

Introduction to Environmental Science (ESCI1301/CRN27481)_Spring 2020

TR 9:00 -10:20

UGLC 220

Instructor:

Dr. **Jie Xu**, Geological Sciences #319, jxu2@utep.edu

Office hours: Friday 11:00-12:00 or by appointment via email

Textbook:

Essential Environment, Withgott and Laposata (ISBN 978-0-321-98457-9)

Course Description:

This introductory course is designed to be a survey of various areas that fall under the umbrella of environmental science. The lectures will cover the following major modules: (1) Sustainability and scientific methods; (2) environmental policy, and environmental justice; (3) population and community ecology, (4) human population, food, and soil; (5) surface and ground water; (6) atmosphere and air pollution; (7) climate change; and (8) renewable and non-renewable energy. Additionally, we may discuss about biogeochemical cycles, and local/regional environmental problems.

Learning Goals:

Upon successful completion of this course through lectures, in-class activities, and small group discussions, I expect you to:

Knowledge-wise

- Comprehend the concept of sustainability and how it may affect our future
- Understand some of the basic concepts such as systems, cycles, flows, and feedbacks, that characterize and govern the structure, function, and interactions of the atmosphere, the hydrosphere, the lithosphere, as well as the biosphere
- Refine skills in analysis and evaluation of complex systems and be familiar with scientific methods by which knowledge is obtained and advanced in environmental science
- Demonstrate a solid scientific base when discussing or analyzing environmental policies or environment-related news at various levels

Skill-wise

- Grow in scientific reasoning skills involving inquiry, evidence evaluation, inference and argumentation that support the formation and modification of concepts and theories about the natural and social worlds
- Be effective communicators of scientific information in oral, graphical, and spatial forms

Grading Policies:

The final grade is based on the total score of four components: one final exam, two mid-term exams, and in-class quizzes & projects. Extra credit options may become available through the course. The purpose of these extra-credit options (if available) is to encourage you to dig more

into the current environmental issues either regionally or globally that are rooted in Earth and environmental science.

Final exam (30%) Mid-terms (20%×2)
In-class quizzes + group activities (30%)

> 90% - A; 89-80% - B; 79-70% - C, 69-60% - D; < 60% - F (Relative grades will be used to assign final grades)

Notes:

- For most classes, we will try to have in-class quizzes (in the format of 1-3 multiple choice questions). **A smartphone, tablet, or laptop is required to participate in these quizzes** using *REEF* system (an additional instruction sheet has been provided in Blackboard) (laptops can be loaned through the library service if needed). In-class quizzes will count towards 25% of your final grade. From all the quizzes given in the semester, 25% of the lowest scores will be dropped. In-class activity credits will be added to this category. In-class participation and successful completion of the activity sheets are both required for obtaining the associated credits.
- For the two midterms and one final, Scantrons will be needed (#:MMS011157404). They are available at the UTEP bookstore or the vending machine in the UTEP library. Please get them ahead of your exams.
- **Exam policy:** No make-up exams will be given for reasons other than critical illness (documentation required), official University businesses (instructor's prior approval and documentation required) or extreme emergencies (documentation required).
- **Honor codes:** academic integrity is the fundament principle for all UTEP students, staff and faculty. Refer to the UTEP Student Handbook where scholastic dishonesty is defined (<http://sa.utep.edu/osccr/academic-integrity/>). Proven violations of these detailed regulations may result in any of the consequences outlined in the Handbook.

Drop date:

The College of Science aligns with UTEP's posted drop date of **March 27** for the Spring 2020 semester. We will not approve any student- or faculty-initiated drop requests for a course after that date, except under circumstances of complete withdrawal of all courses due to medical or non-medical reasons.

Incomplete grades:

All grades of Incomplete (I) must be accompanied by an Incomplete Contract that has been signed by the instructor of record, student, departmental chair, and the dean. Although UTEP will allow a maximum of one year to complete this contract, the College of Science requests it be limited to **one month** based upon completion data. A grade of *Incompletion* is only used in exceptional circumstances.

Students with Disabilities:

If you have a disability and may need accommodations in this class you are encouraged to contact the Center for Accommodations and Support Services (CASS) at 915-747-5148 or cass@utep.edu within the first two weeks of class. Here is the link to the resources available to students with disabilities <http://admin.utep.edu/Default.aspx?tabid=61021&submenuheader=2>.

Military Service:

If you are a military student with the potential of being called into military service and/or training during the course of the semester you are encouraged to contact the instructor regarding these matters.

<i>Week</i>	<i>Date</i>	<i>Topics</i>	<i>Textbook</i>
1	Jan 21 Jan 23	Introduction: what is environmental science about? Scientific methods	Ch 1
2	Jan 28 Jan 30	Basics of environmental systems Biodiversity and population ecology	Ch 2 Ch 3
3	Feb 4 Feb 6	<i>6th Mass extinction</i> , community ecology Biomes	Ch 4 Ch 5
4	Feb 11 Feb 13	Human population Group project 1 presentation	Ch 6
5	Feb 18 Feb 20	Environmental economics Environmental policies	Ch 5 & handouts
6	Feb 25 Feb 27	Soil and agriculture Mid-Term 1	Ch 7
7	Mar 3 Mar 5	GMO food & group project 2 Forest Management	Ch 7 Ch 9
8	Mar 10 Mar 12	Fresh water sources – surface water Fresh water sources - groundwater	Ch 12
9	Mar 17 Mar 19	<i>Spring break – No class</i>	
10	Mar 24 Mar 26	<i>No class – (ACS invited talk)</i> World oceans	Ch 12
11	Mar 31 Apr 2	Water resource management The atmosphere, weather and climate	Ch 12 Ch 13
12	Apr 7 Apr 9	Air pollution & group project 3 Climate-related natural disasters	Ch 13 handouts
13	Apr 14 Apr 16	Mid-Term 2 Global climate change I - data & group project 4	Ch 14
14	Apr 21 Apr 23	Global climate change II – interactions among different cycles Non-renewable energy – fossil fuels	Ch 14 Ch 15
15	Apr 28 Apr 30	Non-renewable energy – nuclear energy Renewable energy	Ch 15 Ch 16
16	May 5 May 7	Waste management Review session – Q&A	Ch 17

16	May 11 May 15	<i>Final Exam Week</i>
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The above schedule is subject to changes.