

## **GEOG140 Natural Disasters: Earthquakes, Floods, and Fires**

### **Overview**

Natural disasters are an important topic that impacts the physical, environmental, political, social, economic, and ethical dimensions of society. There are many different types, and they occur in complex geographical patterns that are changing in space and time. How can we best understand these events, their causes and consequences, and our options for the future? This class provides an exciting introduction to the science of natural disasters, including the major types and classifications of events, their geographical pattern and frequency, key concepts, and major methods of study. To achieve its learning outcomes, this course utilizes new learning resources, modules, case studies, current events, and student projects.

### **Course Credit/General Education**

This course is classified as a Terp Young Scholars (YS41) Course, and 040Y Course. The course is 3.0 credit hours.

### **Time and Room**

Meets in person: July 14, 2025 - August 1, 2025  
MTuWThF 10:00am - 1:00pm LEF 2166

### **Instructors and TA**

- Instructor: Dr. Guangxiao Hu  
[gxhu@umd.edu](mailto:gxhu@umd.edu)  
Office Hours: by appointment
- Teaching assistant: Wen Qi  
[wendyqi@umd.edu](mailto:wendyqi@umd.edu)  
Office Hours: by appointment

### **Learning Objectives**

- Describe major types of natural disasters including their classification, frequency, distribution, extent, causes, consequences, and costs
- Explain and apply related concepts of exposure, vulnerability, risk, preparation, recovery, restoration, and resilience

- Understand methods used to detect, monitor, predict, mitigate, and prevent hazards, including the application of remote sensing and other technologies,
- Evaluate current events involving natural disasters including physical, environmental, political, social, economic, and ethical dimensions
- Consider the implications of global climate change and population growth for future natural disasters
- Report on a particular natural disaster of interest from an interdisciplinary perspective

### **Required Course Materials**

- There is no required textbook for this course.

### **Schedule/Topics**

| Day | Date   | Content                                    |
|-----|--------|--------------------------------------------|
| 1   | 14-Jul | Chapter 1 Introduction                     |
| 2   | 15-Jul | Chapter 2 ESS                              |
| 3   | 16-Jul | Chapter 3 Earthquakes                      |
| 4   | 17-Jul | Chapter 4 Volcanos                         |
| 5   | 18-Jul | Chapter 5 Tsunamis                         |
| 6   | 21-Jul | Chapter 7 Tornados                         |
| 7   | 22-Jul | Mid-term                                   |
| 8   | 23-Jul | Chapter 8 winter weather                   |
| 9   | 24-Jul | Chapter 9 hurricanes                       |
| 10  | 25-Jul | Chapter 10 floodings                       |
| 11  | 28-Jul | Chapter 11 drought fires                   |
| 12  | 29-Jul | Chapter 12 climate change                  |
| 13  | 30-Jul | Chapter 13 space weather                   |
| 14  | 31-Jul | Final exam review and project presentation |
| 15  | 1-Aug  | Final exam                                 |

### **Grading**

- Course participation 25%
  - Project 25%
  - Exam 1 25%
  - Exam 2 25%
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100%

All assignments will be given a numerical grade. The final numerical grade will be converted into a letter grade using the scale below.

| Numerical Grade (n) | Final Letter Grade |
|---------------------|--------------------|
| $96 \leq n < 100$   | A+                 |
| $93 \leq n < 96$    | A                  |
| $90 \leq n < 93$    | A-                 |
| $86 \leq n < 90$    | B+                 |
| $83 \leq n < 86$    | B                  |
| $80 \leq n < 83$    | B-                 |
| $76 \leq n < 80$    | C+                 |
| $73 \leq n < 76$    | C                  |
| $70 \leq n < 73$    | C-                 |
| $66 \leq n < 70$    | D+                 |
| $63 \leq n < 66$    | D                  |
| $60 \leq n < 63$    | D-                 |
| $0 \leq n < 60$     | F                  |

### **Projects**

Each student will complete a course project for this class. The purpose of the course project is for each student to identify, research, and address important issues related to a particular natural disaster that interests them. Additional details will be given in class.

### **Exams**

Two exams will be given, one mid-term, and one final. These exams will be equally weighted. The second exam will not be cumulative except for foundational content from the start of the course. Additional information on exams will be given in class.

### **Late Policy**

Late work will not be accepted and missed assignments or exams will result in a 0. Exceptions to this policy will be considered only for approved medical emergencies or other approved absences. Students seeking an exemption to the late policy must contact the instructor and be prepared to provide supporting documentation.

### **Disability**

Students with disabilities are encouraged to contact the instructor and register with Accessibility & Disability Service in Shoemaker Building. Arrangements will be made to accommodate students with disabilities. For more information on these services, please visit <https://www.counseling.umd.edu/ads>.

### **Honor Code**

The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. For more information on the Code of Academic Integrity, please visit <https://president.umd.edu/administration/policies/section-iii-academic-affairs/iii-100a>.

### **Student Conduct**

Students are expected to treat each other with respect. Disruptive behavior of any kind will not be tolerated. Students who are unable to show civility with one another, the teaching assistants, or the instructor will be subject to being referred to the Office of Student Conduct or to Campus Police. You are expected to adhere to the Code of Student Conduct. For more information on the Code of Student Conduct, please visit <https://president.umd.edu/administration/policies/section-v-student-affairs/v-100b>.

### **Additional Information**

Additional course information, assignment details, supplementary material, and updates to this syllabus will be conveyed in class and posted on the UMD Electronic Learning Management System (ELMS).

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