

Introduction to Environmental Science (ESCI1301) - 2021 Spring

Format:

Online course

Instructor:

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

Office hours: appointment via email

Textbook:

Essential Environment, Withgott and Laposata

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 local/regional environmental problems.

Learning Goals:

Upon successful completion of this course through lectures, post-class quizzes and assignments, and forum 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 graphical, spatial, and written forms

Grading Policies:

The final grade is based on the total score of several major components: **one final exam, two mid-term exams, post-class quizzes & assignments** (we have ~ 5 quizzes and ~4 assignments altogether; the actual numbers may vary), and online surveys. Extra credit options may become available through the course. The purpose of the 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 (25%)

Two midterm exams (40%)

Quizzes + assignments (25%)

Participation in surveys (10%)

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

Important Notes:

- **How to stay connected:** due to the current pandemic situation, all the lectures will be delivered as recorded videos along with the lecture materials on **Blackboard**. Thus, it is extremely important for each student to keep connected through **UTEP emails** and through **Blackboard**. Major announcements will be made through UTEP emails.
- **Online asynchronous lectures:** there will be two recorded lectures each week that will be posted on Monday and Wednesday, respectively, by 8 am.
- **Exam policy:** For each online quiz, assignment, or exam, only a certain period will be given to complete these tasks, which will be specified in the recorded lectures before the test or assignment is posted and made available. Please pay close attention to the deadlines and ensure timely submissions of each task for full credit. No-make tests will be given only for exceptional conditions including 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 **April 1st** for the 2021 Spring semester. We may not approve 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 18 Jan 20	<i>Martin Luther King Day</i> Introduction	Ch 1
2	Jan 25 Jan 27	Scientific methods and ethics Basics of environmental systems	Ch 2
3	Feb 1 Feb 3	Biodiversity I – life, evolution and adaptation I Biodiversity II - extinction	Ch 3
4	Feb 8 Feb 10	Population ecology - basics Community ecology –basics and significance	Ch 4
5	Feb 15 Feb 17	Human population Environmental economics & policies I	Ch 6 Ch 5
6	Feb 22 Feb 24	Mid-Term 1 Environmental policies II	Ch 5 & handouts
7	Mar 1 Mar 3	Soil and agriculture GMO food	Ch 7
8	Mar 8 Mar 10	Surface fresh water Groundwater I	Ch 12
9	<i>Mar 15</i> <i>Mar 17</i>	<i>Spring Break</i>	
10	Mar 22 Mar 24	Groundwater II & the world ocean I The world ocean II	Ch 12 Ch 13
11	Mar 29 Mar 31	Water resource uses and management The atmosphere - basics	
12	Apr 5 Apr 7	Mid-Term 2 Air quality and pollution	Ch 14
13	Apr 12 Apr 14	Global climate systems I Global climate systems II	Ch 14 Ch 15
14	Apr 19 Apr 21	Energy – fossil fuels I Energy – fossil fuels II + nuclear	Ch 15 Ch 16
15	Apr 26 Apr 28	Energy – renewable energy I Energy – renewable energy II	Ch 17 Ch 16
16	May 3 May 5	Waste management Review session of the entire semester’s content	
17	May 10 May 12	Final Exam Week	

****This schedule is subject to modification.*