NATURAL HAZARDS

DESCRIPTION

This course is about the interaction of humans with extreme natural events like storms, floods, earthquakes and droughts. We will examine how people become vulnerable to such events, how they are affected by them, how they contribute to causing them, how they cope - or fail to cope - and what they do when existing adjustments are unsuccessful. Special attention will be devoted to Super Storm Sandy, the worst recorded natural disaster to strike the mid-Atlantic region and perhaps a forerunner of challenges that will face this and other metropolitan areas in the future.

Although the emphasis here is on the human dimensions of natural extremes, previous knowledge about earth and atmospheric sciences will be helpful but is not required. The geographical scope of the course is global and students are encouraged to keep abreast of contemporary developments in hazards and disasters as reported in the mass media and other sources.

GOALS

The main goals of this course are to present a comprehensive, unified approach for analyzing and managing different types of natural hazards and to cultivate analytical skills for investigating hazard problems. An important secondary goal is to encourage
students to develop their own interests as points of entry to graduate study or professional careers in organizations concerned with the reporting, planning and management of extreme events (e.g. journalism, emergency management, homeland security, disaster relief, land development, law, hazard insurance, planning, architecture, hazard engineering, historic preservation, risk governance). There will be important career opportunities in this field both within New Jersey and elsewhere in the next several decades as the state recovers from hurricane/superstorm Sandy and the world confronts issues of increasing climate risks.

**LECTURE TOPICS:**

- **Sep. 4:** Introduction: Who are we; why are we here; and what are we going to do?
- **Sep. 8:** Saying what we mean: Issues of terminology and why they are important
- **Sep. 11:** Meanings of natural hazards & disasters: Cultural-historical perspectives
- **Sep. 15:** Impacts: Deaths, damage and disruption
- **Sep. 18:** Stages: Pre-onset; impact/emergency/crisis; post-event/recovery
- **Sep. 22:** Trends: Are disasters getting worse?
- **Sep. 25:** Climate change and other risk-forcing agents?
- **Sep. 29:** Vulnerability: Society’s Achilles’ heel
- **Oct. 2:** Responses: The range of adjustments and human choice
- **Oct. 6:** Modifying the burden of loss
- **Oct. 9:** Modifying the physical risks
- **Oct. 13:** Modifying human vulnerability
- **Oct. 16:** Risk perception, choice and decision-making
- **Oct. 20:** MIDTERM TEST
- **Oct. 23:** Natural Hazards of New Jersey - I
- **Oct. 27:** Natural Hazards of New Jersey – II
- **Oct. 30:** Earthquakes - I
- **Nov. 3:** Earthquakes - II
- **Nov. 6:** Floods - I
- **Nov. 10:** Floods - II
- **Nov. 13:** Wildfires - I
- **Nov. 17:** Wildfires - II
- **Nov. 20:** Drought - I
- **Nov. 24:** Drought - II
- **Nov. 25:** TBA
- **Nov. 28:** THANKSGIVING RECESS
- **Dec. 1:** Presentation of Student papers - I
- **Dec. 4:** Presentation of Student Papers - II
- **Dec. 8:** Looking to the future

**Dec. 22:** FINAL EXAMINATION (9-11 am)
READINGS

The main source is: Keith Smith. 2013 *Environmental Hazards: Assessing risk and reducing disaster* (New York: Routledge, 6th edit.). NOTE: Smith’s book has been substantially expanded and revised since the 5th edition. Other readings will also be important, especially during the first half of the course. These will be available at the Sakai site or in electronic journals carried by the Rutgers Library system. Please read according to the schedule below, completing the readings by the assigned date.

Sep.  8: **Saying what we mean**

Egan, John. 2009. “What is a disaster?” YouTube video narrated by the Director of the Program in Disaster Management and Humanitarian Assistance, University of Hawaii. (9 mins, 40 secs.)
http://www.youtube.com/watch?v=6maMy3LBHok


Sep.  11: **Meanings of Natural Hazards and disasters**

Introduction: Smith, Chapter 1

Mitchell, James K. “Perspectives on natural hazards” (Sakai Resources page)


Sep. 15: **Impacts of natural hazards and disasters**

Please review the following video (62 minutes) and keep notes on its contents: Japan’s Tsunami Caught on camera, ITN Production for Channel 4, 2011. [http://www.youtube.com/watch?v=oArd_9uZOnE&feature=related](http://www.youtube.com/watch?v=oArd_9uZOnE&feature=related)


“This is what a 6.0 earthquake looks like in China vs. America”, [http://www.rvot.org/earthquake-6-magnitude-china-vs-usa-difference795161/795161](http://www.rvot.org/earthquake-6-magnitude-china-vs-usa-difference795161/795161) or Sakai page side menu “China v US earthquake”


Sep. 18: **Stages of natural hazards and disasters**


Sep. 22: **Trends**

Smith, Chapter 2

Sep. 25: **Climate change and other risk-forcing agents**


Smith, Chapter 14, Section F “Climate change and environmental hazards” :419-434.
Sep. 29: **Vulnerability: Who, what, and where are vulnerable?**

Smith, Chapter 3, Sections F and G: “Vulnerability and resilience” and “Drivers of vulnerability and disaster”; 52-70.


Oct. 2: **Responses: The range of adjustments and human choices**

Smith, Chapter 4

U-Tube video “Farming in a drought” <http://www.youtube.com/watch?v=Zoib5aHWCOw>. Keep notes on the range of factors that this Australian farmer takes into account when making decisions about this hazard.

Oct. 6: **Modifying the burden of loss**

Smith, Chapters 4 and 5

Oct. 9: **Modifying the physical risks**

Smith, Chapters 4 and 5

Oct. 13: **Modifying human vulnerability**

Smith, Chapters 4 and 5
Oct. 16: **Risk perception, choice and decision-making**


Oct. 23/27: **Natural Hazards of New Jersey**


Oct. 30/Nov. 3: **Earthquakes**

Smith, Chapter 6

Nov. 6/10: **Floods**

Smith, Chapter 11

Nov. 13/17: **Wildfires**

Smith, Chap. 10

Nov. 20/24: **Drought**

Smith, Chapter 12.

THANKSGIVING RECESS
GRADES

*Attendance and active participation in class are expected.* Course grades will be based on a midterm exam (30% of final grade), a term paper (40%), and a final exam (30%). There is no provision for undertaking additional work to increase a grade. Makeup tests will not be given except in cases of documented emergencies.

ASSIGNMENTS

Each student will write a term paper on a hazard-related topic of their choosing and consistent with the focus of the course. Details will be posted separately on the Sakai web site. The term paper and any other written assignments must be submitted electronically, on time, to the instructor in the Assignments Box on the class Sakai site. Please make sure that your name is prominently affixed to each file. See Term Paper assignment for additional details.

CHEATING AND OTHER INFRACTIONS

University policies on ethical standards in relation to the preparation of written submissions and examinations will be strictly observed (see Rutgers University Policy on Academic Integrity). Among other things this means no cheating on examinations, assignments or attendance records. All assignments must be original (i.e. your own work and not submitted in another course). For additional policies see: Department of Geography, Policy on Classroom Etiquette (Sakai page).

INSTRUCTOR’S OFFICE HOURS

Dr. Mitchell is available for consultation at his office in the Department of Geography (Lucy Stone B-232, Livingston campus, Tel: 848-445-4103) from 2.00-3.00 p.m. on Mondays. Brief queries may be submitted via E-mail to jmitchel@rci.rutgers.edu.

*Tip for communicating electronically with the Instructor:* **ALWAYS** identify yourself and the course for which you are enrolled.