

GEOL 335 – Earth Resources and the Environment, Spring 2016.

MW 10-11:15 am, Lilly Fong Building (LFG) 102

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Office Hours: Monday 1:00-2:00pm, Tuesday 11:00-12:00 PM, and by appointment

Course Format: Traditional twice-weekly lectures

Required Textbook: Earth Resources and the Environment (4th ed), by J.R. Craig, D.J. Vaughan and B.J. Skinner

Prerequisites: None

Purpose of this class:

This course examines the range of Earth resources that have been identified as useful to humans and explores the impacts of resource procurement, use and disposal on the environment. Specifically, the geologic origin, availability, exploitation and use of nonrenewable natural resources are studied. Nonrenewable natural resources covered in class include both metallic and nonmetallic as well as energy resources. Additionally, this class will explore renewable energy resources, along with the fundamentally basic but frequently underappreciated resources of water and soil. The consideration of all these Earth resources will entail the socio-political and economic perspectives underlying the definition, valuation and use of materials considered to be natural resources.

Learning outcomes of this class:

- Demonstrate an understanding of the full range of earth resources exploited by modern society, inclusive of their formation, extraction and exploitation through brief summary essays included in each of the exams
- Explain the socio-economic underpinnings of the concept of natural resources, articulating how these connect to the material world to create the perception of natural endowments considered to be resources
- Identify the connections between resource-use and the environment, inclusive of concerns regarding overexploitation, pollution and climate change and demonstrate a knowledge of the means in which we as a society have attempted to address such concerns through changes in practice, use and law
- Demonstrate mastery of a particular resource-environment issue through the development of a research paper, exhibiting sufficient writing and research skills expected for an upper division undergraduate course

Grading Policy: (Final grades are rounded to nearest whole number)

<u>Grade</u>	<u>Semester average</u>	<u>Grade</u>	<u>Semester average</u>
A	≥93	C	73-76
A-	90-92	C-	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66
B-	80-82	D-	60-62
C+	77-79	F	less than 60

Three exams (100pts each)	300 pts	60%
5 Exercises/course participation (20pts each)	100 pts	20%
Final Paper (100pts)	100 pts	20%
First draft	30 pts	
Final draft	70 pts	
Total Points	500pts	100%

Exercises: Five brief exercises will be assigned throughout the semester. These will be made available through WebCampus, which is also where you will make your submission. Recall that you must turn in all assignments by the start of class on the day it is due (see the syllabus schedule). As this is an upper division course, I expect detailed and complete answers that are not only accurate but also insightful.

Paper: A final paper will take the place of a comprehensive final exam, allowing you to further research a topic of your choice. You may either work alone or in a group of two students. All Geosciences majors **must** work in pairs on this research paper and I will assist everyone to form these groups. By the first exam, you must find a time to sit with me to discuss your paper ideas and receive my approval. Don't worry, I'll approve most anything but I do want to talk things through with you and assist you early on in the paper process. Following the second exam, a first draft of the paper is

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due and is worth 30% of the final paper grade. The final draft of the paper will then be worth the remaining 70% of the credit for the paper, giving you the opportunity to improve substantially upon your initial submission. Given the upper division credit for this course, this paper needs to represent a substantial secondary-source research effort that does more than just lightly cover the topical area selected. For this reason, additional informational materials will be provided and the paper will be discussed during lecture times.

Syllabus: Should there need to be changes in the timing, order or subject of materials, I will do my best to use the announcement function to notify all the students of changes. Significant changes may require a revised syllabus to be made available.

CLASS SCHEDULE

Date	Lecture	Readings (Exercise Due)
Week 1		
Jan. 18	Martin Luther King, Jr. Day (No Class)	
Jan. 20	Syllabus Review and Introduction and Origins of Resources	Preface/Part 1 Intro
Week 2		
Jan. 25	Minerals: The Foundations of Society	Chapter 1
Jan. 27		
Week 3		
Feb. 1	Plate Tectonics and the Origins of Resources	Chapter 2
Feb. 3		(Exercise 1 due)
Week 4		
Feb. 8	Earth Resources Through History	Chapter 3
Feb. 10		
Week 5		
Feb. 15	Washington's Birthday (No Class)	
Feb. 17	Environmental Impacts of Resource Exploitation and Use	Chapter 4
Week 6		
Feb. 22		(Exercise 2 due)
Feb. 24	Exam 1 (Chapters 1-4)	(Deadline for paper topic)
Week 7		
Feb. 29	Energy from Fossil Fuels	Chapter 5
Mar. 2		
Week 8		
Mar. 7	Video: <i>The Spill</i>	(Exercise 3 during class)
Mar. 9	Nuclear and Renewable Energy Sources	Chapter 6
Week 9		
Mar. 14	Nuclear and Renewable Energy Sources	Chapter 6
Mar. 16	Video: Nuclear States of America	(Exercise 4 paper discussion)
Week 10		
Mar. 21	Abundant Metals	Chapter 7
Mar. 23	Geochemically Scarce Metals	Chapter 8
Week 11		
Mar. 28	Spring Break (No Class)	
Mar. 30	Spring Break (No Class)	
Week 12		
Apr. 4	Geochemically Scarce Metals (Carlin Deposits video clip)	
Apr. 6	Exam 2	
Week 13		
Apr. 11	Fertilizer and Chemical Minerals	Chapter 9
Apr. 13	Building Materials and Other Industrial Minerals	Chapter 10
Week 14		
Apr. 18	Water Resources	Chapter 11
Apr. 20	Water Resources	(Deadline for first draft of the paper)
Week 15		
Apr. 25	Video: <i>Water Wars</i>	(Exercise 5 during class)
Apr. 27	Soil as a Resource	Chapter 12

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Week 16		
May 2	Soil as a Resource	Chapter 12
May 4	Exam 3	
Week 17		
May 9	Final Paper hardcopy due to my office or mailbox by 10:10am	

Logistics and policies

1. Participation

Students in this class will have different backgrounds and levels of educational training. As a result, you may find some material difficult, feel that you are already familiar with some concepts, or have personal experiences that can inform us all. Whatever your situation, please share your position with us through class participation. Most importantly, however, if you are confused about a concept, **please ask questions** in class for clarification and further explanation. You will not be alone in your confusion. There are many ways to present this material, and I will attempt to find one that works for you. If you do not feel comfortable asking questions in class, please contact me.

2. Attendance

It is important that you attend class daily because we cover a lot of material, and I will provide guidance for exam questions during class. You are responsible for all material covered in lectures and assigned for readings. Topics covered may vary from the schedule somewhat, but the exam dates will remain fixed. Consult the posted lecture materials and fellow classmates to review missed material and then see me with specific questions. **Make-up lectures and exams will not be given** without a medical, military, or university excuse. If a make-up exam is permissible, the nature of the make-up exam will be at my discretion.

3. Academic Misconduct

Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Student Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV's function as an educational institution.

An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources. See the *Student Academic Misconduct Policy* (approved December 9, 2005) located at: <http://studentconduct.unlv.edu/misconduct/policy.html>.

4. Administrative drops/Classroom conduct

You are required to be familiar with university policies and procedures in the current UNLV Undergraduate Catalog. Importantly, we follow the policies on Cheating, Plagiarism, and Academic Dishonesty that are stated in the most recent UNLV Undergraduate Catalog. Any student that does not comply with these requirements and conducts themselves in a manner that is disruptive and interferes with the right of other students to learn or of the instructor to teach will be administratively dropped from the course.

5. Recording Lectures

Absolutely **no electronic recording or posting** of lectures or other materials will be allowed without my prior approval.

6. Bringing children/guests to class

Students are not generally allowed to bring guests, including children to lecture. Please see me with any questions.

7. Disability Resource Center (DRC)

The UNLV Disability Resource Center (SSC-A 143, <http://drc.unlv.edu/>, 702-895-0866) provides resources for students with disabilities. If you feel that you have a disability, please make an appointment with a Disabilities Specialist at the DRC to discuss what options may be available to you.

If you are registered with the UNLV Disability Resource Center, bring your Academic Accommodation Plan from the DRC to the instructor during office hours so that you may work together to develop strategies for implementing the accommodations to meet both your needs and the requirements of the course. Any information you provide is private and will be treated as such. To maintain the confidentiality of your request, please do not approach the instructor in front of others to discuss your accommodation needs.

8. UNLV Writing Center

One-on-one or small group assistance with writing is available free of charge to UNLV students at the Writing Center, located in CDC-3-301. Although walk-in consultations are sometimes available, students with appointments will receive

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priority assistance. Appointments may be made in person or by calling 702-895-3908. The student's Rebel ID Card, a copy of the assignment (if possible), and two copies of any writing to be reviewed are requested for the consultation. More information can be found at: <http://writingcenter.unlv.edu/>.

9. Tutoring

The Academic Success Center (ASC) provides tutoring and academic assistance for all UNLV students taking UNLV courses. Students are encouraged to stop by the ASC to learn more about subjects offered, tutoring times and other academic resources. The ASC is located across from the Student Services Complex (SSC). Students may learn more about tutoring services by calling 702-895-3177 or visiting the tutoring web site at: <http://academicsuccess.unlv.edu/tutoring/>.

10. Religious Holiday Policy

Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The make-up will apply to the religious holiday absence only. It shall be the responsibility of the student to notify the instructor no later than the end of the first two weeks of classes, **January 29, 2016**, of his or her intention to participate in religious holidays which do not fall on state holidays or periods of class recess. For additional information, please visit: <http://catalog.unlv.edu/content.php?catoid=6&navoid=531>.

11. Official extracurricular activity

All students who represent UNLV at any official extracurricular activity have the opportunity to make up an assignment. However, you must provide written notification to me at least 1 week prior to the missed class(es).

12. Nondiscrimination

The University of Nevada Las Vegas does not discriminate on the basis of race, color, creed, religion, national or ethnic origin, gender, age, sexual orientation, disability, or veteran status.

13. Copyright

The University requires all members of the University Community to familiarize themselves **with** and to follow copyright and fair use requirements. **You are individually and solely responsible for violations of copyright and fair use laws. The university will neither protect nor defend you nor assume any responsibility for employee or student violations of fair use laws.** Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information can be found at: <http://www.unlv.edu/provost/copyright>.

14. Rebelmail

By policy, faculty and staff should e-mail students' Rebelmail accounts only. Rebelmail is UNLV's official e-mail system for students. It is one of the primary ways students receive official university communication such as information about deadlines, major campus events, and announcements. All UNLV students receive a Rebelmail account after they have been admitted to the university. Students' e-mail prefixes are listed on class rosters. The suffix is always @unlv.nevada.edu. **Emailing within WebCampus is acceptable.**

14. Incomplete Grades

The grade of I – Incomplete – can be granted when a student has satisfactorily completed three-fourths of course work for that semester/session but for reason(s) beyond the student's control, and acceptable to the instructor, cannot complete the last part of the course, and the instructor believes that the student can finish the course without repeating it. The incomplete work must be made up before the end of the following regular semester for undergraduate courses. Graduate students receiving "I" grades in 500-, 600-, or 700-level courses have up to one calendar year to complete the work, at the discretion of the instructor. If course requirements are not completed within the time indicated, a grade of F will be recorded and the GPA will be adjusted accordingly. Students who are fulfilling an Incomplete do not register for the course but make individual arrangements with the instructor who assigned the I grade.

15. Final Examinations

The University requires that final exams given at the end of a course occur at the time and on the day specified in the final exam schedule. See the schedule at: <http://www.unlv.edu/registrar/calendars>.