

**UNIVERSITY OF WISCONSIN,  
OSHKOSH**

*Events* (both are on reserve in Polk Library Reserve Desk). Each group of students should cooperatively search for appropriate reference materials; however, each student is responsible for the preparation of a specific portion of this report. If a group consists of 5 students, it is suggested that the work be apportioned as follows: (1) tornado and other windstorm hazards, (2) snow, blizzard and frost hazards, (3) flood hazards, (4) drought hazards and (5) geological hazards. Miscellaneous other hazards should be distributed amongst the persons considering the five major listed hazards. If a group consists of 6 members, it is suggested that the sixth person carefully examine the Wisconsin governmental response to hazards.

Students writing about Winnebago county could use a similar distribution of topics, but at a much more local scale. Alternatively, a group of students might prefer to organize their paper concerning "Natural Hazard Mitigation in Wisconsin". In this circumstance, the work might be apportioned as follows: (1) general overview of natural hazard vulnerability in Wisconsin; (2) historic natural disasters in Wisconsin and responses to them; (3) civil defense response to natural disasters in Wisconsin; (4) flood hazard and zoning regulations specific to Wisconsin; (5) Wisconsin's experience in community relocation to avoid hazard; and (6) Wisconsin's response to snow and drought hazards.

Each student's contribution to the research project should be distinctly identifiable and each student will be evaluated upon the quality of their contribution to the project. Your grade will not be influenced by the performance of the other members of your group. Each student's contribution should average approximately 2,000 words of text and should be accompanied by maps illustrating those areas vulnerable to the hazard(s) being discussed and tables indicating past hazard occurrences. Your paper must be well referenced, and you are strongly encouraged to consult a wide variety of sources, including, but not limited to, the *Hazard Analysis for the State of Wisconsin* prepared by the Wisconsin Department of Military Affairs. Students within each group are strongly urged to assist each other in finding appropriate references for their report. Although at times newspaper accounts may be helpful in providing background material, avoid writing a journalistic human interest story which merely relates the reaction of specific victims or witnesses to the hazard.

Research groups should form by the end of the second week of the semester and should prepare an outline and a tentative bibliography of potential references by March 7. Groups should schedule a meeting with their instructor during the first week of March to review their progress, potential references, and allocation of topics among the group members. Draft copies of the paper should be prepared by April 11 and submitted to all members of your group, such that your paper can be carefully edited to eliminate contradictory data, incorrect grammar, misspellings, or awkward construction. Your final, edited, typewritten report is due in class on Tuesday, May 2. Your course grade will be reduced by 1 percent for each calendar day that it is late.

Your research project counts 30 percent of your course grade. Papers will be evaluated based upon how thoroughly you cover your topic, how well the paper is written, and how well your paper is referenced. Remember that all quotes, statistics, and ideas which are not your own must be referenced. Any style of referencing which is described within Turabian's *Guide to Writers of Term Papers and Theses* is acceptable. Students are reminded that plagiarism is

considered an act of academic misconduct which is a violation of Chapter UWS 14 of the Wisconsin Administrative Code and will result in your failure in this course.

*Class Participation:* Students are expected to regularly contribute to class discussions concerning the text assignments and outside readings. Active participation also requires that the student regularly attend class and that all reading assignments are read in a timely fashion. Class participation counts 10 percent of your course grade.

*Tape Recording:* Students may make tape recordings of lectures *only* under the following conditions: (1) the recording will be used only by the student making the recording, another student within the class, or the student's tutor, (2) the recording will be erased within two weeks of the time the lecture was recorded; and (3) the recording is done in a manner which is not disruptive to the instructor or other students within the class. Any other use of the recordings is prohibited and will be considered a violation of university regulations.

*Office Hours:* Office hours are maintained during which you may seek assistance with the course material. Those hours are Tuesday and Thursday from 8:30 to 11:45 a.m. Other times may be arranged by appointment. My office is Room 221, Halsey Science. You are welcome to stop in whenever you feel the need.

## OUTSIDE READINGS

1. Cross, John A., 1988. "Hazard Maps in the Classroom," *Journal of Geography*, Volume 87, pp. 202-211.
2. Cross, John A., 1992. "Natural Hazards within the West Indies," *Journal of Geography*, Volume 91, pp. 190-199.
3. Cross, John A., 1992. "The Hurricane Hazard in the United States." Chapter 10 of *Natural and Technological Disasters: Causes, Effects and Preventative Measures*. (See Majumdar, et al.)
4. Cross, John A., 1994. "Agroclimatic Hazards and Dairy Farming in Wisconsin." *The Geographical Review*, Volume 84, No. 3, (July 1994), pp. 277-289.
5. Curtis, George D., 1992. "Tsunamis-Seismic Sea Waves". Chapter 9 of *Natural and Technological Disasters: Causes, Effects and Preventative Measures*. (See Majumdar, et al.)
6. Flavin, Christopher, 1994. "Storm Warnings: Climate Change Hits the Insurance Industry." *World Watch*. Volume 7, No. 6, (November/December 1994), pp. 10-20.
7. Hays, Walter W., 1992. "1990's: International Decade for Natural Disaster Reduction". Chapter 1 of *Natural and Technological Disasters: Causes, Effects and Preventative Measures*. (See Majumdar, et al.)

8. Kocin, Paul J., 1992. "Snowstorms and Blizzards". Chapter 16 of *Natural and Technological Disasters: Causes, Effects and Preventative Measures*. (See Majumdar, et al.)
9. Monmonier, Mark and George A. Schnell, 1992. "Natural Hazard Mapping: Status and Review". Chapter 34 of *Natural and Technological Disasters: Causes, Effects and Preventative Measures*. (See Majumdar, et al.)
10. Oshkosh, City of, 1987, "Floodplain Zoning Ordinance for the City of Oshkosh, Wisconsin."
11. Palm, Risa, 1990, "Introduction to the Study of Natural Hazards" in *Natural Hazards: An Integrative Framework for Research and Planning*. (Baltimore; Johns Hopkins University Press), pp. 1-17. GB5014 P35.
12. Slovic, Paul, 1987, "Perception of Risk," *Science* Volume 236, pp 280-285.
13. Wilhite, Donald A., 1992. "Drought: Its Physical and Social Dimensions." Chapter 18 of *Natural and Technological Disasters: Causes, Effects and Preventative Measures*. (See Majumdar, et al.)

Note: Most outside readings are on reserve in both the Halsey and Polk Resource Centers. Additional books have been placed on reserve in the Polk Resource Center. These include:

Alexander, David. 1993. *Natural Disasters*. New York: Chapman & Hall. GB5014.A4513.

Bryant, Edward A., 1991. *Natural Hazards*. New York: Cambridge University Press. GB5014.B79.

Bolt, B.A., W.I. Horn, G.A. MacDonald, and R.F. Scott, 1975. *Geological Hazards*. New York: Springer-Verlag. QE5013.G46.

Burton, Ian, Robert W. Kates, and Gilbert F. White, 1978. *The Environment as Hazard*. New York: Oxford University Press. (Note: 2<sup>nd</sup> edition due February, 1993.) GB5014.B87.

Hays, Walter, W., 1981. *Facing Geologic and Hydrologic Hazards: Earth-Science Considerations*. (U.S. Geological Survey Professional Paper 1240-B). Washington: Government Printing Office I 19.16:1240-B.

Hewitt, Kenneth and Ian Burton, 1971. *The Hazardousness of a Place: A Regional Ecology of Damaging Events*. Toronto: University of Toronto Press. GF85.H4.

Majumdar, Shyamal K., Gregory S. Forbes, E. Willard Miller, and Robert F. Schmelz (editors), 1992. *Natural and Technological Disasters: Causes, Effects and Preventative Measures*. Easton: Pennsylvania Academy of Science. GB5005.N37.

White, Gilbert F. (editor), 1974. *Natural Hazards: Local National Global*. New York: Oxford University Press. GB70.W45.

White, Gilbert F. and J. Eugene Haas, 1975. *Assessment of Research on Natural Hazards*. Cambridge: MIT Press. GB121.W4.

Whittow, John, 1980. *Disasters: The Anatomy of Environmental Hazards*. Athens: University of Georgia Press. GB5018.W48.

## **COURSE OBJECTIVES**

This senior-level course will utilize lectures, class discussions, demonstrations, and scenario modeling to accomplish the course objectives. These objectives are:

- 1) To review those atmospheric and geologic events which threaten human life and property, emphasizing the physical conditions which accentuate or ameliorate these threats and presenting scientific data concerning the spatial and temporal distribution of these events.
- 2) To demonstrate how human occupation and use of various lands creates hazards and that to understand and mitigate hazards both the physical environment and human behavior must be examined.
- 3) To provide the student with a broad base of planning tools which can be used to mitigate the hazards. These will include programs to educate the public and enhance public awareness, land use planning within hazard zones, structural adjustments, and evacuation procedures.
- 4) To introduce the student to the wide array of published materials and maps which can be used in planning for hazard mitigation and disaster planning.

## **COURSE REQUIREMENTS**

Course grades will be based upon student achievement on two exams, the preparation of a research paper, an article review, and class participation. Although adjustments might be made in the final grading scale, students who obtain 93% of the points possible are guaranteed an "A", 88% an "AB", 83% a "B", 78% a "CB", 73% a "C", 68% a "DC", and 63% a "D".

*Exams:* Two exams will be given, each counting 30 percent of the course grade. These exams will contain both objective and subjective questions, covering lectures, class discussions and the reading assignments.

Exam 1 covers all lectures, textbook and outside reading assignments and class discussions from January 31 through March 9.

Exam 2 covers all lectures, textbook and outside reading assignments and class discussions from March 24 through May 12.

*Make-up Exams:* It is expected that you will take exams at the assigned times. If illness should prevent you from taking an exam, you must notify your professor (phone 424-7112) or the department secretary (phone 424-4105) no later than the next day to explain your absence and schedule a make-up exam. Failure to promptly and adequately explain your absence will result in your receiving a grade of “0” on a missed exam.

*Research Project:* Small groups of students (5 or 6 students) will jointly prepare a report on “The Natural Hazards of Wisconsin” or “Natural Hazards of Winnebago County”. As a guide, students are encouraged to examine Cross’s “Natural Hazards within the West Indies” and Hewitt and Burton’s *The Hazardousness of a Place: A Regional Ecology of Damaging Events*.

NATURAL HAZARDS AND DISASTER PLANNING  
50-419  
Spring I and II, 1995

6:00 – 9:20 p.m. Tuesdays  
Halsey Science 303

Dr. John Cross  
Halsey Science 221  
424-7112

Texts: Smith, Keith, *Environmental Hazards: Assessing Risk and Reducing Disaster*. 1992.  
Burton, Kates, and White, *The Environment as Hazard* (2<sup>nd</sup> edition). 1993.  
Outside readings as listed on page 2.

**COURSE OUTLINE AND READING SCHEDULE**

<i>Class Meeting</i>	<i>Topic</i>	<i>Assignment *</i>
January 31	Introduction: Definition of Hazards	Smith, Chapter 1 Burton, Chapter 1; Palm (11)
February 7	Vulnerability to Hazards	Smith, Chapter 2 Burton, Chapter 2-3
February 14	Perception of Hazards	Smith, Chapter 3; Burton, Chapter 4; Slovic (12)
February 21	Hazard Adjustments: Loss Sharing	Smith, Chapter 4 Burton, Chapter 5, 8
February 28	Hazard Adjustments: Loss Reduction	Smith, Chapter 5; Burton, Chapter 6-7; Monomier (9), Cross (1)
March 7	Seismic Hazards	Smith, Chapter 6 Curtis (5)
March 21	Volcanic Hazards	Smith, Chapter 7
March 28	EXAM 1** Landslide and Avalanche Hazards	Smith, Chapter 8
April 4	Frost and Heat Hazards	Smith, Chapter 10 Kocin (8), Flevin (6), Cross (1)
April 11	Windstorm Hazards	Smith, Chapter 9 Cross (3)

April 18	Flood Hazards	Smith, Chapter 11 Oshkosh (10)
April 25	Drought Hazards	Smith, Chapter 12 Wilhite (13)
May 2	Technological Hazards Natural Hazards of Wisconsin	Hays (7) Smith, Chapters 13-14; Burton, Chapter 9
May 9	EXAM 2** Natural Hazards of Wisconsin (Continued)	

\* Assignments should be read before each class. You will be expected to contribute to class discussions concerning the readings. Topic schedules are approximate.

\*\* Exams 1 & 2 will be given at 6:00 p.m. and will be followed by lecture or discussion at 7:10 p.m.