San José State University
College of Social Sciences / Environmental Studies Department
Spring 2015, ENVS 110 Natural Resource Analysis (Course 23412)

"Our ability to govern ourselves has not kept pace with our ability to exert power over nature."
-George Soros

Instructor:	Lecture: Rachel Lazzeri-Aerts and Gina Bacigalupi Lab: Amy Petersen
Office Location:	Rachel and Amy: WSQ 115E; Gina: WSQ 216G
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Office Hours:	Rachel: Thur 1:30-3:00pm or by appointment Amy: Mon 10:30-11:30am or by appointment Gina: Tue 1:30-2:45 or by appointment
Class Days/Time:	Lecture: Fri 1:30-4:15pm Lab (sec 2): Mon/Fri 9:00-10:15am Lab (sec 3): Tue/Fri 10:30-11:45am
Classrooms:	Lecture: DMH 164 Lab: WSQ 208 (Mon/Tue) and DMH 236 (Fri)
Prerequisites:	ENVS 1, ENVS 10 and STAT 95

Course Overview and Description

Catalog Description
Quantitative analysis of Earth's natural resources. Topics typically include the status and trends of resources such as topsoil, agriculture, water, energy, wildlife and the impacts of human population growth on these resources. Emphasis is on problem solving and computational methods applied to resource management problems. Prerequisite: ENVS 1, ENVS 10, STAT 95.

Course Overview
Natural resources include all of the materials that we use to sustain our lives, build our civilizations, and create the luxuries and entertainments that we enjoy. There is nothing that we have that does not originate from the earth, from the sea, or from the sky. In an era of super-abundance it is easy to lose touch with the importance of these resources and the processes that renew them, but as resources become scarce our dependence on them is apparent. Human populations are increasing globally, escalating the pressure on limited resources. Throughout much of human history our response to natural resource deficits has been post-hoc, and reactionary. Our growing understanding of resource use on a global scale gives us an opportunity for conscious stewardship, not only of individual resources, but of the ecological cycles and processes that allow for sustainable productivity over the long term.

Student Learning Objectives

This course has been designed to help students explore and analyze issues related to natural resource management. We will survey topics related to the management of traditional renewable resources such as timber, soils, and fisheries. We will also discuss the ramifications of global economic dependence on non-renewable resources such as petroleum, coal, and uranium. In order to be effective as environmental scientists we must understand the issues surrounding natural resource use, and the tools that are used to analyze natural systems. As a class we will be devoted to demystifying quantitative approaches to understanding the natural world. We will work together to analyze current problems and present solutions, so that as a society we can move beyond reaction to pro-action in regard to natural resource management.

Required Texts and Materials

- *Flash Drive (bring to every lab meeting).*
- Preston, Richard. 2007. The Wild Trees: A Story of Passion and Daring.
- Gonick, L. and W. Smith. 2002. The Cartoon Guide to Statistics.
- Heinberg, R. 2003. The Party's Over: Oil, War, and the Fate of Industrial Societies.
- House, F. 1999. Totem Salmon: Life Lessons from Another Species.
- Klee, G.A. 1991. Conservation of Natural Resources. ***Available on CANVAS***
- Public Citizen. 2003. Water Privatization Fiascos: Broken Promises and Social Turmoil. A special report by Public Citizen's Water for All program. ***Available on CANVAS***
- "The Commons" ***Available on CANVAS***

Course Requirements

Canvas Instructions

For this course, all take home assignments, papers, and lab reports must be turned in through the Canvas learning management system, unless otherwise noted. If you have trouble with this, please come see one of us during class or office hours. **All assignments are due by 10:00am on the due date listed in the course calendar.**

Exams

A lecture final exam will include material from lectures, readings, films, and student presentation. A practical (hands-on) exam will be conducted during the last laboratory session and will cover all subjects addressed in the labs including the scientific method, data entry and analysis, and presentation of data.

Assignments

Weekly Quiz: At the beginning of each class period a short quiz or activity will be given covering material from readings and lectures. The quiz will be followed by a discussion on the issues discussed in the readings. In order to prepare for the quizzes it is essential that readings be done before class. **No make-up quizzes will be given for any reason**.

News Articles: Each student will find a news article (from a reputable news source) that relates to natural resources, natural resource use, or natural resource analysis. Each week 3-5 students will bring their article and present a summary to the class. A printed copy of the article with the student's name on it will be turned in to the lecture instructor following the presentation.

Research Project: Each student will gather, analyze, and present a data set of their choosing. This data set will be from a primary source (i.e. collected in the field). Students may work in groups of 2-4 if they choose. The project will include three steps.

1) A *proposal* will be submitted and approved by the instructors before beginning data collection. The proposal will include a short introduction (with research questions and hypotheses), and a methods section (describing how data will be collected and analyzed).

2) The final project will include a *written report*. The report will be 8-12 double spaced pages and will include a short **introduction** (with research questions and hypotheses), a **methods** section (describing how you gathered and analyzed data), a **results** section (describing the data that was collected in the context of your hypotheses), and a **conclusions** section.

2) A *presentation* will be given by each group of researchers during class time. The presentation should be 10-15 minutes in length, professional in quality, and cover all of the sections described above for the written report. PowerPoint presentations may be used, but are not required.

Class Participation

Students will be expected to actively participate in their learning. As much of this course is based on activities, presentations, and discussions, each student's participation is necessary for the class to function successfully. Students should arrive on time, prepared, be creative when they are presenting, and attentive and supportive when others are sharing their work. Be sure to complete assigned readings before class. Readings may also include articles distributed by instructor.

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of forty-five hours over the length of the course (normally 3 hours per unit per week with 1 of the hours used for lecture) for instruction or preparation/studying or course related activities including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.

Labs

Lab exercises will be conducted during the lab section and lab reports will be due the following Monday by 10:00am. Lab reports will follow the standard scientific format including: Introduction; Research Questions and Hypotheses; Methods (data collection and data analysis); Results (figures, tables, and narrative); Conclusions (hypotheses assessment and discussion of findings).

Extra Credit

Extra credit opportunities may be offered in class. Students are responsible for recording the details of these assignments.

Grading Policy

Your grade will be based on your assignments and class participation. All assignments are to be turned in through Canvas before the specified due date and time or at the beginning of the due date class unless otherwise indicated.

Grade scale:	97%-100% = A+	93% - 96% = A	90% - 92% = A-
	87% - 89% = B+	83% - 86% = B	80% - 82% = B-
	77% - 79% = C+	73% - 76% = C	70% - 72% = C-
	60% - 69% = D	less than 60% = F	

Grading Overview

Assignment	**Point Value**
Weekly Quizzes	160 (20 each)
News Article	20
Project Proposal	100
Final Project Report	100
Project Presentation	100
Final Exam	150
Lab Exercises	180 (30 each)
Lab Practical Exam	150
Participation	40
	1000 total

Penalty for late work

All assignments will be turned in by the due date at 10am. Assignments turned in after the due date will be dropped a 10%, and another 10% each week following. No late work will be accepted after the last class meeting.

Electronic Devices

The use of laptops during class time will be restricted to in-class activities and note taking. Students who use their computers for other activities or who abuse the equipment in any way, at a minimum, will be asked to leave the class and will lose participation points for the day. Cell phones, music players, and any other electronic devices must be turned off and stored in your backpack/purse. **Any** use of electronic devices during quizzes and exams is considered cheating, and will result in a failing grade.

Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor's permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material. Additionally, course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor-generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent.

University Policies

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drops, academic renewal, etc. Information on add/drops is available at http://info.sjsu.edu/web-dbgen/narr/soc-fall/rec-4.html. Late drop information is available at http://www.sjsu.edu/aars/policies/latedrops/. Students should be aware of the current deadlines and penalties for adding and dropping classes.

Academic Integrity

Students should know that the University's Academic Integrity Policy is available at http://www.sjsu.edu/senate/S07-2.htm. Your own commitment to learning, as evidenced by your

enrollment at San Jose State University and the University's integrity policy, require you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The website for Student Conduct and Ethical Development is available at http://www.sjsu.edu/studentconduct/. Instances of academic dishonesty will not be tolerated. **Cheating on exams and cheating or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) on written work will result in a failing grade in the course and sanctions by the University**. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include in your assignment any material you have submitted, or plan to submit for another class, please note that SJSU's Academic Policy F06-1 requires approval of both instructors.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the Accessible Education Center (AEC) at http://www.sjsu.edu/aec to establish a record of their disability.

Student Technology Resources

Computer labs for student use are available in the Academic Success Center located on the 1st floor of Clark Hall, on the 2nd floor of the Student Union, and in the Martin Luther King Library. Additional computer labs may be available in your department or college. Media Services in IRC 112 lends a variety of A/V equipment, including digital and VHS camcorders; VHS and Beta video players; 16 mm, slide, overhead, DVD, CD, and audiotape players; sound systems and wireless microphones; and projection screens and monitors.

Learning Assistance Resource Center

The Learning Assistance Resource Center (LARC) in Room 600 of the Student Services Center is designed to assist students in the development of their full academic potential and to motivate them to become self-directed learners. The center provides support services, such as skills assessment, individual or group tutorials, subject advising, learning assistance, summer academic preparation and basic skills development. The LARC web site: http://www.sjsu.edu/larc

Course Calendar Please note that the course calendar may change based on the progress of the class.

Date	Lecture Topic	Lab Topic	Readings	Due
Fri 23 Jan	Intro. History of human resource use. Renewable/non-renewable resources.	Lab Intro		
Mon 26 Jan/ Tue 27 Jan		Start Lab 1 (Basics)	Gonick Ch. 1-2	
Fri 30 Jan	Aquatic Systems: Fresh water	Finish Lab 1	SJSJ Academic Integrity; House Ch. 1-5	Quiz
Mon 2 Feb/ Tue 3 Feb		Start Lab 2 (Textiles)	Gonick Ch. 9	Lab 1
Fri 6 Feb	Aquatic Systems: Marine	Finish Lab 2	House Ch. 6-10	Quiz
Mon 9 Feb/ Tue 10 Feb		Start Lab 3 (Fisheries)	Gonick Ch. 11	Lab 2
Fri 13 Feb	Soil Properties and Conservation	Finish Lab 3	Klee Ch. 3	Quiz
Mon 16 Feb/ Tue 17 Feb		Start Lab 4 (Canopy Cover)		Lab 3
Fri 20 Feb	Forestry Part 1	Finish Lab 4	Preston Sec 1-3	Quiz
Mon 23 Feb/ Tue 24 Feb		Project Brainstorm		Lab 4
Fri 27 Feb	Forestry Part 2	Project Brainstorm	Preston Sec 4-5	Quiz
Mon 2 Mar/ Tue 3 Mar		Project Proposal Work Time		
Fri 6 Mar	Project Proposal Presentations	Project Proposal Work Time		Written Proposal
Mon 9 Mar/ Tue 10 Mar		Start Lab 5 (Population Growth)		
Fri 13 Mar	Energy	Finish Lab 5	Heinberg Ch. 1-3	Quiz
Mon 16 Mar/ Tue 17 Mar		Start Lab 6 (Energy)		Lab 5
Fri 20 Mar	Water Privatization	Finish Lab 6	P. Citizen	Quiz
23-27 Mar	SPRING BREAK	NO CLASS		
Mon 30 Mar/ Tue 31 Mar	(TUE: CEASR CHAVEZ DAY—NO CLASS)	Final Project Work		Lab 6
Fri 3 Apr	Global Resources and "the Commons"	Final Project Work	The Commons	Quiz
Mon 6 Apr/ Tue 7 Apri		Final Project Work		
Fri 10 Apr	TBD	Final Project Work		
Mon 13 Apr/ Tue 14 Apr		Final Project Work		
Fri 17 Apr	Presentations	TBD		
Mon 20 Apr/		TBD		

Tue 21 Apr				
Fri 24 Apr	Presentations	TBD		
Mon 27 Apr/ Tue 28 Apr		TBD		
Fri 1 May	Presentations Final Review	TBD		Final Project Report
Mon 4 May/ Tue 5 May		TBD		
Fri 8 May	Final Exam	Lab Practical Review		Peer Evals
Mon 11 May/ Tue 12 May		Lab Practical Final		