ENVS-103-01W – Natural Disasters

COURSE SYLLABUS: Fall, 2026

INSTRUCTOR INFORMATION

Instructor: Hong Giang Hoang, PhD.
Office Location:
Office Hours:
Office Phone: 785-424-2450
Office Fax:
University Email Address: giang.hoang@etamu.edu
Preferred Form of Communication**:** Email
Communication Response Time: 9:00 AM – 12:00 PM

COURSE INFORMATION

MATERIALS – TEXTBOOKS, READINGS, SUPPLEMENTAL READINGS

Textbook(s) Required: Patrick L. Abbott, Natural Disasters, 12th Edition, McGraw Hill.
Software Required:
Optional Texts and/or Materials: textbook readings, lectures, figures, case studies, discussions, and assessments.

COURSE DESCRIPTION

This course introduces the scientific processes that produce major natural hazards and examines how those hazards become disasters through interactions with human populations and the built environment. Topics include Earth's internal energy, plate tectonics, earthquakes, tsunamis, volcanoes, weather and climate, severe storms, hurricanes, climate change, floods, wildfires, and extraterrestrial impacts. Emphasis is placed on hazard mechanisms, geographic patterns, vulnerability, risk, preparedness, mitigation, and contemporary case studies.

STUDENT LEARNING OUTCOMES

1. Describe how natural disasters affect human populations, communities, and cultural landscapes.
2. Analyze how human activities and land-use decisions can increase or reduce the impacts of natural hazards.
3. Identify geographic regions vulnerable to major natural hazards and explain why those hazards occur there.

4. Distinguish natural processes from human factors that modify the severity and consequences of disasters.
5. Explain how Earth processes generate earthquakes, volcanic eruptions, tsunamis, and other geologic hazards.
6. Explain the atmospheric and oceanic processes that produce normal and extreme weather patterns.
7. Evaluate the causes, impacts, preparedness strategies, and mitigation approaches associated with major natural disasters.
8. Apply course concepts to current and historical disaster case studies and communicate scientific information clearly.

Competency 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.
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.
3. Empirical and Quantitative Skills: Students will be able analyze and interpret environmental data, apply basic quantitative methods, and use graphs, tables, and statistical information to evaluate environmental problems and support evidence-based conclusions.
4. 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.

COURSE REQUIREMENTS

MINIMAL TECHNICAL SKILLS NEEDED

Students should have basic computer and internet skills, including the ability to use D2L, Microsoft Word, PowerPoint, and Excel; access and submit course materials online; communicate electronically; and conduct basic searches for scientific information.

INSTRUCTIONAL METHODS

Students will learn through instructor lectures, textbook readings, figures and maps, short videos or web resources when appropriate, discussion, and analysis of current and historical natural-disaster events. D2L will be used for course announcements, learning materials, assignments, assessments, and grades.

STUDENT RESPONSIBILITIES OR TIPS FOR SUCCESS IN THE COURSE

- Log in regularly: Check the course D2L and announcements frequently for updates, reminders, and instructor messages.
- Manage your time: Review the course schedule each week and plan ahead to complete readings, assignments, quizzes, and discussions before their deadlines.
- Participate actively: Engage with course materials, discussions, activities, and other learning opportunities.

- Ask questions early: Contact the instructor when you need clarification or support rather than waiting until an assignment is due.
- Stay organized: Keep track of deadlines and save copies of important course materials and completed work.
- Complete assigned readings and activities: Course content is designed to prepare you for assessments and help you meet the learning objectives.
- Communicate professionally: Use respectful, constructive, and inclusive language when communicating with the instructor and classmates.
- Take care of your learning environment: Create a consistent study routine and minimize distractions when possible.
- Practice academic integrity: Submit your own work and properly acknowledge sources and collaborators when required.
- Plan for technology issues: Do not wait until the last minute to submit work. Allow extra time for internet, software, or file-upload problems.
- Monitor your progress: Review feedback and grades regularly and use them to improve your learning throughout the course.

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**

Assessment Weights

The final letter grade will be calculated based on the following assessment weights:

- **Monthly Assignments:** 30% of the final grade
- **Graded Course Activities:** 20% of the final grade
- **Mid-Semester Exam:** 20% of the final grade
- **Cumulative Final Exam:** 30% of the final grade

Grading is based on the timely and correct submission of assignments, participation in graded course activities, performance on the mid-semester examination, and performance on the cumulative final examination. The mid-semester exam covers material presented up to that point in the course. The cumulative final exam covers all information presented in class lectures, the textbook, and additional required readings. Exact assessment dates and point values will be posted in D2L.

ASSESSMENTS

Assignments, graded course activities, and online exams will be used to support and assess the learning objectives and competency student learning outcomes.

Monthly assignments

- Monthly homework assignments will be used to evaluate your critical thinking and written communication ability. Each assignment must be prepared electronically and submitted as an

MSWORD (.doc, .docx) or PDF document with a 12-point font, 1-inch margins (all around) and 1.25 line spacing. Suggested length: 2–3 pages, including figures and tables. Detailed monthly assignment topics are provided below.

- The assignment must be complete, correct, and submitted on time ("on time" means the assignment must be submitted in D2L before 5 pm on Sep 30, Oct 31 and Nov 30). Monthly assignments won't be accepted late.

  Monthly assignment Topics

  1. **Earthquakes**

     Requirements and score weighting:

     - Explain earthquakes (30%)
     - Choose one real earthquake to analyze its causes and impacts (40%)
     - Recommend 2 ways to reduce future risk (30%)

     Length: Approximately 3 pages.

  2. **Extreme Weather & Climate Change**

     Requirements and score weighting:

     - Explain extreme weather and climate change (30%)
     - Choose one real event and discuss its causes and impacts (40%)
     - Recommend 2 strategies to reduce future risks (30%)

     Length: Approximately 3 pages.

  3. **Floods, Wildfires & Disaster Resilience**

     Requirements and score weighting:

     - Explain the causes and impacts of floods and wildfires (25%)
     - Choose one community affected by a natural hazard (25%)
     - Analyze its vulnerability and disaster risks (25%)
     - Recommend 3 strategies to improve preparedness and resilience (25%)

     Length: **Approximately 3 pages.**

Graded course activities:

- Weekly quizzes or Discussion posts and responses will be displayed on the D2L system every week if applicable. Students should check the system to view these weekly activities.
- Graded course activities must be complete, correct, and submitted on time.

Exams:

- There will be two exams total (50% of the final grade). Exams will be designed to evaluate the student's understanding of the subjects covered in class and empirical and quantitative skills.
- Examinations will be performed online. All scheduling conflicts must be discussed at least 1 week prior to the scheduled date of the exam. In the event of an emergency or illness on the day of an exam, you must notify me before the exam. If requested, students must provide verification of the absence in order to schedule a make-up exam. Students who do not make alternate arrangements prior to the exam will be given a grade of "0" for that exam.

Course Outline/Calendar

Course Outline

Unit 1 / Ch. 1: Human Disasters – populations, vulnerability, and disaster risk
Unit 2 / Ch. 2: Internal Energy – Earth structure, heat, and internal processes
Unit 3 / Ch. 3: Seismology – earthquakes, faults, seismic waves, magnitude, and intensity
Unit 4 / Ch. 4: Plate Tectonics – plate boundaries, crustal movement, and hazards
Unit 5 / Ch. 5: Earthquakes in the U.S. and Canada – regional hazards, risk, and preparedness
Unit 6 / Ch. 8: Tsunamis – generation, propagation, impacts, and warning systems
Unit 7 / Ch. 6: Volcanic Eruptions – volcano formation, eruption styles, and hazards
Unit 8 / Ch. 7: Volcanoes from the Past – historical eruptions and lessons for future risk
Unit 9 / Ch. 9: Weather and Climate – atmosphere, energy, circulation, and extreme weather
Unit 10 / Ch. 10: Tornadoes and Storms – thunderstorms, tornado formation, intensity, and hazards
Unit 11 / Ch. 11: Hurricanes – tropical cyclone formation, storm surge, and impacts
Unit 12 / Ch. 12: Climate Change – climate processes, trends, extremes, adaptation, and mitigation
Unit 13 / Ch. 13: Floods – causes, types, impacts, and management
Unit 14 / Ch. 14: Wildfires – ignition, fire behavior, impacts, and management
Unit 15 / Ch. 17: Space Objects – asteroids, comets, and impact hazards

Fall 2026 Course Timetable

Fall 2026 classes begin Thursday, August 20; therefore, the first meeting of this Monday/Wednesday/Friday section is Friday, August 21. Regular classes end Friday, December 4. The Midterm Exam is scheduled for October 14, and the Final Exam is scheduled for December 7. This timetable may be adjusted based on class progress.

Week	Date	Topic	Lecture / Activity
1	Fri. Aug. 21	**Course Introduction**	Welcome/ Instructor introduction, syllabus, course policies, expectations
2	Wed. Aug. 26	**Ch. 1 – Human Disasters**	Natural hazards, disasters, populations Vulnerability, exposure, risk, human influence
3	Wed. Sep. 2	**Ch. 2 – Internal Energy**	Earth structure and internal energy Heat flow and geologic processes
4	Wed. Sep. 9	**Ch. 3 – Seismology**	Earthquake causes, faults, seismic waves Magnitude, intensity, impacts, review
5	Wed. Sep. 16	**Ch. 4 – Plate Tectonics**	Plate tectonic theory Plate boundaries and crustal movement Plate tectonics and natural hazards
6	Wed. Sep. 23	**Ch. 5 – Earthquakes in U.S. & Canada**	Major North American earthquakes Earthquake hazards and risk Prediction, preparedness
7	Wed. Sep. 30	**Ch. 8 – Tsunamis**	Formation and causes Propagation, coastal impacts Warning systems
8	Wed. Oct. 7	**Ch. 6 – Volcanic Eruptions**	Volcano formation and types Eruption mechanisms and volcanic hazards Risk, monitoring, case studies

The *syllabus/schedule are subject to change.*

9	Wed. Oct. 14	Midterm Exam **Ch. 7 – Volcanoes from the Past**	Online Quizzes. Includes all material covered between Friday, Aug 21, and Friday. Oct. 7 Historical volcanic eruptions Environmental and societal impacts
10	Wed. Oct. 21	**Ch. 9 – Weather & Climate**	Atmosphere, weather, climate fundamentals Atmospheric circulation and energy Extreme weather processes
11	Wed. Oct. 28	**Ch. 10 – Tornadoes & Storms**	Tornado formation, intensity, distribution Thunderstorms and severe weather
12	Wed. Nov. 4	**Ch. 11 – Hurricanes**	Tropical cyclone formation Intensity, storm surge, impacts Major hurricane case studies
13	Wed. Nov. 11	**Ch. 12 – Climate Change**	Climate change fundamentals Climate change and extreme events Impacts, adaptation, mitigation
14	Wed. Nov. 18	**Ch. 13 – Floods**	Types and causes of floods Flood hazards, risk, human impacts Flood management and case studies
15	Mon. Nov. 23	**Ch. 14 – Wildfires**	Causes, behavior, environmental controls Impacts, management
16	Wed. Dec. 2	**Ch. 17 – Space Objects** Course Wrap-Up	Asteroids, comets, impact hazards Space-object impacts, review and conclusions
17	Mon.Dec.7	Final Exam	Online Quizzes. Includes all material covered between Friday, Aug 21, and Friday. Dec. 2

TECHNOLOGY REQUIREMENTS

LEARNING MANAGEMENT SYSTEM (LMS)

All course sections offered by East Texas A&M University have a corresponding course shell in the myLeo Online (D2L Brightspace) LMS. Below are the technical requirements:

- LMS Requirements
- LMS Browser Support
- Zoom Video Conferencing Tool

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@etamu.edu.

COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact me via email or D2L.

TECHNICAL SUPPORT

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778 or view other support options.

STUDENT RESPONSIBILITIES FOR THE COURSE

CWID AND PASSWORD

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@etamu.edu.

TECHNOLOGY-RELATED ISSUES

Personal computer and internet connection problems do not excuse the requirement to complete all coursework in a timely and satisfactory manner. Each student needs a backup method to handle these inevitable problems. These methods might include having a backup PC at home or work, temporarily using a computer at a friend's home, at the local library, at office service companies, at Starbucks, or at an ETAMU campus open computer lab.

TECHNOLOGY REQUIREMENTS AND SUPPORT

MINIMAL TECHNICAL SKILLS NEEDED

Students will need a reliable computer and internet access for this course. Students must be able to use myLeo email, myLeo Online (D2L Brightspace), and Microsoft Office effectively.

LEARNING MANAGEMENT SYSTEM (LMS) – D2L Brightspace

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

- View the Learning Management System Requirements Webpage.
- Learn more on the LMS Browser Support Webpage.

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 on the Brightspace Support Webpage.

COMMUNICATION AND SUPPORT

INTERACTION WITH INSTRUCTOR STATEMENT

If you have any questions or are having difficulties with the course material, please contact your instructor. Correspondence will always be through university email (your "myLeo" mail), and announcements will be posted in myLeo online (D2L Brightspace). You will not RECEIVE email through Brightspace, so be sure to check your ETAMU email for communication. Students are encouraged to check their university email daily.

INCLUDE THE FOLLOWING IN EMAILS WITH INSTRUCTOR:

- Course name and subject in the subject line
- Salutation (Good afternoon, Dr. Tran)
- Proper email etiquette (no "text" emails – use proper grammar and punctuation)
- Student name and CWID after the body of the email (possibly add to student signature on email)

COURSE AND UNIVERSITY PROCEDURES/POLICIES

SYLLABUS CHANGE POLICY

The syllabus is a guide. Circumstances and events, such as student progress, may necessitate the instructor's modification of 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.

ETAMU ATTENDANCE

For more information about the attendance policy, please view the Attendance Webpage and the Class Attendance Policy.

ACADEMIC INTEGRITY

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

Undergraduate Academic Dishonesty University Procedure 13.99.99.R0.03

Undergraduate Student Academic Dishonesty Form

Graduate Student Academic Dishonesty University Procedure 13.99.99.R0.10

Graduate Student Academic Dishonesty Form

USE OF ARTIFICIAL INTELLIGENCE

East Texas A&M University acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that have 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

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 reasonable accommodations for their disabilities. If you have a disability requiring an accommodation, please contact:

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

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NONDISCRIMINATION NOTICE

East Texas A&M University 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 East Texas A&M University 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 ETAMU 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 East Texas A&M University campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

EAST TEXAS A&M SUPPORTS STUDENTS' MENTAL HEALTH – COUNSELING SERVICES

The Counseling Center at East Texas A&M University, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connections 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 the Counseling Center website.

MENTAL HEALTH AND WELL-BEING

The university aims to provide students with essential knowledge and tools to understand and support mental health. As part of our commitment to your well-being, we offer access to Telus Health, a service available 24/7/365 via chat, phone, or webinar. Scan the QR code or download the app and explore the resources available to you for guidance and support whenever you need it.

As an Institutional Member of the National Association of Schools of Music, East Texas State A&M University supports the Association's commitment to student health and wellness. The Musician Health and Safety - East Texas A&M University website provides links to information and resources on physical and mental well-being and offers preventive measures students can take to avoid serious and/or chronic conditions.

DEPARTMENT AND ACCREDITING AGENCY STATEMENT: