

Course: Phytoplankton (BIO 471/571)
Instructor: J. Craig Bailey
Office: 2339 Center for Marine Science
Phone: 962-2371 (office), 962-2372 (lab)
e-mail: baileyc@uncwil.edu
Lecture: 11 AM - 12:15 PM, W,F, Room 310, Friday Hall
Laboratory: 2 - 4:50 PM, F, Room 1209 MG (CMS)

Course objectives: This course is designed to provide students with an introduction to the biology and biodiversity of freshwater and marine phytoplankton. The morphology, life histories, and physiology of the major groups of eucaryotic microalgae will be discussed within a phylogenetic framework. Patterns of distribution and abundance will be examined and the ecology of keystone taxa will be emphasized.

Grading policy: Your final grade will be determined by the average of four equally weighted scores. Three lecture exams (100 points each) will be given that may include matching, fill-in-the-blank, multiple choice and/or essay type questions. Your laboratory grade (100 points) will be based on satisfactory completion of assigned projects and class participation. Thus, a total of 400 points are possible. *Extra credit work/points will not be granted under any circumstances.* Review sessions will be held prior to each exam. My lecture notes or PowerPoint presentations are not available to students.

A special note about exams and grading: The Department of Biological Sciences recognizes that English composition is a fundamental element of education and expects students enrolled in biology courses to demonstrate a basic knowledge of grammar, spelling and other aspects of sentence structure. Hence, in BIO 471/571 exam questions that require written responses, whether short answers (e.g., definitions or identifications) or essays, will be graded 95% on factual content and accuracy and 5% on correct grammar, spelling and other basic elements of English composition.

Laboratory specifics: Field-collected and cultured material will be used to demonstrate taxa discussed in lecture. Hands-on experiments will be used to demonstrate several different techniques useful for studying phytoplankton species and populations. In addition, students are required to isolate into nonaxenic culture five species that will be submitted for a grade. Isolates must be identified to the genus or, preferably, species level. Isolates of species routinely encountered in regular lab sessions may be submitted, but will be heavily penalized. Lab handouts and further details will be provided prior to each week's lab.

Phytoplankton, Fall 2001
Schedule of Lecture Topics

8/22	Course introduction
8/24	A wee bit o' history
8/29	Marine heterotrophs
8/31	Algal and protistan phylogeny
9/5	Key characters: flagellar apparatus, photosynthetic pigments, cell walls, storage products
9/7	Cyanobacteria
9/12	Prymnesiophyceae (=Haptophyceae)
9/14	Cryptophyceae
9/19	Dinophyceae I
9/21	Dinophyceae II
9/26	EXAM I
9/28	Stramenopiles <i>sensu lato</i> and the Kingdom Chromista
10/3	Heterokonts: flagellar transformation
10/5	Chrysophyceae, Synurophyceae, Chrysomeridales
10/10	Dictyochophyceae, Pelagophyceae, Pinguiphyceae
10/17	Raphidophyceae, Phaeothamniophyceae
10/19	Eustigmatophyceae, Xanthophyceae
10/24	Bacillariophyceae I
10/26	Bacillariophyceae II
10/31	Chromophyte phylogeny
11/2	EXAM II
11/7	Euglenoids
11/9	Chlorophycean flagellates
11/14	Cocoid chlorophyceae
11/16	Harmful Algae and algal toxins
11/28	Origin of plastids; primary and secondary endosymbiosis
11/30	Aquatic photosynthesis and the LHC
12/5	Nutrient assimilation and physiology
12/7	Primary production and the microbial loop
12/12	Remote sensing, weather and biogeochemistry