



To access COVID-19 information, please visit the [Stay Healthy Lions Webpage](#).

# ENVS 103 Natural Disasters

**COURSE SYLLABUS: Spring I, 2023**  
**January 17, 2023-March 17, 2023 (Acceleration deadline is February 17, 2023)**

## INSTRUCTOR INFORMATION

**Instructor:** Katrina Starr, MS | Adjunct Instructor  
**Office Location:** Online  
**Office Hours:** Email or Telephone or Virtual by Appointment  
**Office Phone:** 903.468.3318 (Advising Main Office)  
**University Email Address:** Katrina.Starr@tamuc.edu  
**Preferred Form of Communication:** E-mail  
**Communication Response Time:** E-mail response within 24 hours.

## COURSE INFORMATION

### Materials

This course has been designed using Open Educational Resources (OER). All materials are embedded within the course and are accessible via the internet. After taking the pretest, students are encouraged to bookmark, download, or save materials provided via the internet for use during quizzes, assignments, and projects in this class.

### Supplemental Materials

Links and files will be provided in the document sharing tab within the course.

## COURSE DESCRIPTION

Scientific principles and case studies of natural disasters, including those related to geological, meteorological, biological, cosmological, and man-made hazards and disasters. Note, this can be used to fulfill a core curriculum science requirement.

## STUDENT LEARNING OUTCOMES

Completion of this course provides the student with the knowledge to:

1. Describe the physical mechanisms that combine to form both normal and extreme weather patterns.
2. Explain how tectonic plate dynamics result in earthquakes, volcanoes, and other geologic natural disasters.

3. List the factors that contribute to other types of disasters such as biological, cosmological, or human-made disasters.
4. Describe the factors that tend to increase or decrease the severity of natural disasters, and what the effects of natural disasters are on human populations worldwide.

### **Regular and Substantive Course Interaction**

As a general guide, students enrolled in a three semester hour course should spend one hour engaged in instructional activities and two to three hours on out-of-class work per week in a traditional semester. Students are expected to double this effort of engagement given that this course is being delivered in a seven-week term. Educational activities in this course are designed to ensure regular and substantive interaction between students and faculty to ensure that students are able to demonstrate competency.

### **COURSE REQUIREMENTS**

**Minimal Technical Skills Needed:** Students will need reliable computer and internet access for this course. Students must be able to effectively use myLeo email, myLeo Online D2L, and Microsoft Office.

**Instructional Methods:** This course is an online course. To be successful in this course, all content and course modules should be read and reviewed. All assignments and quizzes (both graded and not graded) must be completed. Please contact the instructor by email for any assistance.

**Student Responsibilities or Tips for Success in the Course:** To be successful in this course, all content and course modules should be read and reviewed. All assignments and quizzes (both graded and not graded) should be completed. Please contact the instructor by email for any assistance.

### **ASSESSMENT**

You will have a total of 7-weeks to complete and successfully pass all competencies with an average score of 80% or better. It is strongly recommended that you complete each competency every 1.5 weeks in order to allow ample time to research and write your essay and/or take any retest(s) required on your final week of the course.

- **Pre-Tests:** A Pre-Test for each competency is required before you begin your reading material in order to test your knowledge and help you to gain insight into the subject. This will not count towards your final weighted average; however, it is **MANDATORY** in order to successfully pass this course.

- **Post-Tests:** You will have a Post-Test at the end of each section with an opportunity to retest up to two more times **ONLY IF YOU SCORE LESS THAN 80%**. **ALL POST-TESTS MUST BE COMPLETED WITH A SCORE OF 80% OR HIGHER IN ORDER TO SUCCESSFULLY MASTER THIS COURSE!**

**\*\*PLEASE NOTE, IF YOU SCORE 80% OR BETTER THE FIRST POST-TEST ATTEMPT, THAT GRADE WILL REMAIN\*\***

- **Project:** You will have one 3-5 page essay that is due by the end of the course written over a Natural Disaster topic of your choice that has occurred during 2020-23. There is a link attached to the Assignment and this will count as 20% of your total weighted average. **THIS IS MANDATORY TO SUCCESSFULLY MASTER THIS COURSE; if you do not complete this project, you will not pass this course.**

### **GRADING**

A score of 80% or higher on all Post-Tests and the Event Essay is required to demonstrate competency and receive credit for the course. The following items will be used to calculate the final grade in the course.

Item	Worth
Post-Test 1	20 points
Post-Test 2	20 points
<b>Post-Test 3</b>	20 points
<b>Post-Test 4</b>	20 points
<b>Event Essay</b>	20 points
<b>Total</b>	<b>100 points</b>

### Grading Scale

A = 90%-100%

B = 80%-89%

F = 79% or Below

## TECHNOLOGY REQUIREMENTS

### LMS

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are the technical requirements

Learning Management System (LMS) Requirements:

View the [Learning Management System Requirements Webpage](#).

LMS Browser Support:

Learn more on the [LMS Browser Support Webpage](#).

YouSeeU Virtual Classroom Requirements:

Visit the [Virtual Classroom Requirements Webpage](#).

## ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903-468-6000 or [helpdesk@tamuc.edu](mailto:helpdesk@tamuc.edu).

**Note:** Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

## COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

### Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 877-325-7778. Other support options can be found on the [Brightspace Support Webpage](#).

## **Interaction with Instructor Statement**

This is an online course; therefore, expect most communication to be online as well. Correspondence will always be through university email (your “myLeo” mail) and announcements in myLeo online (D2L). The instructor will make every effort to respond to emails within 24 provided the correspondence follows the requirements listed below. Students are encouraged to check university email daily.

## **COURSE AND UNIVERSITY PROCEDURES/POLICIES**

### **Syllabus Change Policy**

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

### **Student Conduct**

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail online in the [Student Guidebook](#).

Students should also consult the [Rules of Netiquette Webpage](#) for more information regarding how to interact with students in an online forum.

### **TAMUC Attendance**

For more information about the attendance policy, please view the [Attendance Webpage](#) and the [Class Attendance Policy](#)

### **Academic Integrity**

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty Policy](#)  
[Undergraduate Student Academic Dishonesty Form](#)

### **Students with Disabilities-- ADA Statement**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

#### **Office of Student Disability Resources and Services**

Texas A&M University-Commerce  
Velma K. Waters Library Rm 162  
Phone (903) 886-5150 or (903) 886-5835  
Fax (903) 468-8148  
Email: [studentdisabilityservices@tamuc.edu](mailto:studentdisabilityservices@tamuc.edu)  
Website: [Office of Student Disability Resources and Services](#)

### **Nondiscrimination Notice**

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information, or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

## Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

## Counseling Services

The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit <http://www.tamuc.edu/counsel>.

## COURSE OUTLINE / CALENDAR

***Acceleration Process Deadline: The deadline to accelerate is Friday, February 17, 2023 at 5 pm. Please submit assignments to me no later than Wednesday, February 15, 2023 at 5 pm if you are attempting to accelerate so that I have ample time to grade them and provide you with a complete email for acceleration purposes.***

Learning Objectives and Competencies	Material to Review	Assignments/Notes
Syllabus	Several Links to websites are embedded in each set of lecture notes. Pre-tests and post-tests will include information from these as well as from the lecture notes	For each learning outcome, you will first take a pre-test to measure your current level of knowledge in the competency, then read the lecture notes, and finish with a post-test. Your final project is a Natural Disaster Event 2020-23 Essay
<b>Comp 1: Overview of Natural Disasters— Students will demonstrate knowledge of the different types of natural disasters, their relative impact on human populations, and the factors that can increase or decrease those impacts</b>		
Learning Outcome 1	Students will identify which types of natural disasters cause the most fatalities, where they cause the highest number of fatalities, and where the most economic damage occurs	In this section we see that, in the U.S., weather disasters top the list, while world-wide, geologic disasters are more significant
Learning Outcome 2	Students will list the five broad categories of natural disasters and the specific types of disasters within each category	Here we categorize disasters into meteorological, geological, biological, cosmological, and human-caused

Learning Outcome 3	Students will list and explain several factors that either mitigate or exacerbate natural disasters, including the stages of emergency response following a natural disaster	Here we learn factors that govern the severity of natural disasters, plus the sequence of events from preparation, thru the event, to response and recovery
<b>Comp 2: Meteorological Hazards — Students will demonstrate a basic understanding of the science of both normal weather and weather disasters, and how humans can best cope with weather disasters</b>		
Learning Outcome 1	Students will explain the five keys to understanding the mechanisms that create the general weather patterns	In this section, we look at atmospheric circulation, methods of uplift of air, adiabatic temperature changes, humidity, air masses and fronts
Learning Outcome 2	Students will describe three reasons why extreme weather sometimes occurs	This section discusses changes in atmospheric chemistry, jet stream, and El Niño
Learning Outcome 3	Students will describe the formation of severe storms, tornadoes, hurricanes, and other weather-related disasters, and how people can best deal with them	Here we discuss tornadoes, hurricanes, floods, wildfire, drought, extreme heat, and extreme cold
<b>Comp 3: Geologic Disasters — Students will be able to explain the causes of the major types of geologic disasters</b>		
Learning Outcome 1	Students will describe the driving force of plate tectonics, the different types of tectonic plate boundaries, and the cause of earthquakes and volcanoes as they relate to plate boundaries and motions	This section discusses the structure of Earth and the dynamic processes of plate tectonics as they relate to many of the geologic natural disasters
Learning Outcome 2	Students will explain the differences, and the reasons for the differences between the two broad types of volcanoes	We look at how plate tectonic setting causes some volcanoes to be relatively gentle while others are deadly and disastrous
Learning Outcome 3	Students will explain the characteristics of tsunami	This section discusses the cause, behavior, and effects of tsunami
Learning Outcome 4	Students will describe other types of geologic hazards including mass wasting, soil erosion, coastal erosion, sinkholes, land subsidence, and the specific disaster of Lake Nyos	Several smaller-scale or slower-scale geologic disasters are discussed here, plus an unusual type of disaster illustrated by the Lake Nyos incident in 1986
<b>Comp 4: Biological, Cosmological &amp; Unnatural Disasters — Students will demonstrate a basic understanding of major biological, cosmological, and unnatural (human caused) hazards and disasters</b>		
Learning Outcome 1	Students will describe what invasive species are, why they are a problem, list several specific invasive species, and	In this section we focus on the ecology-disrupting problem of invasive species, and characteristics that define them and make them a greater worldwide threat

	explain the difference between an invasive species and a pest plague	than periodic pest plagues, such as locusts or fungi problems
Learning Outcome 2	Students will differentiate between human disease epidemics and pandemics, and list examples of current or past pandemics	Here we view several past epidemics & pandemics, and look more closely at the current threats of HIV, Ebola, and the COVID-19 viruses
Learning Outcome 3	Students will explain the relevant factors in the potential disasters of major meteorite strikes and Earth magnetic reversals	In this section, we see that the potential for a disastrous meteorite strike is close to zero, as are the doomsday predictions related to a flip in Earth's magnetic poles
Learning Outcome 4	Students will list several past human-caused major disasters	People have created numerous disasters, mostly in the form of hazardous chemical releases—accidental or purposeful—and some due to human interference with nature
Essay	3-5 page essay over the Natural Disaster 2020-2023 topic of your choice.	A link is embedded in the assignment details that outlines FEMA.gov declared natural disasters that have occurred in 2020-2023.