to synthesize material from this class and others by asking questions. I expect synchronous participation. If you are in a different time zone or having other difficulties with zoom participation please let me know.
SCHEDULE
M Jan 4 Introduction to the marine environment
W Jan 6 Physics of the marine environment
F Jan 8 Chemistry of the marine environment

M Jan 11 Methods in Marine Microbiology A (Field sampling etc)
W Jan 13 Methods in Marine Microbiology B (Molecular approaches)
F Jan 15 Methods in Marine Microbiology C (Genomics)

M Jan 18 Holiday MLK
W Jan 20 The Prokaryotic Cell
F Jan 22 **Quiz 1 (material through Jan 15)**

M Jan 25 Phylogenetic Diversity of Marine Prokaryotes
W Jan 27 Metabolic Diversity A
F Jan 29 Metabolic Diversity B **Assignment 1 Due**

M Feb 1 Metabolic Diversity C Eukaryotic Diversity (Phototrophs)
W Feb 3 Eukaryotic Diversity (Heterotrophs/Mixotrophs)
F Feb 5 **Quiz 2**

M Feb 8 Phytoplankton blooms
W Feb 10 Marine Viruses
F Feb 12 The Microbial Loop **Assignment 2 Due**

M Feb 15 Holiday
W Feb 17 Cold Deep Sea and Hydrothermal Vents
F Feb 19 Marine Microbes and Disease I

M Feb 22 Marine Microbes and Disease II
W Feb 24 Sea Ice/Changing Oceans
F Feb 26 **Quiz 3**

M Mar 1 Symbiotic Associations A
W Mar 3 Symbiotic Associations B
F Mar 5 Kaitlin Creamer, Marine Natural Products **Assignment 3 Due**

M Mar 8 Symbiotic Associations C
W Mar 10 Current directions and developments in marine microbiology
F Mar 12 **Quiz 4**
FINAL No final

Writing assignments.
Writing assignments are summaries of provided papers (different from occasional class readings) There will be three.
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 Online. The following may help you write a summary for this assignment. https://www.wikihow.com/Summarize-a-Journal-Article