

**STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK**



COURSE OUTLINE

EADM 430 – SIMULATED DISASTER TRAINING

Prepared By: Dr. Michael J. O'Connor Jr.

**SCHOOL OF BUSINSS AND LIBERAL ARTS
DEPARTMENT OF BUSINESS
MAY 2016**

- A. **TITLE:** Simulated Disaster Training
- B. **COURSE NUMBER:** EADM 430
- C. **CREDIT HOURS:** 3
- D. **WRITING INTENSIVE COURSE:** Yes
- E. **COURSE LENGTH:** 15 weeks
- F. **SEMESTER(S) OFFERED:** Fall
- G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:** 3 lecture hours per week
- H. **CATALOG DESCRIPTION:** This course is designed for students to acquire the knowledge and skills necessary to develop, conduct and evaluate activities and exercises. Students will assess and evaluate an exercise in actual emergency and/or disaster situations.
- I. **PRE-REQUISITES/CO-REQUISITES:** (List courses or indicate “none”)
 a. Pre-requisites/Co-requisites: Management Communications (BSAD 340) and Incident Command: System Coordination and Assessment (EADM 400) or permission of instructor.
- J. **GOALS (STUDENT LEARNING OUTCOMES):**
 By the end of this course, the student will be able to:

<u>Course Objective</u>	<u>Institutional SLO</u>
Explain the concept “geographic information system” (GIS) and its elements by clarifying how a GIS differs from an “information system., and using the elements of a “system” to illustrate the components of a GIS.	1. Crit. Thinking
Define warning systems and explain how they fit into the emergency management process.	1. Crit. Thinking
Discuss the use of various integrated decision support systems such as CAMEO, ALOHA, HAZUS-MH, etc.	1. Crit. Thinking
Understand the development of assessments of risk for flood hazards in the United States and the National Flood Plain Management Program.	1. Crit. Thinking
Demonstrate the ability to direct, coordinate, and control emergency activities using the Incident Command System (ICS).	1. Prof. Competence 2. Inter-Intrapersonal Skills
Demonstrate the ability to alert, mobilize, activate, track and demobilize personnel, equipment and other resources for emergency response and maintain operations until the situation is brought under control.	1. Prof. Competence 2. Inter-Intrapersonal Skills

Apply team leadership skills in conflict resolution in an emergency and/or disaster scenario.	1. Prof. Competence 2. Inter-Intrapersonal Skills
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K. TEXTS:

FEMA. (2005). *Hazard Mapping and Modeling*. Washington, D.C.: U.S. Government Publishing.

FEMA. (1999). *Technology in Emergency Management*. Washington, D.C.: U.S. Government Publishing.

FEMA. *Orientation to Community Disaster Exercises (G-120)*. Washington, D.C.: U.S. Government Publishing.

FEMA. *Exercise Design (G-139)*. Washington, D.C.: U.S. Government Publishing.

L. REFERENCES: None

M. EQUIPMENT: Internet access.

N. GRADING METHOD: A-F

O. MEASUREMENT CRITERIA/METHODS:

- Exams
- Quizzes
- Discussion Boards
- Papers
- Participation

P. DETAILED COURSE OUTLINE:

I. TECHNOLOGY AS A TOOL

- A. Examples of the use of technology in emergency management.
- B. How systems theory applies to emergency management and the use of technology.
- C. Role of technology infrastructure in emergency management.
- D. Examine the contention that technology is a “quick fix” to solve problems.
- E. Explain the advantages to emergency management of an open system such as the Internet, and its limitation and problems.

II. NETWORKS AND COMMUNICATIONS

- A. Introduction to communication and network technologies and their applications to emergency management.
- B. Comparison between wireline and wireless networks.
- C. Emerging communication technologies.

III. SPATIAL ANALYSIS

- A. Nature of geographic information systems (GIS) and their application to vulnerability analysis. Elements of a GIS.
- B. Uses of GIS in emergency management.
- IV. DIRECT AND REMOTE SENSING
 - A. Demonstration of the types of direct sensing data available for hazards analysis and emergency response.
 - B. Sources of natural hazards data including river/stream gages, weather stations, and National Weather Service forecasts.
 - C. Chemical air monitoring systems and data sources.
 - D. Overview of the types of remote sensing data available for hazards analysis and emergency response.
 - E. Sources of natural hazards data including satellite images.
- V. WARNING SYSTEMS
 - A. Community disaster notification.
 - B. Community alert systems that have been implemented at the national, state, and local level. Emergency broadcast system and telephone alert systems.
 - C. Overview of the National Weather Service NOAA Weather Radio Network and FEMA's Emergency Alert System.
 - D. Private warning systems.
- VI. HAZARD ANALYSIS AND MODELING
 - A. Introduction to modeling and its application to emergency management.
 - B. Elements of hazard models and the major issues present when using hazard models.
 - C. Uses of modeling programs in emergency response.
 - D. Limitations of modeling programs.
- VII. HAZARD MAPPING AND MODELING
 - A. Compare and contrast varying definitions for natural hazards with key terms and basic concepts such as natural disasters, risk, vulnerability, resilience, and adjustment.
 - B. Model of Hazard Management Mapping.
 - C. Timeline of the effects of legislation on the historic evolution of hazard mapping and modeling will be reviewed.
- VIII. TECHNOLOGICAL DEVELOPMENT IN HAZARD MAPPING AND MODELING
 - A. Development of computer technology and its influence on hazard mapping and modeling.
 - B. Historical review of the development of Geographic Information Systems (GIS).
 - C. National Flood Insurance Program.
 - D. Models of natural processes such as SLOSH.
 - E. Geographic Information Systems (GIS).
 - F. GPS (Global Positioning Systems).
 - G. Tabletop Exercise Manual Development.
- IX. MODELING AIR DISPERSION OF CHEMICAL HAZARDS
 - A. Introduction to the nature and extent of the air dispersion of hazardous chemicals and their impacts.
 - B. ALOHA software and how it can be used to characterize the impacts from the air dispersion of chemical hazards.
- X. GIS IN HAZARD MAPPING AND MODELING
 - A. Overview of what they know about GIS software.

- B. GIS capabilities.
- C. Tabletop Exercise Control Plan/Manual.
- XI. RISK COMMUNICATIONS
 - A. Risk communication definitions of hazard, risk, vulnerability, perception, outrage, visualization, uncertainty and risk assessment.
 - B. Compare visualization vs. static maps.
 - C. Case study of hazard and risk mapping of a volcano.
 - D. Some of the misuses of maps in risk communication
 - E. Tabletop Exercise Evaluator Plan/Manual.
- XII. MODELING FLOOD HAZARDS
 - A. Introduction to the nature and extent of flooding as a natural hazard and its social, economic and environmental impacts.
 - B. Modeling of flood hazards.
 - C. Role of flood modeling in the National Flood Insurance Program.
 - D. Flood Insurance Study (FIS).
 - E. Flood Insurance Rate Map (FIRM).
 - F. HAZUS-MH Flood software and how it can be used to characterize the social, economic and environmental impacts from flood hazards.
 - G. Tabletop Exercise Play Handbook.
- XIII. DECISION SUPPORT SYSTEMS AND OPERATIONS PROBLEMS
 - A. Overview of emergency management information systems.
 - B. Examination of several information systems.
- XIV. OPERATIONAL ISSUES OF TECHNOLOGY IN EMERGENCY MANAGEMENT
 - A. Problems that may be encountered by local and state agencies in using technology applications in emergency management.
 - B. Strategies to prevent and minimize the adverse impact of problems.
 - C. Recommendations for enhancing the use of technology by state and local emergency management will be provided.
- XV. EMERGING TECHNOLOGIES
 - A. New developments including communications, information access, training, modeling, and artificial intelligence.
 - B. Software innovations.
 - C. Security of technology and information.

Q. LABORATORY OUTLINE: Not applicable.