



K-12
TEXAS TECH

Environmental Systems B v8.0 – Syllabus

Course Name

ENVIRSYS-B

Environmental Systems B v8.0

Course Information

ENVIRSYS -B is the second 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 be able to:

- Analyze the conditions that contribute to global climate change

- Differentiate between greenhouse gases and air pollutants
- Explore demography and changes to the human population
- Explain how human health is impacted by land, water, and air quality
- Identify how human health is impacted by genetic and pathogenic factors
- Explain the causes of food, water, and energy insecurities
- Discuss the large-scale impacts resulting from human activity
- Analyze personal and human activities that affect ecological footprints
- Evaluate the pros and cons of different energy production technologies throughout time
- Differentiate between renewable and nonrenewable sources of energy
- Examine how human lifestyles, population needs, and greener living affect sustainability
- Evaluate how technology and biotechnology is used to achieve sustainability
- Reflect on how human decisions impact global biodiversity and sustainability
- Reflect on the interdependence of Earth systems
- Explore careers that use knowledge from environmental science

Textbook and Materials

No textbooks required. All content is within Canvas.

- Calculator (four function, scientific, graphing)

Lab Materials

Module 4 - Light Intensity Lab

- a thermometer or color-changing temperature strip
- a protractor (or print-out of a protractor)
- a large flashlight or table lamp (Cell phone flashlights or energy-efficient bulbs will not work for this activity.)

Module 4 - Acid Rain Lab

- five plastic cups
- tap water (pH 7.5)
- distilled water (pH 5)
- vinegar (pH 2.4)
- lemon juice (pH 2)
- three pieces of chalk
- small nail
- three paper clips
- an egg (only eggshells needed)

- two green leaves

Enrichment activities (optional) require extra household supplies. Special items for these optional activities include a 250 mL beaker, a magnifying glass, iodine solution, an NPK kit, a thermometer, a protractor, and so on. Refer to lessons for these optional activities and their supplies.

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 (you write this in)
1	Checkpoint 1 04.00 Climate Change and Human Response Introduction 04.01 Atmosphere and Weather	
2	04.02 Ocean and Weather 04.03 Air Pollution 04.035 A Global Approach to Environmental Systems	
3	04.04 Greenhouse Effect 04.05 Climate Change Lab	
4	04.06 Global Change and Human Response	
5	*04.09 Climate Change and Human Response Exam	
6	05.00 Human Population and Impacts Introduction 05.01 Human Population Growth	
7	05.02 Demography 05.03 Food and Water Demand	
8	05.04 Food and Water Sustainability 05.05 Human Health and the Environment	
9	05.06 Urbanization Checkpoint 2	
10	*05.09 Human Population and Impacts Exam	
11	06.00 Sustainability and Our Future Introduction 06.01 Ecological Footprints	
12	06.02 Energy Needs and Production	
13	06.03 Renewable Energy 06.04 Alternative Energy	
14	06.05 Energy Conservation	
15	06.06 Sustainable Decisions Checkpoint 3	
16	*Final Exam	
17	Floating Vacation Week	

Weeks	Lessons	Due Date (you write this in)
18	Floating Vacation Week	

Course Credit

Your grade will be calculated as follows:

- formative assessments (50%)
- summative assessments (20%)
 - 04.09 Climate Change and Human Response Exam
 - 05.09 Human Population and Impacts 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.