

SYLLABUS GEOGRAPHY/ENV. STUDIES 162A/AL: WATER QUALITY

University of California at Santa Barbara

FALL 2006

Enrollment code: Lecture 162A; Laboratory 162AL**Instructor:** Hugo A. Loáiciga (Enrollment Code 06); **email** = hugo@geog.ucsb.edu ;Web site: <http://www.geog.ucsb.edu/~hugo>**Office:** 5712 Ellison Hall**Office hours:** Tuesday, 11 am- 12 noon; Thursday: 11 am –12 noon, or by appointment**Teaching Assistant:** TBA**Office hours:** TBA**Lecture:** 9:30-10:45 am Buchanan 1930**Laboratory:** see Rules and Regulations 5 and 6**Textbook:** Water Quality, by Tchobanoglous and Schroeder, UCSB's bookstore; 162A reader at Grafikart in Isla Vista; one copy of the textbook in the Reserve Book Room (RBR, Davidson Library)**Prerequisites:** a foundation in chemistry, biology, and hydrology is desirable.**Course objectives:** to conduct a comprehensive review of the physical, chemical, and biological characteristics of surface waters and ground waters; learn ways to improve drinking water quality; study the treatment and management of chemically and biologically polluted waters.

GRADING

Item	Date or date due	Weight
Midterm Exam 1 (open book)	Thursday October 26 th 9:30 -10:45 am Buchanan 1930	15 %
Midterm Exam 2 (open book)	Tuesday November 21 st 9:30 - 10:45 am Buchanan 1930	15%
Homeworks	~ weekly, about 8-9 total	16 %
Laboratory	See Rules and Regulations 5-6	24 %
Final Examination (open book)	Wednesday December 13 th 8-11 am Buchanan 1930	30 %
Total		100%

RULES AND REGULATIONS:

1. There will be 8 to 9 homeworks altogether, assigned weekly. Homeworks are due on Thursdays at 9:30 m, unless specified otherwise by the Instructor. Turn them in to the T.A. Homework solutions will be posted at 11:00 am the day they are due.
2. No late homeworks, or laboratory reports, or make-up examinations will be accepted or administered, unless a validated medical excuse is presented certifying physical or mental incapacitation that precluded the student from completing and/or turning in the assignment. A validated medical excuse is one issued by a registered physician or the equivalent in the State of California. The student must provide credible evidence that the medical conditions prevented submittal of course work or presence in the classroom. Please notify the instructor immediately by telephone or e-mail if you cannot attend an exam or submit due work.
3. The dates of tests and assignments are definitive. If scheduling conflicts arise with other courses, please make early arrangements with the instructors of those courses. The laboratory assignments may not be substituted with any other type of course work.
4. Attendance to lecture is not required. Past experience shows, however, a strong correlation between failing grades and absence during lectures. There is no AS notetaking for this course.
5. The laboratory is taken concurrently with the lecture course 162A. The laboratory is an integral part of the course as indicated in the Table of page 1.

6. The Laboratory consists of four research projects, see the Table:

Lab/project(%)	Topic	Meeting : date/time	Date due
Excel workshop	Introduction to spreadsheet calculations and graphics	Tuesday Oct. 3 rd 2-3:30 pm or Wednesday Oct. 4 th 2-3:30 pm, Room 2610 Ellison Hall	Not applicable
Lab 1 (4%)	EPA water quality criteria and standards	Explain in class, Thursday Sept. 28 th	Thursday Oct. 12 th at 9:30 am in class
Lab 2 (6%)	Water chemistry and quality analysis	Tuesday Oct. 17 th 2-3:30 pm or Wednesday Oct. 18 th , 2-3:30 pm, room 2610 Ellison Hall	Thursday Nov. 2 nd at 9:30 am in class
Lab 3 (8%)	Coastal pollution data analysis	Explain on Tuesday Nov. 7 th 2-3:30 pm or Wednesday Nov. 8 th 2-3:30 pm Ellison Hall 2610 ; Field trip to creek water sampling: Saturday Nov. 11th OR Sunday Nov. 12th time: 10 am-2pm; sign up sheets in Room 3610 Ellison: first come first served.	Tuesday Nov. 21 st at 9:30 am in class
Lab 4 (6%)	Water contamination treatment research	In class, Thursday Nov. 28 th	Tuesday Dec. 5 th 9:30 am in class
Total = 24%			

Instructions on methodology and presentation of laboratory assignments and research project will be given during the meeting times. **For Lab 3's field trip, each student must sign up for one of the two alternative dates only.**

COURSE CONTENTS

WEEK	Reading assignment	SUBJECT
1,2	Book: pp. 3-37; pp. 43-56 reader: pp. 15-38	Water use; rivers and ground waters: chemical origin Characteristics of water Tentative book problems: 1.10, 1.25; 1.28, 1.32; 2.1, 2.2, 2.4, 2.5, 2.10
3	Book: pp. 57-77 & 89-94 Reader: pp. 1-10; 39-50	Characteristics of water Tentative book problems: 2.13, 2.14, 2.16, 2.21
4	Book: pp. 95-107 Reader: 51-70	Characteristics of water Tentative problems: 2.33, 2.37, 3.4
5	Book: pp. 108-114, 120-149 Reader: pp. 71-100	Characteristics of water Tentative book problems: 2.39, 2.40, 2.43, 2.50, 3.18
6	Book: pp. 163-207 Reader: pp. 101-132	Characteristics of water Tentative book problems: 2.61, 3.4, 3.8
7,8	Book: 211-224 Reader: 133-185	Significance of the characteristics of water Tentative book problems: 4.10, 4.11
8,9	Book: pp. 443-461 Reader: assigned labs	Water and Wastewater Treatment; environmental toxicology; elements of river biology Tentative book problems: 11.1; 11.12; 11.14
10	Notes	Risk Assessment and Water Quality Laws