

**GEOG 140: Natural Disasters: Earthquakes, Floods and Fires**

**Spring 2019: Monday and Wednesday 10:00 am to 10:50 AM**

**SPH (School of Public Health) 1312**

**I-Series Course (3 Credits)**

**Instructor:**

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**Office hours:** Monday and Wednesday 11:30 am – 12:30 pm or by appointment

**Teaching Assistants:**

Hannah Younes

**Course description:**

Natural disasters change people's lives. Whether the event is an earthquake, a flood, or a wildfire, things will never be the same for either society or the environment. During a natural disaster, and in its aftermath humans and the environment are part of the event, there ceases to be a human/environment distinction. Natural disasters are becoming more common in this time of global environmental change and it is essential that today's students be equipped with the knowledge and skills to be leaders as we, as a society, understand the upheaval that these natural disasters are causing. In this I-Course, students will examine how natural disasters shape human society and ecosystems from the interdisciplinary perspective afforded by the field of Geography. Students will use the latest geographic science concepts and techniques in exploring these events. Through satellite imagery they will gain perspective on the scope of the event, while ecological and societal aspects of the events will be examined on a somewhat smaller scale. Furthermore, to expose students to the overall field of geography the class is going to be co-taught by a human, physical and technical geographer.

**Issue of current importance**

Natural disasters are happening with increasing frequency, and leaders of society are struggling to not only respond to them as they happen, but also to understand their causes in hopes of lessening their impact on humans and on ecosystems. Students will study recent natural disasters.

This course will concentrate on earthquakes, floods, and fires. Each of these natural disasters has complex causes and effects, and needs to be studied at multiple scales in the integrative manner that is hallmark of Geography. Perhaps the biggest reason that natural disasters are a current issue is that students need only look at the newspaper to see the earthquakes in Haiti, flooding in Pakistan, fires in Russia, Southern California, and the Amazon basin.

### **Learning outcomes**

After taking this I-Series course:

- Students will be able to identify the major questions and issues surrounding natural disaster, including the event's baseline information, the event itself and the event's aftermath.
- Students will be able to describe the sources experts on natural disasters use to explore issues and questions, including use of geospatial technologies such as satellite imagery to gain a multi-scale perspective of the ecological and societal aspects of the events
- Students will demonstrate an understanding of the basic terms, concepts and approaches of natural disasters, by studying satellite imagery to gain perspective on the scope of the event, while ecological and societal aspects of the events will be examined on a somewhat smaller scale.
- Students will demonstrate an understanding of the political, social, economic and ethical dimensions surrounding natural disasters, by examining the cultural relationships, political climates, communal norms and economic situations of impacted societies.
- Students will communicate the major ideas and issues surrounding natural disasters through presentations and/or discussions on an aspect of the topic (Baseline, Event, Aftermath) for each natural disaster.

### **After taking this Natural Sciences course:**

- Students will gain a broad understanding of the scientific principles and research methodologies associated with causes, impacts and implications of natural hazards, including the event's baseline information, the event itself and the event's aftermath.
- Students will be able to solve complex problems associated with natural hazards, such as the physical context of geomorphology, biogeography and climate and the social contexts of population in the disaster area and the cultural relationship to the physical environment
- Students will analyze scientific questions surrounding natural disasters in order to understand how such questions influence and are shaped by geographic, economic, social and political dimensions.

- Students will be able to effectively communicate scientific ideas through active participation in group discussions, group projects and presentations.

**The following topics will be covered.**

### **VOLCANOES AND EARTHQUAKES (INCLUDING TSUNAMIS):**

1. The science of earthquakes and volcanoes
2. The Kobe earthquake in Japan and the 2011 tsunami in Japan and issues concerning policies and preparedness
3. Threat of volcanoes and earthquakes in the region called the 'ring of fire'. The case of California
4. Focus upon the economic advantages surrounding the proximity to volcanoes
5. Preparedness for the potential threat caused by tsunamis: Focus on the December 26<sup>th</sup>, 2004 tsunami and the Japan 2011 tsunami

### **FLOODING:**

1. Causes of flooding and types of flooding
2. The great flood of 1993, Mid-West USA
3. Flooding in South East Asia, Monsoon
4. Flooding of the lower Mississippi – A case study of Hurricane Katrina
5. Flooding of the North East Coast of the US – Hurricane Sandy
6. Flooding of the Nile Delta region and the policy response
7. Implications for issues with the Aswan High Dam
8. Efforts to reduce negative effects of flooding in the Yangste River: The Case of the Three Gorges Dam
9. Global sea level rise and vulnerable coastal areas: focus on Venice, Bangladesh and small oceanic nations

### **FIRES:**

1. The ecology of fires
2. Fires in West Coast US and Australia

**THERE IS NO REQUIRED TEXT BOOK FOR THIS COURSE**

**Required work & Grading Method: There will be three exams, each worth 25 percent of the final grade. The discussion section of this class will be worth the final 25 percent of the grade.**

**Grading:** The three exams are **non-cumulative**, and will be primarily in a multiple choice format with each exam having the same weight towards the final grade.

**A note on querying exam scores:** Students are free to query their exam scores under the following conditions: You cannot query scores from a previous exam after a second exam is given, etc. Your window of opportunity therefore lasts from the end of the exam until the time the next one is given.

**Important dates:**

25% -Exam #1- Wednesday March 6<sup>th</sup>

25%- Exam #2- Wednesday April 17<sup>th</sup>

25% -Exam #3- To be decided

25% - Discussion section.

The discussions are based on the lectures and participation points are awarded.

**Final letter grades will be broken down the following way:**

96 – 100	A+
92 – 95	A
90 – 91	A-
88 – 89	B+
82 – 87	B
80 – 81	B-
78 – 79	C+
72 – 77	C
70 – 71	C-
60 – 69	D
Less than 60	F

**Discussion Section:**

It is imperative that students acquire the names of and email address of their group discussion leader as soon as possible. This is because students need to contact their discussion leader about questions pertaining to the discussion group and not the instructor of the class.

**STUDENTS WITH SPECIAL NEEDS AND COUNSELING FOR STUDENTS WITH**

**SPECIAL NEEDS:** If you are a student who has special needs that have been recognized by the University of Maryland at College Park, please see your instructor immediately so that arrangements can be made for you to maximize the chances for you to successfully complete this course. If you experience difficulties in mastering the academic demands of this course, please contact the Learning Assistance Service, 2201 Shoemaker Building, 301-314-7693 as soon as possible. Their educational counselors can provide assistance with time management, reading, note-taking, and exam preparation skills.

**DISABILITIES:** We will make every effort to accommodate students who are registered with the Disability Support Services (DSS) Office and who provide me with a University of Maryland DSS Accommodation form. This form must be presented to the Instructor as early as possible. We will not be able to accommodate students who are not registered with DSS or who do not provide me with documentation, which has been reviewed by DSS after this date

**RELIGIOUS OBSERVANCE:** By February 19<sup>th</sup>, students must provide the instructor in writing a request for a request for a make-up exam if you are unable to take an exam on the scheduled date due to a specific religious observance (specify). In addition, written requests must also be made for turning in a discussion assignment late or missing a discussion because of a specific religious observance. Please refer to the Online Undergraduate Catalog Policy on Religious Observance

**HONOR CODE:** The University has a nationally recognized Honor Code, administered by the Student Honor Council. The Student Honor Council proposed and the University Senate approved an Honor pledge. The University of Maryland Honor Pledge reads:

"I pledge on my honor that I have not given or received any unauthorized assistance on this assignment/examination."

Unless you are specifically advised to the contrary, the Pledge statement should be handwritten and signed on the front cover of all papers, projects, or other academic assignments submitted for evaluation in this course. Students who fail to write and sign the Pledge will be asked to confer with the instructor.

**Academic integrity:** Academic dishonesty is a serious offence that can result in suspension or expulsion from the University of Maryland. All assignments should be your own work. Since there are several writing assignments, plagiarism would not be tolerated. Please refer to the following website to determine how the University of Maryland defines plagiarism: <http://www.testudo.umd.edu/soc/dishonesty.html>.

**PLEASE BE ADVISED THAT THE MATERIAL OUTLINED IN THE SYLLABUS, INCLUDING DATES FOR EXAMS ARE SUBJECT TO CHANGE IN ACCORDANCE WITH THE OCCURRENCE OF SPECIAL CASES AND EVENTS.**