



K-12

TEXAS TECH

Environmental Systems A v8.0 – Syllabus

Course Name

ENVIRSYS-A

Environmental Systems A v8.0

Course Information

ENVIRSYS-A is the first semester of this two-semester course.

Environmental Science discusses the environmental challenges that impact our future, such as land use, pollution, climate change, and loss of biodiversity. This course is centered around achieving global sustainability to meet the needs of a growing human population, while also maintaining natural resources and protecting Earth's various systems. The short- and long-term consequences of our actions on human health and the environment are also a course focus. With the collaboration of the Guy Harvey Foundation and additional professional partners, this course highlights the research and field experiences of professors, scientists, conservationists, lawyers, and more, while sharing practical and sensible strategies for preserving the delicate balance between land, ocean, air, and life. In addition, this course creates a call to action for students by teaching them how to protect the world's biodiversity and resources by adjusting the way they live, work, play, and govern in the future.

Course Delivery Method

Online

Contacting Your Instructor

You may contact your instructor using your Canvas Inbox. Technical support is available 24/7 at [TTU K-12](#).

Course Topics

After completing this course, the students should have increased knowledge of:

- Describe what characterizes environmental science
- Explore the biogeochemical cycles of the ecosystems
- Describe the components of an ecosystem and food webs
- Compare and contrast community relationships among organisms
- Analyze food webs and energy transfers through trophic levels
- Discuss the characteristics of populations
- Explore the factors that determine population size
- Describe events that cause changes to ecosystems and biodiversity

- Discuss how biodiversity and human activity are monitored to make environmental decisions
- Characterize the biotic and abiotic components that define the world's biomes
- Explain how humans contribute to the tragedy of the commons
- Discuss the consequences of sustainable and unsustainable use of land
- Cite evidence about how oceans influence climate change
- Discuss how land, water, and air quality is monitored to make environmental decisions
- Evaluate how technology and biotechnology impacts environmental quality

Textbook and Materials

No textbooks required. All content is within Canvas.

Lab Materials

The following materials will be needed for labs in Module 1.

- tape measure or meter stick that can measure a 10m x 10m area
- stakes to mark the corners of an area you will survey
- string to tie to the stakes noted above
- hand lens
- a paper field journal or notebook for mapping
- scissors
- marking pens
- see-through plastic or wax paper
- calculator

Technical Requirements

- Internet access – preferably high speed (for accessing Canvas)
- browser (we recommend Chrome)
- supported browser plugins and settings

The following plugins and settings may be required to use our courses.

 - JavaScript enabled
 - Cookies enabled
 - Java installed
- Email
- Printing capabilities
- Adobe Reader (download from [Adobe](#))
- Audio and video capabilities (for watching/listening to course content)
- PDF app (free options available)

Technical Skill Requirements

Be comfortable with the following:

- accessing online learning materials via Canvas
- Internet search engines and browsers (we recommend Chrome)

- uploading assignments into Canvas (there will be instructions for uploading assignments)

Course Pacing

This course is designed to be completed in 18 weeks.

- Print this guide and use a calendar to fill in your goal dates for completing each Module.
- To achieve success, students are expected to submit work in each course weekly.
- Students can learn at their own pace; however, "any pace" still means that students must make progress in the course every week.
- Post the pace guide in a place where you and your Parent or Guardian will see it every day (on the refrigerator or next to the computer). Give yourself a check every time you complete a task and celebrate your efforts!

Weeks	Lessons	Due Date <i>(you write this in)</i>
1	Checkpoint 1 01.00 Discovering Environmental Science Introduction 01.01 What Is Environmental Science? 1.015 Lab: What is an Ecosystem? - Upload	
2	01.02 Cycles in Ecosystems 01.03 Introduction to Ecology	
3	01.04 Changes in Populations 01.05 Species Survival	
4	1.06 Biodiversity Lab: Population Density Assignment 01.06 Biodiversity Quiz	
5	*01.09 Discovering Environmental Science Exam	
6	02.00 Terrestrial Biomes and Land Use Introduction 02.01 Terrestrial Biomes	
7	02.02 Island Biogeography	
8	02.03 Land Resources 02.04 Forests and Deforestation	
9	02.05 Drilling and Mining 02.06 Waste Disposal	
10	*02.09 Terrestrial Biomes and Land Use Exam Checkpoint 2	
11	03.00 Aquatic Biomes Introduction 03.01 Freshwater Biomes	
12	03.02 Water Quality	
13	03.03 Toxicology 03.04 Marine Biomes	

Weeks	Lessons	Due Date <i>(you write this in)</i>
14	03.05 Ocean Impact and Recovery 03.06 Wastewater Treatment	
15	Checkpoint 3	
16	*Final Exam	
17	Floating Vacation Week	
18	Floating Vacation Week	

Course Credit

Your grade will be calculated as follows:

- formative assessments (50%)
- summative assessments (20%)
 - 01.09 Discovering Environmental Science Exam
 - 02.09 Terrestrial Biomes and Land Use Exam
- summative final exam (30%)

Assignments are labeled as “summative” or “formative” under Grades in Canvas.

Course Completion and Extensions

- Students may not complete the course in less than 30 days.
- All courses expire 180 days after the enrollment date.

Academic Integrity

It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and high standard of integrity. The attempt of students to present as their own any work not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offenders liable to serious consequences, possibly suspension.

“Scholastic dishonesty” includes, but is not limited to, cheating, plagiarism, collusion, falsifying academic records, misrepresenting facts, and any act designed to give unfair academic advantage to the student (such as, but not limited to, submission of essentially the same written assignment for two courses without the prior permission of the instructor) or the attempt to commit such an act.

Artificial Intelligence (AI) Use Policy

This policy covers any generative AI tool, such as ChatGPT, Elicit, Photo Math, etc. This includes text and artwork/graphics/video/audio, etc.

All work submitted in this course must be your own. You may not use artificial intelligence tools to complete your assignments in this course.

If an instructor suspects that an assignment is not the work of the student, it will receive a score of zero. The instructor will message the student or provide feedback on the assignment indicating

the need to schedule a one-on-one video conference, during which the student will be required to demonstrate their skills or knowledge through an alternative or mutually agreed-upon assignment. The grade of the alternate or agreed upon assignment will be determined at the instructor's discretion with the highest possible score being 70%.

If it is determined that a student has violated final exam directions on Final Exam A or CBE Set 1, the exam will be scored as zero. The student may take Final Exam B or CBE Set 2 with the highest possible score being 70%.

The incident will be reported to Texas Tech K-12 Administration and documented in the student's file. Continued violations of Texas Tech University's Academic Integrity Policy will result in the removal of the student from the program.

Student/Parent Expectations

You will be expected to log into the Canvas course regularly to be aware of possible announcements/reminders and to pace your student's progress in the course.

The following are prohibited while using the Canvas interface:

- spamming;
- hacking; and
- using TTU or Canvas email for commercial purposes;

Inappropriate behavior shall result in consequences ranging from a request to correct the problem, to removal from the course or even the university, depending on the severity of the behavior. Disciplinary actions will be taken according to the TTU K-12 Student Handbook.

Communication

- You can expect a reply from your instructor within 2 business days.
- Use the Canvas Inbox for sending messages to your instructor.

Submitting Assignments

You will submit all assignments through Canvas, rather than by mail or email.

Technical Difficulties

Getting Help

For student assistance with Canvas, visit [TTU K-12 Support](#).

Computer Problems

A working computer is necessary for online coursework. Computer problems will not be accepted as a valid reason for failure to complete course activities within the allotted time frame. Identify a second computer, before the course begins, that you can use if you experience computer problems.

Server Problems

When the Canvas server needs to be taken down for maintenance, the Canvas administrator will post an announcement in your course informing you of the time and date. If the server experiences unforeseen problems, your course instructor will notify you.

Lost or Corrupted Files

You must keep/save a copy of every project/assignment on an external disk or personal computer. In the event of any kind of technology failure (e.g., Canvas server crash or virus infection, students' own computer problems, loss of files in cyberspace, etc.) or any disputes, the instructor may request or require you to resubmit the files. In some instances, the instructor may need to open another attempt within Canvas, so communication with your instructor is critical in these circumstances.