



Pete's Office: Environmental Sciences rm. 439

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Office Hours: MW 10:00 am - 11:30 am, or *always* by appointment (ES 439)

Michelle Judson

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Office Hours: Hour after class in Library Learning Commons or by appointment.

Instructors: [Pete Stelling](#) and [Michelle Judson](#)

E-mail is the best way to contact us. We check it often and usually respond immediately. You are encouraged to come to office hours as well. Not familiar with the benefits of office hours? [Here's a short video that might help.](#)

Objectives: This course is intended to help you understand the diversity of current energy sources, particularly those that derive from the Earth. From this understanding, you should be able to have an informed debate on the energy and sustainability. The course focuses on the fundamentals of energy sources from rocks: oil, gas, coal, geothermal, and nuclear minerals. Implications for sustainability will be a significant focus for each of the energy sources listed, as well as other emerging technologies such as carbon sequestration.

Course Outcomes: After successfully passing this class, students should be able to:

1. Understand today's energy landscape and the history of global energy leading up to today's energy mix.
2. Describe how fossil fuels (gas, oil, and coal), nuclear minerals, and geothermal sources of energy are formed and produced.
3. Explain what unconventional resources are (shale gas, coal bed methane, heavy oil, hydrates) and their role they play in the evolving energy mix.
4. Understand the physical and environmental limitations of major energy sources and how technology can best address these limitations.
5. Engage in the debate around the energy potential, sustainability and technology associated with these resources.

Course Guidelines

We're in this together. We'll be working hard to present the content of this course in a logical and engaging format. Your job is to work hard to understand this material. You will need to work outside of class. If you don't understand something, PLEASE tell us, either in class or afterward. We cannot read your mind, and there's a good chance that the material you struggle with will be on the exam. Other general guidelines:

- Please speak up, but don't monopolize the conversation
- Listen to each other, and try to contribute to the conversation
- No attendance will be taken, but if you miss a quiz you won't be able to make it up
- No makeup exams without prior arrangement (at least 1 week prior notice)

- Tardiness or leaving early should be minimized and politely managed
- No cell phones should ring in class, ever
- Academic integrity is absolutely essential. No cheating, plagiarism, etc. will be tolerated. See the WWU Integrity page at wwu.edu/integrity
- No late work. Acknowledge that life occurs. If you can not meet a deadline please talk to Dr. Stelling or Ms. Judson about when you can re-commitment to deliver in a reasonable time frame in advance of the due date.

Our only contact for you is your official WWU email through Canvas. It is up to you to ensure you receive any messages or announcements we send to you. Make sure you check your junk mail box.

We will be using Canvas for this course. We will post assignment information, readings, homeworks, announcements, and .pdf versions of our PowerPoint presentations for each lecture. You are welcome to print a copy of these lecture notes and bring them to class for lecture – this will significantly enhance your class notes. These will NOT be enough to succeed in class, however, and you will have to read the text and attend lecture in order to do well.

Textbooks: This course will not have a standard textbook. Instead we will have regular readings from open-source academic journals, on-line resources, and other published materials. These will be used to supplement the course and provide background reading for topics covered in class and the basis of in-class discussions.

Grades:

Grades for the class will be determined by your cumulative score on the following groups of activities and assignments:

Activity	Percentage
Exams	25%
Projects and presentations	35%
In-class activities	15%
Homeworks	15%
Participation, interaction	10%
Total	100%

Letter grades will be based on the following scale:

100-92.5% = A		92.4-90% = A-	
89.9-87.5% = B+	87.4-82.5% = B	82.4-80% = B-	
79.9-77.5% = C+	77.4-72.5% = C	72.4-70% = C-	
69.9-67.5% = D+	67.4-62.5% = D	62.4-60% = D-	
<60% = F.			

Course Outcomes	BA Geology	B.S. Geology	B.S. Geophysics
	1. Earth has a history of biological and physical change over billions of years.	1. Earth has a history of biological and physical change over billions of years.	1. Earth has a history of biological and physical change over billions of years.
	3. Earth's composition varies and these compositions provide the raw materials for the rock cycle.	3. Earth's composition varies and these compositions provide the raw materials for the rock cycle.	3. Earth's composition varies and these compositions provide the raw materials for the rock cycle.
	6. Geology and society are fundamentally inter-related.	6. Geology and society are fundamentally inter-related.	6. Geology and society are fundamentally inter-related.
		10. Will be able (alone or in teams) to present geological information clearly.	10. Will be able (alone or in teams) to present geological information clearly.