

**SALEM STATE UNIVERSITY**  
**IDS 366-01**  
**Energy and the Environment**  
**Spring 2014**

**Instructor:** Dr. Marcos Luna  
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**Phone:** (978) 542-6487  
**Class Time:** Tuesdays and Thursdays 1:40 – 2:55pm  
**Class Room:** Sullivan Building, Room 210  
**Office Hours:** Mon. 4 – 6pm, Tues. thru Fri. 3 – 5pm, or By Appointment  
**Website:** Canvas (<http://www.salemstate.edu/elearning/>)

**Course Description:**

This course focuses on understanding what energy is, how it is produced, and how it is utilized in modern society, drawing on concepts from physics, chemistry, geography and geology to understand energy production and conservation. The advantages and disadvantages of renewable and non-renewable energy sources will be analyzed, including issues of efficiency, availability, cost, pollution, and environmental impact. Three lecture hours per week.

Prerequisites: Completion of a laboratory science sequence, or permission of Department Chairperson.

**Course Goals:**

- Develop basic literacy in energy and related environmental concepts and measures
- Understand the geographic, social and historical contexts of different energy systems and how relationships between energy and society vary over time and space.
- Comprehend energy and environmental issues on a local, national and global perspective
- Develop a critical awareness of how energy is embodied in our economic activities, infrastructure, and our personal lifestyles
- Explore how energy systems have changed and examine what is intended and what is at stake in contemporary energy transition projects

**Learning Objectives:**

- Demonstrate comprehension of the global energy balance and its relationship to energy resources and systems
- Describe and utilize measures (i.e. units, rates, indices) of energy and environmental quality
- Interpret and analyze energy and environmental data through tables, charts, graphs and maps
- Demonstrate understanding of basic concepts of energy, environmental processes, and relevant technologies
- Identify and compare the social and environmental challenges and impacts of different energy systems
- Critically evaluate arguments and claims about energy and the environment
- Research and communicate about issues related to energy and the environment

**Required Materials:**

- An active mind, a good attitude, and something to take notes with. All readings and supporting multimedia materials will be provided through Canvas. You will need regular Internet access and an email account.

**Course Policies:**

- Students are responsible for all material found in the required readings, multimedia and class lectures. Students are responsible for all work and lectures due to absences. Attendance is very important and will be recorded throughout the semester.
- All quizzes and assignments are due before the assigned due dates. Late assignments will not be accepted unless discussed with the professor at least 48 hours BEFORE the due date OR with a documented emergency.
- Students who have questions about readings, lectures, or assignments are strongly encouraged to bring them to the attention of the instructor in class, after class, or during office hours.
- All students agree to abide by the course Honor Code: “My answers to homework, quizzes and exams will be my own work (except for assignments that explicitly permit collaboration). I will not make solutions to homework, quizzes or exams available to anyone else. This includes both solutions written by me, as well as any official solutions provided by the course staff. I will not engage in any other activities that will dishonestly improve my results or dishonestly improve/hurt the results of others.”
- Salem State University is committed to providing equal access to the educational experience for all students in compliance with Section 504 of the Rehabilitation Act of 1973 and the American with Disabilities Act and to providing all academic accommodations, aids, and adjustments. Any student who has a documented disability requiring an accommodation, aid or adjustment should speak with the instructor immediately. Students who have not done so should provide documentation to and schedule an appointment with the Office for Students with Disabilities and obtain appropriate services.
- **Cell phones and beepers** are to be turned **OFF** while in class. Students seen to be **texting, IMing, Facebooking**, or using a cell phone or any other **portable electronic device** during class will lose participation credit for that day regardless of how well the student has participated in the day’s class discussion.
- **Laptops/tablets** may be used for note taking. However, if I find that your use of the device is becoming a distraction to you or those around you, I will ask you to turn it off or leave the classroom and you will lose participation points for that class. **Social media, Emailing , Instant Messaging, and Text Messaging** are all **INAPPROPRIATE** during class time.
- **The instructor reserves the right to change the course content and syllabus at any time during the semester.**

- **Grading**

Class Participation	10%
Reading Quizzes	25%
Assignments	50%
Final Presentation	15%
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Total:	100%

NOTE: In the event of a college declared critical emergency, Salem State University reserves the right to alter this course plan. Students should refer to <http://www.salemstate.edu/> for further information and updates. The course attendance policy stays in effect until there is a university declared critical emergency.

In the event of an emergency, please refer to the alternative educational plans for this course located in Blackboard. Students should review the plans and gather all required materials before an emergency is declared.

**Reading Quizzes**

There will be regular quizzes based on the week's reading, podcast, or videocast. These quizzes will evaluate your understanding and reflection of the material. Quizzes will take place online in Canvas and are *due before the week's class on that topic*.

**Homework****Personal Energy Audit:**

- Personal Energy Audit. In this exercise you will calculate the energy use of your household. In order to complete this assignment, you will need a year's worth of utility bills, annual miles driven for each car in your household, the fuel efficiency of each car, and number of miles traveled by plane over the past year. If you live on campus and do not pay your own utilities, I recommend that you do this exercise with a family member (e.g. parent, sibling, etc.) or friend who does pay her own utilities.

For the following assignments you will describe and evaluate an energy source/topic in its various social, economic and environmental dimensions. We will conclude the semester with a presentation your energy source/topic in which you integrate these dimensions.

**Energy Assignment #1:**

- Geographic comparison (2 – 3 pages). In this assignment you will describe and compare your energy issue/topic as it exists or manifests in two different places (e.g. states, regions, countries).

**Energy Assignment #2:**

- Economics of energy (2 – 3 pages). Describe your energy issue/topic in an economic context.

**Energy Assignment #3:**

- Socio-politics of energy (2 – 3 pages). Describe your energy issue/topic in a social (e.g. political, cultural, historical) context.

**Energy Assignment #4:**

- Energy environmental issues (2 – 3 pages). Describe environmental issues around your energy issue/topic.

**Final Presentation:**

- Describe your energy issue/topic in its social (e.g. political/cultural), economic and environmental contexts. Your description must be based on evidence and incorporate geographic, economic, political, cultural, and environmental dimensions. Consider using real examples or case studies to structure or illustrate your presentation. You will present your research and findings to the class. More information will be provided at a later date.

All written assignments should be typed and submitted in hard copy at the beginning of class on the due date unless otherwise instructed. All assignments should include the following:

- Assignment title (e.g. Assignment 1)
- Class (i.e. IDS366-01 Energy and the Environment)
- Date
- Your full name
- Answers written in complete sentences with proper grammar and punctuation.
- Pages numbered at the bottom if more than one page

Week	Date	Readings	Assignments Due
Intro: What's the big deal about energy and the environment?			
1			
	1/16		
Energy and Environmental Basics: What is Energy?			
2	1/20		Reading Quiz 1
	1/21	Bent et al. "Rules of the Game" <i>Energy</i>	
		Ristenin and Kraushaar Ch1 "Energy Fundamentals" <i>Energy and the Environment</i>	
	1/23		
Energy and Environmental Basics: Earth's Energy Balance			
3	1/27		Reading Quiz 2
	1/28	Marsh and Grossa Ch4 "Global Cycles and Systems: The Master Environmental Framework" <i>Environmental Geography</i> 3 <sup>rd</sup> ed.	
		United States Global Change Research Program. 2009. "Executive Summary" pp.1-13 and "Global Climate Change" pp. 13-26 in Global Climate Change Impacts in the United States	
	1/30		
Energy Resource Landscapes 1			
4	2/3		Reading Quiz 3
	2/4	Getis et al. "The Geography of Natural Resources" <i>Introduction to Geography</i>	
		Yergin "Is the World Running Out of Oil?" <i>The Quest</i>	
		Kolbert. "Unconventional crude: Canada's synthetic -fuels boom." <i>Energy Reader</i>	
		Goodell Ch1 "The Saudi Arabia of Coal" <i>Big Coal</i>	

Week	Date	Readings	Assignments Due
	2/6		<i>Assignment – Personal Energy Audit</i>
Energy Resource Landscapes 2			
5	2/10		Reading Quiz 4
	2/11	"Wind Power" CQR  "Opposing Wind Energy Landscapes_ A Search for Common Cause" AAAG	
	2/13		
Economic Landscapes of Energy			
6	2/17		Reading Quiz 5
	2/18	Randolph and Masters Ch1 "The Energy Imperative" <i>Energy for Sustainability</i>  Smil "Fossil-Fueled Civilization" <i>Energy in World History</i>  Goodell Ch5 "Infinite Needs" <i>Big Coal</i>	<i>Energy Assignment #1 – Geography of Energy</i>
	2/20		
Geopolitical Landscapes of Energy			
7	2/24		Reading Quiz 6
	2/25	Goodell Ch2 "Coal Colonies" <i>Big Coal</i>  Behr "Energy Nationalism" <i>CQ Researcher</i>	
	2/27		
Energy Security			
8	3/3		Reading Quiz 7

Week	Date	Readings	Assignments Due
	3/4	Yergin "The Security of Energy" <i>The Quest</i>  "US Oil Dependence" <i>CQ Researcher</i>  "Modernizing the Grid" <i>CQ Researcher</i>	
	3/6		<i>Energy Assignment #2 – Energy and Economy</i>
9	3/10	<b>SPRING BREAK – NO CLASS</b>	
	3/11		
	3/13		
Energy, Infrastructure, and Built Environments			
10	3/17		Reading Quiz 8
	3/18	Nye. "Cities of Steam." <i>Consuming Power</i>  Nye. "Consumption and Dispersion." <i>Consuming Power</i>  Nye. "The High-Energy Economy." <i>Consuming Power</i>  Randolph and Masters. "Whole Community Energy and Land Use" <i>Energy for Sustainability</i>	
	3/20		<i>Energy Assignment #3 – Energy and Society</i>
	Energy Poverty and Vulnerability		
11	3/24		Reading Quiz 9
	3/25	Lomborg "The Poor Need Cheap Fossil Fuels" <i>NYT</i>  Gardiner "Energy Crunch for Britain's Poor" <i>NYT</i>  Lavelle "Five Surprising Facts About Energy Poverty" <i>Natl Geog</i>  Hans Rosling and the magic washing machine... - ted.com	

Week	Date	Readings	Assignments Due
	3/27		
Energy's Externalities: Environmental and Social Costs			
12	3/31		Reading Quiz 10
	4/1	Lockard. "'Introduction,' The Problem of Externalities', and 'Coal and Corporate Power,' in <i>Coal: A Memoir and Critique</i> . Energy Reader  Rosenthal "As Biofuel Demand Grows, So Do Guatemala's Hunger Pangs" <i>NYT</i>  Goodell Ch6 "The Big Dirty" <i>Big Coal</i>  Lavelle "A Dream Dashed by the Rush on Gas" <i>National Geographic</i>	
	4/3		
13	4/7	<b>AAG CONFERENCE – NO CLASS</b> <i>Work on your assignment!</i>	
	4/8		
	4/10		
Energy Transitions in History			
14	4/14		Reading Quiz 11
	4/15	Nye. "Energy Crisis and Transition." <i>Consuming Power</i>  Nye. "Choices." <i>Consuming Power</i>  Smil. "Energy in World History."  Melosi "Energy Transitions in Historical Perspective." <i>Energy Reader</i>	

Week	Date	Readings	Assignments Due
	4/17		<i>Energy Assignment #4 – Energy and Environment</i>
Energy in Transition			
15	4/21		Reading Quiz 12
	4/22	Sovacool and Brown. "Conclusions - replacing myths with maxims: rethinking the relationship between energy and American society." <i>Energy Reader</i>  Randolph and Masters "Market Transformation to Sustainable Energy" <i>Energy for Sustainability</i>	
	4/24		
16	4/28		
	4/29	<i>Final Presentations</i>	
	5/1	<i>Final Presentations</i>  <b>LAST DAY OF CLASS</b>	