



ENVS 103 01E Natural Disasters

COURSE SYLLABUS: Fall 2025

Monday, Wednesday, Friday 9:00 - 9:50 AM

Location: STC Room 135

INSTRUCTOR INFORMATION

Instructor: Dr. Emmanuella Anang, PhD
Office Location: Science Building (STC), 241
Office Hours: Thursday 11 AM – 1:30 PM
University Email Address: emmanuella.anang@etamu.edu
Preferred Form of Communication: Email

COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings

Textbook(s) Recommended: Title: Natural Disasters, 10th Edition, 2017

Title status: Available

Imprint: The McGraw-Hill Companies Inc., New York, NY, USA. Author: Abbott, P. A.

ISBN: 9780078022982

Software Required: MS Office

Optional Texts and/or Materials: Handouts and Academic worksheets, Natural Hazards: Earth's Processes as Hazards, Disasters and Catastrophes (6th ed.) by Keller E.A. & DeVecchio, D.E (2021). ISBN: 9780137516503 (eTextbook option available).

Course Description

This course is designed to introduce students to the science of major natural disasters, exploring their causes, impacts, and mitigation strategies. Emphasis will be placed on understanding the mechanisms of why natural disasters occur and the environmental, economic and societal implications of disasters.

Instructional Method: The course is in class (face to face).

Student Learning Outcomes

1. **Critical Thinking:** Students will be able to differentiate between fact and opinion; be able to discern between relevant and irrelevant information, recognize bias in source material, and critically examine a diversity of source material. Students will be able to describe the physical

mechanisms that combine to form both normal and extreme weather patterns. Students will also be able to distinguish which energy sources (internal and/or external energy) are fueling which natural disasters. Explain how tectonic plate dynamics result in earthquakes, volcanoes, and other geologic natural disasters. Students will be able to describe the factors that contribute to other types of disasters either natural or human-made disasters. 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. Students will also be able to describe the prediction phenomena, warning systems, and precautionary measures for individual natural disaster.

2. **Communication:** In written, oral, and/or visual communication, students will communicate in a manner appropriate to audience and occasion, with an evident message and organizational structure. The course is designed to present one natural disaster by a group of students at the end of the semester where students will answer the listed predetermined questions for their preselected disaster. Class presentation will help students to exchange their research findings on a specific disaster to the whole class.
3. **Teamwork:** Students will be able to work together toward a shared purpose relevant to the course or discipline with a sense of shared responsibility for meeting that purpose. Students must do their group study to develop a report for their preselected disaster. Students will learn how to work in a group, how to distribute workload among group members, and finally how to solve problems in a group. There will be equal group members for each group. In class, groups will work for 10 to 15 minutes to answer 1 or 2 questions. This way instructor will also be able to evaluate the teamwork performance for each group other than the quality of report and class presentations.
4. **Empirical and Quantitative Skills:** Students will be able understand and utilize mathematical functions and empirical principles and processes. There are calculations on how to measure the Adiabatic Lapse rate, atmospheric temperature and pressure gradient, how to calculate the flood intensity by measuring stream cross sectional areas.

COURSE REQUIREMENTS

Minimal Technical Skills Needed

Students should have Algebra, basic math, basic chemistry skills.

Students should be able to navigate the D2L for assignments, quizzes and resources.

Students should be able to use basic word processing and presentation software, interpret charts, graphs and maps.

Students should be able to search for credible scientific and governmental disaster information online.

Instructional Methods

Conducting lectures, resorting to videos and visual-aid presentations, e.g., "PowerPoint" and "You tube", solving math problems together with the students in the classroom, expecting student participation in the classroom discussions, assigning Exams and homework assignments, etc.

Student Responsibilities or Tips for Success in the Course

Turn-in all the assigned academic work; actively participate in verbal discussions; take notes and copy-write explanations during class periods; take assigned written Exams; log into the course website, regularly; complete the assigned weekly study.

Learning Strategies

Lectures

Reading assignments to be discussed in class

Analysis of Case Study Samples

Individual work, analysis of free reading homework

Assumptions, Expectations, Philosophy

University students are a select group of students soon to be professionals.

Instructors can have high expectations of student performance.

Demanding courses benefit students more than easy courses.

Assignments are due on time unless you have made a prior arrangement with me (only granted for unusual or extenuating circumstances and in case of health issues proper medical excuse is required).

Come to class prepared, having read and thought about the assigned readings; course materials are meant to be studied, not merely read. Actively participate in class discussions; ask questions.

In university, a lot of your learning will occur outside of the classroom, during your own research, and in formal and informal interactions with your peers— both here and at meetings, correspondence, etc. Therefore, I expect you to take full advantage of ALL learning opportunities, including seminars and invited speakers.

Reading and assimilating information is a critical part of your current and continuing education. This will help you become a better writer, a more rounded individual, and expose you to subjects outside of your immediate knowledge.

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GRADING

Final grades in this course will be based on the following scale:

A= 90%-100%; B = 80%-89%; C = 70%-79%; D = 60%-69%; F = 59% or Below

Tentative course outline

Date	Topics (Book Chapters)	Subtopics
Aug 25 – Sept 19	Introduction/Welcome	Student and Faculty introduction Introduction to Natural Disasters Global Scenarios of Natural Disasters Socioeconomic Impacts of Natural Disasters Examples of Different Natural Disasters
	Chapter 2 – 6: Internal Energy caused Natural disasters Plate Tectonics, Earthquakes, volcanic eruption, Tsunami	
Sept 22- 23	Quiz-1 Exam 1	Sept 23 (Exam and quiz will remain open until Sept 24)
Sept 24 – Oct 24	Chapter 9 -14: External energy caused natural disasters TORNADOS, Lightning and thunderstorm, Hurricanes, Floods	
Oct 27th - Oct 28th	Quiz 2 & Exam 2	
Oct 29– Nov 21	Chapter 15 – 16 Mass movements	
Coastal processes and hazards Natural Disasters and Human Populations Risk Assessment		
Nov 24-25 Nov 26-28	Quiz 3 Thanksgiving break	
Dec 1- 4	Catch up with any topics that may fall behind during the semester Assignment discussion	
Dec 5	Presentation of Assignments	
	Final submission Assignments	
Dec 8-12 Final week	Exam 3 (final exam)	

One Assignment (10%)

1. Consider one Natural Disaster.
2. Why are you interested in that Disaster? Example: explain about their local or regional or worldwide activities.
3. Consider one specific geographic location of that hazard.
4. Methods to predict that hazard (if any).
5. Explain How did that hazard started to form at that location:
 - a. Factors Influencing that hazard to take place
6. Risk Assessment of that specific hazard
 - a. Human Fatalities
 - b. Economic Loss
7. Potential suggestions (at least 2) to avoid or minimize the loss.

Assignment Guideline:

3-5 pages, double space, 12 fonts, Time New Roman/Calibri.

Assignment Rubric:

- a. Selection of a natural disaster and its geographic location: 2 points
- b. Writing skill to explain the problem of that specific disaster: 3 points
- c. Explanation skill on the process of that specific hazard started to form at that location:
3 points
- d. Explanation skills on risk assessment for that specific disaster: 2 points

Assessments

Grades Distribution:

3 Quizzes (10% each x 3 = 30 %)

2 Exams (15 % each x 2 = 30 %)

Final Exam 20 %

One Assignment (10%)

Class Attendance and Participation (10%)

Exam:

There will be a total of 2 **exams** for the course. Exams will be designed to evaluate the student's understanding of the subjects covered in class and empirical and quantitative skills. Study guide will be given to help you prepare for exams.

Group Project and Group Presentation:

In order to culture and assess your teamwork ability, students will form teams of **3-6 members**, conceptualize, design, and perform a project targeting a natural disaster (energy source of natural disaster, formation mechanism, prediction and warning systems, risk assessment of that natural disaster etc.). The whole team will submit one well written and photo documented paper describing the project, the project goals, the duties of each member, the time spent (including a documented work schedule), the achievements, and the lessons learned. The team members will be required to evaluate each other's contribution to the team effort (blind evaluation) to determine 33% of each member's assignment grade. **The photo documentation** should include images showing that you participated in the project. The paper should be **a minimum of 5 written pages** excluding the title page and excluding the photo documentation page(s). Use 12 pt font, 1.5 line spacing.

Number your pages. **The paper must be sent to assignment submission folder in D2L on or before 5 pm on Dec 8. Plagiarized papers will receive a zero score! You must find team members by yourself. If your team contains less than 3 or more than 6 members, you can only receive 50% of the total points. Assignments are expected to be submitted on time.**

Group will also have to present their work in front of the class in a PowerPoint presentation. Each group member will answer at least one question. Presentation will consider 20% of your grade. So, every member should present at least 1 question.

Course Requirements and Evaluation Methods

Attendance and punctuality is required and non-negotiable.

Homework, quizzes, exams, and term paper are required.

Activities that distract surrounding people are inconsiderate and disrespectful. Activities such as texting, emailing, browsing or using cellular phones are prohibited during Lecture.

We encourage student contribution to the overall progress of the group. We encourage interactive participation. It is necessary that students have a professional and ethical behavior through the entire course. Lectures are a group activity, and so it requires social consideration and respect amongst members of the group, teachers and professors.

Penalty enforcement (I reserve the right to adjust your grade for violation of the minimum expectations).

Make-up exams will only be given if arrangements are made with the instructor before missing the scheduled exam. A documented excuse will be required.

Otherwise, **missing academic work** will be counted as zeroes in the overall grade computation

COURSE AND UNIVERSITY PROCEDURES/POLICIES

NOTE #1: Late assignments are not accepted. Very, very extreme circumstances may or may not provide a warranted exception. This course moves very fast and there is not enough time to catch up. In case of extreme circumstances, I may accept late work. However, 10 points will be deducted from late assignments. Research Written Report and Oral Presentation: Each student will choose 1 type of treatment technology. The guidelines for the Written Report and Oral Presentation are in "D2L".

NOTE #2: Please email your presentation to the Professor, before your Presentation Day.

NOTE #3: Missed Homework and Exams are not acceptable. Very, very extreme circumstances may or may not provide a warranted exception. This course moves very fast and there is not enough time to catch up. In case of extreme circumstances, I may accept let you take a missed Exam or submit a missed Homework. However, 20 points may be deducted from the missed Exam or from the missed Homework.

Overall Weighted Average Grade will be computed by adding the percentage of each grade earned from each assignment, as stated on the Course Grading table, shown above. **ONLY** unofficial grades will be posted on D2L. Official grades are in my grade book. It is most strongly recommended that each student retain their grades until the final grade has been entered into the university system to ensure all was recorded correctly.

TECHNOLOGY REQUIREMENTS

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo. Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace - Platform - Requirements>

LMS Browser Support:

https://documentation.brightspace.com/EN/brightspace/requirements/all/ browser_support.htm

YouSeeU Virtual Classroom Requirements:

<https://support.youseeu.com/hc/en - us/articles/115007031107 - Basic - System Requirements>

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.

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 1-877-325-7778. Other support options can be found here: <https://community.brightspace.com/support/s/contactsupport>

Interaction with Instructor Statement Weekdays: 1-24 hours; Evenings,
Weekends: 5-~48 hours

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.

University Specific Procedures

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 in the [Student Guidebook](#).

<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum:

<https://www.britannica.com/topic/netiquette>

TAMUC Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

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 13.99.99.R0.03](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

[Graduate Student Academic Dishonesty 13.99.99.R0.10](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf>

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

Gee Library- Room 132

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: studentdisabilityservices@tamuc.edu

Website: [Office of Student Disability Resources and Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

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.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

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 903886-5868 or 9-1-1

AI use in course [Draft 2, May 25, 2023]

Texas A&M University-Commerce acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their

instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty

13.99.99.R0.10 Graduate Student Academic Dishonesty