EENS 3050 **Natural Disasters** **Fall 2018**

Instructor: Dr. Stephen A. Nelson

Office Hours - by appointment, Room 208, Blessey Hall

e-mail - snelson@tulane.edu Office Phone 862-3194

Required Textbook: *Natural Hazards, Earth's Proceesses as Hazards, Disasters, and Catastrophes* 4th Edition by E.A. Keller and D.E. DeVecchio
Available in Tulane Bookstore

Course Grading: Your grade in this course will be determined on the following percentage distribution:

Midterm Exam	25%
Final Exam	30%
Homework	25%
Disaster Summary	20%

Web Site:
Further course materials, including a copy of this syllabus, all homework assignments, lecture notes, disaster summary information, announcements from the instructor, and useful internet links can be found on the Internet at: http://www.tulane.edu/~sanelson/Natural_Disasters/ Be sure to check this web page regularly throughout the course for important announcements and updates. In addition, slides from the lectures will be posted on Canvas, but only after the lecture has been finished in class.

Homework and Exams:
The midterm and final exams will be mostly objective in nature with questions coming from the reading material, lectures, and homework assignments. **No make-up exams will be given**. The Final Exam **will be cumulative**. Homework assignments consist of exercises designed to help the student gain practical experience in examining information about the occurrence and effects of natural disasters. **All homework answers must be typewritten.** Due dates are listed in the schedule below. All homework is due by the end of the class period on the due date. Due dates and times are firm. Late assignments will be subject to a 50% penalty and will not be graded in detail. Turning in homework by email is discouraged because it requires extra work for the instructor.

Disaster Summary:
Students will be required to find information on major natural disasters that occur during the time period of the course. Information for this summary will be found in newspapers, magazines, and on the internet. On the last day of class, each student will turn in a short summary of the 10 worst disasters that occurred during the course. This summary should include information on the type, details, effects, death/injury toll, and economic impact of each of these 10 disasters. Further information on the disaster summary can be found HERE.

Honor Code:
All students are expected to follow the Tulane Honor Code. If you are unfamiliar with the Honor Code or have any questions about it, get a copy of the Honor Code from your Dean's office or view it at: https://college.tulane.edu/code-of-academic-conduct. In short, the Honor Code states that all work turned in for credit must be **your own work in your own words**, unless clear and explicit acknowledgement of the sources of the work is given. This does not mean that collaboration on assignments is discouraged. You may collaborate, just make sure that the work you turn in is in your own words, and not just a copy of the work of your collaborators.

Course Goals and Objectives

1. The student will gain an understanding of the geologic and atmospheric processes responsible for natural hazards, including earthquakes, volcanic eruptions, landslides, flooding, tornadoes, hurricanes, drought, and asteroid impacts.
2. The student will gain an understanding of the areas susceptible to natural hazards and the frequency which these hazards become natural disasters.
3. The student will gain an understanding of practical ways to minimize the effects of natural disasters and mitigate the effects in areas where they are likely to occur.

Schedule of Lectures and Assignments

Date	Topic	Readings
Jan. 16	Intro and Natural Disasters & Assessing Hazards and Risk **Homework Assigned: I. Disaster Info on the Internet**	Preface Ch. 1
Jan. 18	Natural Disasters & Assessing Hazards and Risk Earth Structure, Materials, Systems, and Cycles	Ch.1 & 2.
Jan. 23	Earth Structure, Materials, Systems, and Cycles	Ch. 2
Jan. 25	Earthquakes: Causes and Measurements **Homework I Due** **Homework Assigned: II. Earthquake Exercises**	Ch. 3
Jan. 30	Earthquake Hazards and Risks	Ch 3
Feb. 1	Earthquake Prediction, Mitigation, and Control	Ch. 3
Feb. 6	Earthquake Case Histories	Ch. 3
Feb. 8	Tsunami **Homework II Due**	Ch. 4
Feb. 13	**MARDI GRAS NO CLASS**	
Feb. 15	Tsunami **Homework Assigned: III. Volcanological Exercises**	Ch. 4
Feb. 20	Volcanoes, Magma, and Volcanic Eruptions	Ch. 5
Feb. 22	Volcanic Landforms, Volcanoes and Plate Tectonics	Ch. 5

Feb. 27	Volcanic Hazards, Beneficial Aspects, and Predicting Eruptions **Homework III Due**	Ch. 5
Mar. 1	Volcanic Case Histories	Ch. 5
Mar. 6	**Midterm Exam**	
Mar. 8	River Systems & Causes of Flooding **Homework Assigned: IV Flooding Exercises**	Ch. 6
Mar. 13	River Flooding	Ch. 6
Mar. 15	Flooding Hazards, Prediction and Human Intervention	Ch. 6
Mar. 20	Flooding Case History	Ch. 6
Mar. 22	Mass Movements and Mass Movement Process **Homework IV Due** **Homework Assigned: V. Mass Movement Exercises**	Ch. 7
Mar. 27 & 29	SPRING BREAK - NO CLASS	
Apr. 3	Slope Stability, Triggering Events, Mass Movement Hazards	Ch. 7
Apr. 5	Subsidence: Dissolution & Human Related Causes	Ch. 8
Apr. 10	The Ocean-Atmosphere System **Homework V Due** **Homework Assigned: VI Weather Exercises**	Ch. 9 & 12
Apr. 12	Thunderstorms & Tornadoes	Ch. 9
Apr 17	Tropical Cyclones	Ch. 10
Apr. 19	Tropical Cyclones	Ch. 10
Apr. 24	Tropical Cyclones **Homework VI Due**	Ch. 10
Apr. 26	Coastal Hazards	Ch. 11
May 1	Meteorites & Impacting Events **Disaster Summary Due**	Ch.14
May 10	**FINAL EXAMINATION 1:00 PM - 5:00 PM**	

Obtain a PDF version of the Syllabus

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