

# SIO 129

## Marine Chemical Ecology

### Course and Lecture Outline - Winter Quarter 2017

**Tuesday-Thursday 9:30-10:50**

**214 Scholander Hall, SIO**

<p><b>10 January</b> Introduction to Chemical Ecology, History and Terminology, Compound Classification and Basic Biosynthesis</p> <p><b>12 January</b> Chemistry and Adaptations of Marine Bacteria and Fungi</p> <p><b>17 January</b> Chemical Ecology of Phytoplankton, Red Tides, Toxin production, Herbivore deterrence</p> <p><b>19 January</b> Chemical Ecology of Marine Microfauna</p> <p><b>24 January</b> Marine Plant-Herbivore Interactions: Green and Blue-Green Algae</p> <p><b>26 January</b> Marine Plant-Herbivore Interactions: Red Algae</p> <p><b>31 January</b> Marine Plant-Herbivore Interactions: Brown Algae <i>Have Term Paper approved</i></p> <p><b>2 February</b> The Impacts of Herbivory on Coral Reef Ecology, Overfishing</p> <p><b>7 February</b> Chemical Ecology of Sea Hares</p> <p><b>9 February</b> Chemical Ecology of Marine Invertebrates - Echinoderms</p>	<p><b>14 February</b> Chemical Ecology of Sessile Marine Invertebrates - Octocorals</p> <p><b>16 February</b> <i>Midterm Exam</i></p> <p><b>21 February</b> Chemical Ecology of Sessile Marine Invertebrates - Bryozoans</p> <p><b>23 February</b> Chemical Ecology of Sessile Marine Invertebrates - Ascidians</p> <p><b>28 February</b> Chemical Ecology of Sessile Marine Invertebrates - Sponges</p> <p><b>2 March</b> Sponge Metabolites and their Natural Functions</p> <p><b>7 March</b> Bacterial Symbiosis in Sessile Marine Invertebrates</p> <p><b>9 March</b> Chem. Ecology of Nudibranchs and Related Opisthobranchs</p> <p><b>14 March</b> Fish Toxins and Chemical Defenses</p> <p><b>16 March</b> The Relationship between Marine Pharmacology and Chemical Ecology <i>Term Papers Due</i></p> <p><b>20 March</b> (week of) <i>Final Exam</i></p>
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This is a survey class that begins at the most simple of marine life and works upward to more complex plants and animals. The foundations of chemical biosynthesis are introduced as are the structures of unique bioactive natural products and their biological effects.

A fair understanding of organic chemistry will be expected, but the class is not focused on chemistry but more on the ecology of chemical defenses, communication and biosynthesis.  
biological sciences