

*University of North Texas
Department of Public Administration and Emergency Administration & Planning*

***Hazardous Materials Planning & Management
EADP 4000***



Swaroop Reddy, Ph.D.
Fall 1999

Thursday: 6:30 – 9:20 PM
Terrill Hall - 121

Office Hours:

Tuesday- 10:00 a.m.-12:30 p.m.

Wednesday- 10:00 a.m.-12:30 p.m.*

Wooten Hall, Room 360

*(Or call for appointments on other days)

Phone (940) 565-3786; Internet: sreddy@scs.cmm.unt.edu

Text: *Hazardous Materials Contingency Planning Course Student Manual. SM311, June 1990 (cited as student manual).*

Recommended Readings:

The Hot Zone, Richard Preston. An Anchor Book, Published by Doubleday, 1995.

The Cobra Event. Richard Preston. A Balantine Book. October 1998.

Course objective: The objective of this course is to provide emergency management specialists with a broad understanding of hazardous materials contingency planning and major environmental regulations associated with it. By the end of the course you should have a sound understanding of the planning process, SARA/Title III and the concepts of LEPC and CEM at the community level. We will also address a new threat - the nuclear, biological and chemical (NBC) terrorism (or weapons of mass destruction) faced by our nation and the planning measures to address the problem. In combination the course should help you in:

- Understanding hazardous materials contingency planning at the local level
- Developing an insight into the full spectrum of hazardous materials planning concerns.

Evaluation:

Mid-term	300 points
Final	200 points
Exercise Scenario Writing	100 points
Term Paper	300 points
<u>Class Participation</u>	<u>100 points</u>
Total	1000 points
A = 900 points	
B = 800 points	
C = 700 points	
D = 600 points	
F = Below 600 points	

Tests, term papers, and class participation

Tests: The mid-term and final exams will consist of multiple choice questions and short essays. It should be recognized that there is much more material in the reading assignments than is possible to cover, repeat and develop in class. Although tests tend to place somewhat more emphasis on topics that are covered in both texts and in class, the focus of the tests is on the core material from the reading. Class lectures and related assignments will be directly relevant to the student's understanding of the material and other aspects of their performance (participation in the class discussion), but the exams will go into depth on what you have been assigned to read.

Term Paper: *Your term paper topics and outlines (in the form of table of contents) should be submitted for approval no later than September 23, 1999. Your topics should be related to technological hazards. Papers should not exceed 6 pages in length, double-spaced and include a bibliography. Please use the *Public Administration Review* journal for style and format. I expect students to use different sources including journal articles and other related publications in developing the paper. **Term papers are due on November 11, 1999.** If you turn in your term paper late, you will lose 10 points a day.*

Exercise Scenario Writing: You will be asked to write an exercise scenario for a HazMat incident. Details of the assignment will be discussed in the class. *Your assignment is due on October 7, 1999.*

Class Participation: Class participation and regular attendance are allocated 100 points (10 percent of the total). Student involvement in class discussions is very important; therefore, each student is encouraged to complete all assignments on time and be prepared to discuss the reading assignments during class. This class provides an opportunity for the students to develop abilities in communicating with others about their ideas and approaches for dealing with hazards and disaster management problems. The potential of this opportunity is only fully realized if you make meaningful contributions to the course in class discussions and debate. In general, prepared and constructive participation in class is expected. Students who show a pattern of not being prepared will be graded down on class participation. **Additionally, students who miss more than three sessions without a legitimate reason will be graded F.**

The criteria that are used in evaluating process-oriented aspects of class participation include:

- Is the participant a good listener?
- Are the points made - or questions raised - relevant to the discussion?
- Are points linked to the comments of others, but not just a restatement of a point that has already been made?
- Is there a willingness to participate?
- Do comments show an understanding of concepts presented in class lectures or assigned reading materials?

The attached syllabus should not be viewed as a contract and may be altered by the instructor.

Tentative Class Schedule

Session I (September 2, 1999)

- Course overview
- Expectations
- Definition of disaster

- Natural vs. technological hazards
- Why plan for disasters?
- The Comprehensive Emergency Management Approach (CEM)

Session II (September 9, 1999)

- Understanding SARA Title III
- Community awareness and public responsibility
- Motivating and marketing the LEPC concept

Required reading:

Student manual: Module 1

Session III (September 16, 1999)

- Hazardous Materials Technical Base
- Hazards Analysis
- Capability Assessment
- The Impact of Population and Industrial growth on HAZMAT Planning
- Information Management

Required reading:

Student manual: Module 2

Session IV (September 23, 1999) - **Term paper topics and outlines due**

- Methods for Reviewing Plans and Procedures
- HAZMAT Contingency Planning
- Developing the Planning Document
- Computerized Assistance in Planning
- CAMEO

Required reading:

Student manual: Modules 2 and 3

Session V (September 30, 1999)

- Determination of the Appropriate Response Level
- Unified Incident Command System
- Coordination with plans of other organizations and agencies
- Using tools to help implement the local plan
- NRT-1 and NRT-1A

Required reading:

Student manual: Modules 3 and 4

Session VI (October 7, 1999) - **Exercise Scenario due**

- Guest Speaker/Field Trip

Session VII (October 14, 1999)

Mid-term exam

Session VIII (October 21, 1999)

- Risk communication

Required reading:

Student manual: Module 4

Session IX (October 28, 1999)

- Guest Speaker

Session X (November 4, 1999)

- Exercising the plan
- Reviewing the plan
- Basic information about preparedness for radiological hazards
- Federal Radiological Emergency Preparedness Plan (FRERP)
- The problem of aging nuclear reactors and siting nuclear repositories/waste sites

Session XI (November 11, 1999) – **Term papers due**

- Debriefing
- Updating and keeping your plan current
- Keeping LEPC momentum going
- Terrorism—Nuclear, Biological, and Chemical (NBC) and Weapons of Mass Destruction (WMD)

Required reading:

Student manual: Module 5

Session XII (November 18, 1999)

- Case studies of Bhopal, EXXON Valdez, and Soveso accidents

November 25, 1999 – Holiday! Happy Thanksgiving!

Session XIII (December 2, 1999)

- Case studies of Chernobyl, Three Mile Island and Ontario Hydro

Session XIV (December 9, 1999)

- Review

Session XV (December 16, 1999)

- **Final Exam**

Supplementary Readings

Bogard, William. Evaluating Chemical Hazards in the Aftermath of the Bhopal tragedy. *“International Journal of Mass Emergencies and Disasters”*, V.5, 1987, pp. 223-241.

Andrews, R.N.L. “Local Planners and Hazardous Materials.” *Journal of American Planning Association*, 53, 1987, pp. 3-5.

Bishop, John D. “The Moral Responsibility of Corporate Executives for Disasters.” *Journal of Business Ethics*, 10, May 1991, 377-383.

Isman, Warren. “Controlling Hazardous Materials Spills.” *Fire Engineering*, 131, October 1978, pp. 58- 60.

Kartez, Jack D. LEPC Roles in Toxic Hazards Reduction: Implementing Title III’s unwritten goals. College Station TX: Texas A&M University, Hazard Reduction & Recovery Center, 1992.

Lindell, Michael K., and M.J. Meier. “Effectiveness of Community Planning for Toxic Chemical Emergencies,” *Journal of the American Planning Association*, 60, 1994. pp. 222-234.

Lindell, Michael K., and Ronald Perry. “Evaluation Criteria for Emergency Response Plans in Radiological Transportation.” *Journal of Hazardous Materials*, 3, 1980, pp. 335-348.

Rogers, George, “The Timing of Emergency Decisions by Community Officials during Chemical Accidents.” *Journal of Hazardous Materials*, V, 37, 1994, pp. 353-373.

Scanlon, Joseph, and Angela Prawzick, “Toxic Spills in Courtney and Corner Brook: How Two Canadian Communities Handled Similar Chemical Emergencies”. Ottawa, Ont.: Emergency Preparedness, Canada, 1983.

- Tierney, Kathleen J. "A Primer for Preparedness for Acute Chemical Emergencies." Columbus, Ohio: Disaster Research Center, Ohio State University.
- Quarantelli, Enrico L. "Socio-Behavioral Responses to Chemical Hazards." Columbus: Ohio State University, Disaster Research Center, 1981.
- Bowonder, B., et al. "Avoiding Future Bhopals." *Environment*, Vol. 27, No. 7, 1985, pp. 31-37.
- Browning, Larry D. and Judy C. Shelter. "Communication in Crisis, Communication in Recovery: A Postmodern Commentary on the Exxon Valdez Disaster." *International Journal of Mass Emergencies and Disasters*, Vol. 10, No. 3, November 1992, pp 477-498.
- Srivastava, Paul. "Preventing Industrial Crises: the Challenge of Bhopal." *International Journal of Mass Emergencies and Disasters*. Vol. 5, 1987, pp. 199-221.
- Smith, Denis. "Beyond Contingency Planning: Towards a Model of Crisis Management." *Industrial Crisis Quarterly*, Vol. 5, 1991, pp. 189-207.
- Faupel, Charles E. and Conner Bailey, "Contingencies Affecting Emergency Preparedness for Hazardous Wastes," *International Journal of Mass Emergencies and Disasters*, Vol. 5, 1988, 265-284.
- Burkhart, Ford N. 1991. Journalists as Bureaucrats: Perceptions of "Social Responsibility" Media Roles in Local Emergency Planning." *International Journal of Mass Emergencies and Disasters* 7:33-56.
- Feldman, David L. 1993. "SARA Title III and Community Hazards Planning: The Case of the Chemical Stockpile Emergency Preparedness Program." *International Journal of Mass Emergencies and Disasters* 11:85-97.
- Gabor, T. 1981. Mutual Aid Systems in the United States for Chemical Emergencies. *Journal of Hazardous Materials* 4:343-356.
- Gray, Jane. 1981. "Characteristic Patterns of and Variations in Community Response to Acute Chemical Emergencies." *Journal of Hazardous Materials* 4:357-365.
- Hadden, Susan G. 1989b. "Providing Citizens with Information about Health Effects of Hazardous Chemicals." *Journal of Occupational Medicine* 31:528-534.
- Hadden, Susan G. 1991. "Public Perceptions of Hazardous Waste." *Risk Analysis* 11:47-57.

- Hancock, Kathleen, Mark Abkowitz, and Mark Lepofsky. 1993. "Assessing Hazardous Materials Emergency Response Capability: Methodological Development and Application." *Transportation Research Record*, 1383:67-76.
- Kartez, Jack D. and Michael K. Lindell. 1987. "Planning for Uncertainty: The Case of Local Disaster Planning." *Journal of American Planning Association*, 53:487-498.
- Sorensen, John H. 1987. "Evacuations Due to Off-Site Releases from Chemical Accidents: Experience from 1980 to 1984." *Journal of Hazardous Materials*, 14:247-257.
- Armstrong, J.S. "Social Irresponsibility in Management." *Journal of Business Research*, Vol., 1977, pp. 421-435.
- Baron, Jonathan, et al. "Attitudes Toward Managing Hazardous Waste: What should Be Cleaned up and Who should Pay for it?" *Risk Analysis*, V. 13, 1993, pp. 183-192.
- Bord, Richard J. and Robert E. O'Connor. "Risk Communication, knowledge and Attitudes: Explaining Reactions to a Technology, Perceived as Risky." *Risk Analysis*, V. 10, 1990, pp. 499-506.