

Course Code & No. - Section:	BIOL 421/5 – Sect. 1
Course Title (Credits):	Ecology of Aquatic Systems(3+1)
Term & Year:	Fall / 2014
Course Ref. No. (CRN):	80064, 80066
Instructor:	Dr. Chuck Levitan
Phone(s):	X7455 (CL)
Email:	clevitan@sierranevada.edu
Office:	TCES, room 225
Office Hours:	MWF 12:00 - 1:00, TTh 3:00-4:00p.m., and by appointment
Class Meeting Time:	TTH 4:00 - 6:50 p.m., Lab F 9:00-3:00
Location:	TCES 205 (Lab TCES 204)
Prerequisites (from Catalog):	ENVS 200 and 205 Corequisite: BIOL 425

Course Description

Study of ecology of oceans, intertidal zones, freshwater lakes, streams, and wetlands. Course includes physics and chemistry of water bodies. Includes taxonomy of aquatic organisms, mechanisms of predation and herbivory, and physiology. Local fields trips and laboratory work emphasizes the limnology of Lake Tahoe basin lakes and streams, Great Basin alkaline lakes, and Pacific coast intertidal and deep ocean waters.

Student Outcomes

Upon successful completion of this course, a student will be able to:

1. Describe, identify, and locate lakes of different origin and trophic status
2. Gather and format limnological data for use in analysis
3. Apply the concepts of ecology to human- ecosystem interactions, considering economics and culture
4. Understand sampling strategies and sample treatment.
5. Interpret and predict effects of perturbation of aquatic food webs

Methods of Assessing Student Outcomes

Student outcomes will be assessed using the following:

1. Demonstration of field proficiency
2. Writing assignment(s), submitted in stages, both based on library and lab work;
3. Applied and theoretical in-class, problems; Projects done in the field.
4. Written in-class, closed-book, comprehensive final examination and/or project that includes coverage of the topics discussed in the course outline.

Instructional Strategies

This class will utilize lectures, movies, lab work, small groups, and individual work in class using laptop computers, inquiry learning, case studies, and homework assignments. The course makes use of the *Moodle* course management system.

Required Texts and Materials

1. *Freshwater Ecology*; Second Ed., Dodds, W., and M. Whiles; © 2010; ISBN: 978-0-12-374724-2
2. Laptop computer (one that meets the published SNC Laptop Requirements)

Attendance

Work must be submitted on time; in-class exercises are due in class, and roll will be taken for scholarship purposes. Students should be on time to participate in class activities.

Research Project

Any research project involving human or animal subjects must be submitted to the College Research Committee for approval. Submit your proposal to your instructor by September 10, 2012.

Class Requirements

Please participate. Assignments due at beginning of each class. Half credit for assignments up to a week late. Please don't use laptops and phones except when requested. Students should dress appropriately for outdoor exercises. Students may be requested to offer cars for car-pooling; gas expenses will be compensated. Work cooperatively on all problems, questions, essays, and labs. Work alone on exams. Each student turns in each assignment.

Sanctions for Cheating and/or Plagiarism

The Honor Code

The faculty of SNC believes students must be held to high standards of integrity in all aspects of college life in order to promote the educational mission of the College and to encourage respect for the rights of others. Each student brings to the SNC community unique skills, talents, values and experiences which, when expressed within the community, contribute to the quality of the educational environment and the growth and development of the individual. Students share with members of the faculty, administration and staff the responsibility for creating and maintaining an environment conducive to learning and personal development, where actions are guided by mutual respect, integrity, responsibility and trust. The faculty and students alike must make diligent efforts to ensure high standards are upheld by their colleagues and peers as well as themselves. Therefore faculty and students accept responsibility for maintaining these standards at Sierra Nevada College and are obligated to comply with its regulations and procedures, which they are expected to read and understand.

Consequences of Violating the Student Honor Code

SNC students and faculty share the responsibility for maintaining an environment of academic honesty. Thus, all are responsible for knowing and abiding by the SNC Faculty/Student Honor Code published in the current SNC Catalog. Faculty are responsible for presenting the Honor Code and the consequences of violating it to students at the start of their classes AND for reporting all incidences of academic dishonesty to the Provost. Students are responsible for knowing what constitutes CHEATING, PLAGIARISM and FABRICATION and for refraining from these and other forms of academic dishonesty. Violations of the Honor Code become part of a student's academic record.

1st Offense: Student receives a zero for assignment/exam and counseling with faculty on the honor code, consequences for violating the honor code, and the value of academic honesty in learning.

2nd Offense: Student fails course and receives counseling with faculty on the honor code, consequences for violating the honor code, and the value of academic honesty in learning.

3rd Offense: Student is expelled.

Moodle Course Site: <http://sncmoodle.sierranevada.edu/>

Grading Policy-The Assignments:

ASSIGNMENT	Points Each	Number	Total	When Due
Chapter assignments (CA)	15	4	60	Tues before class
Short Assignments (SA)	25	4	100	Thurs Midnight
Labs (LA)	40	6	240	Mon Midnight
Final Project	200	1	200	Last Lab
Tests: Two	200	2	400	In Class
TOTAL		25	1000	

ADA Accommodations

In accordance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, students with a documented disability are eligible for support services and accommodations. If a student wishes to request an accommodation, please contact the Director of Academic Support Services, Henry Conover, at (775) 831-1314 x7534, hconover@sierranevada.edu or go to the OASIS offices on the third floor of Prim Library within the first week of the semester.

The SNC Email System

The SNC email system is the official communication vehicle among students, faculty members and administrative staff and is designed to protect the confidentiality of student information as required by the Family Educational Rights and Privacy Act of 1974 Act (FERPA). Students should check their college email accounts daily during the school year.

Students have a right to forward their SNC e-mail to another e-mail account (for example, @hotmail or @gmail). However, confidentiality of student information protected by FERPA cannot be guaranteed for SNC e-mail forwarded to an outside vendor. Having email redirected does not absolve a student from the responsibilities associated with official communication sent to his or her SNC email account.

Class Schedule

For the rest of the Syllabus, you may use / include any additional materials that you choose.

The Mission Statement:

Sierra Nevada College graduates will be educated to be scholars of and contributors to a sustainable world. Sierra Nevada College combines the liberal arts and professional preparedness through an interdisciplinary curriculum that emphasizes entrepreneurial thinking and environmental, social, economic and educational sustainability.

The Core Themes:

Liberal Arts

Professional Preparedness

Entrepreneurial Thinking

Sustainability

Prim Library Resources

Using the library's resources effectively (not just internet resources) contributes to developing each of SNC's core themes by exposing students to high quality academic resources, diverse opinions, new ideas, and a future that includes building on a liberal arts education. In this course, you will be expected to utilize the library's resources (either on-site or remotely) as you complete your assignments.

Prim Library Resources for CHEM 101 and CHEM 105 include, but are not limited to:

1. Books (can be checked out): such as Lipson C. Cite Right: a Quick Guide to Citation Styles. Chicago: University of Chicago Press; 2006. LCC number PN171. F56L55 2006. Includes a section on CSE style.
2. Electronic databases (for peer-reviewed primary source research articles, secondary source reviews, newspaper magazine articles, and online books): Electronic databases most likely to include articles on biology topics are EBSCO: Academic Search Premier, Environment Complete, General Science Collection, GreenFILE, Health Source, Newspaper Source, and TOPICsearch; BioOne; and GREENR.
3. Hardcopy periodicals: Prim Library has current subscriptions for Science, New Scientist, Science News, Scientific American, and National Geographic Magazine. Any of these

are likely to have secondary source articles about science topics written for educated people who are not necessarily scientists. You will find these easy to read and articles will include references to primary source articles. Full-text articles from many more periodicals are available through the electronic databases.

4. **Lib Guides:** <http://Libguides.sierranevada.edu> These web pages contain instructions about how to use resources available at Prim Library, Prim Library resources for science topics, how to evaluation the appropriateness of information from the internet for a research paper, how to cite sources, and other topics related to finding and using information.

Week of	Dodds Chapters	Topics	Lab Topic	Lab Venue
8/19/14	1,2,3,7,24	Lake structure, orientation	Field Sampling	Cascade Lake
8/26/14	8,9,12	Organisms: Plants	Productivity, Chemistry	Martis Lake
9/2/14	13,14,10	Nutrient Cycling, Organisms	Production, Oxygen, CO ₂ , wetlands	Slaughterhouse Canyon
9/9/14	17,18	Eutrophication	Nutrient Cycling, BOD	Independence Lake (Sewage Plant?)
9/16/14	11,19,20	Food Webs	Fish Biology, Shrimp Biology	Fish Hatchery (Pyramid?)
9/23/14	21, 22	Ecology and community interactions	Exotic lakes, clear lakes	Lassen Nat Pk. (weekend)
9/30/14	4,5,6	Rivers	Land-Water connections	Taylor Creek
10/7/14	15,24	Landscapes and ecosystems	Research work	Research/Reports

Other field trips: Lake Tahoe, Pyramid Lake