

## **Illinois IDEA HS Course Outline**

**College/Division:** Northern Illinois University, Department of Engineering Technology

**Course Title:** Foundations of Homeland Security & Disaster Preparedness

**Course Designator/Number:** UNIV 310/510

**Credit Hours:** 3

**Instructor/Originator Name:** Dennis Cesarotti

**Catalog Description:** The Foundations of Homeland Security course provides the basics of disaster preparedness. The course takes the “All Hazards” approach. It is a study of natural disasters, such as, earthquakes, hurricanes and tornados, as well as “man-made” incidents such as acts of terrorism, chemical spills or release, fire, and explosions. The course will focus on potential hazards for each type of incident, severity, risk of occurrence, methods of mitigation (risk reduction), and preparedness, response, and recovery procedures. The knowledge base will be used as a foundation to develop written Emergency Action Plans.

**Prerequisites:** None

**Restrictions/Suggestions:** This course has been developed for online delivery. The presentations have been designed to be interesting, graphic, and interactive. Unfortunately, the presentations are more complex and substantial in size. Your participation in this course will be less frustrating if your computer has:

- Windows operating system
- Pentium processor (the faster the better)
- 10 meg of free memory
- High speed modem (T1 line, Video modem, DSL, etc)
- Latest version of PowerPoint, Flash, and Adobe Reader

If your download times are excessively long, your system locks up or the animations do not appear, it might be your system. All university computers can be used, as well those found in any other computer lab or public library

Knowledge of Blackboard will also be helpful. If you have any questions or problems, please log onto [www.niu.edu](http://www.niu.edu). On the Home Page, in the upper right-hand corner, select A-Z index, then select B, click on Blackboard. Before you log in, on the left side of the page is a box with “Helpful Links”. Select “Student Help”. Hopefully the site will answer all your questions. If not, contact me or ITS directly.

**Rationale:** Everyone could benefit from receiving advanced schooling in disaster preparedness, emergency management, and homeland security. Both the undergraduate and graduate foundation courses provide an introduction to the field of homeland security, disaster preparedness, and emergency management. Students discuss the following types of disasters in detail: Naturally occurring: earthquakes, hurricanes, tornados, floods; Human-made: acts of terrorism, violence, chemical releases, business interruption, power outages, and transportation issues.

**Intended Audience:** Anyone interested in emergency management/preparedness and homeland security issues.

### **Expected Student Outcomes**

- The ability to recognize hazards in the industrial, commercial, governmental, and residential sectors relative to Natural and Man Made Disasters.
- The ability to assess the risk of disaster by determining the potential severity and probability of occurrence.
- The ability to evaluate pre, during, and post disaster issues.
- The ability to plan, train, and implement countermeasures to minimize the effects of a disaster, and/or remediate the aftermath.
- Identify and discuss coordination between Federal, State, and Local Agencies and organizations involved in the response and relief.
- Be knowledgeable in applicable Federal, State, and Local regulations and standards.
- Be able to write an effective Emergency Action Plan.

**Text:** None. The instructor will provide handouts, written materials, and instruction in Blackboard.

### **Topical/Subject Matter Outline/Course Content:**

The course consists of two basic approaches, one for natural disasters, and the other for man-made incidents. Natural disasters will be discussed first due to commonality and most students have a basic knowledge of the hazards. The natural disasters will be discussed with the following format:

- Define: Definition of the disaster and the “causation/format” is discussed
- Identify: Identification of the hazards associated with the disaster
- Assess: Assignment of a level of risk to a specific disaster
- Mitigate: Options that can be implemented to reduce the risk
- Respond: Proper response procedures including the potential for secondary hazards
- Recover: Procedures that can be used during the recovery process and the resumption of business as usual

This format will be used for the discussions on:

- Flood
- Hurricane

- Earthquake
- Tsunami
- Tornado
- Landslide/mudflow
- Wildfire

During the discussions on natural disasters, the concept of risk assessment will be introduced. Risk will be discussed as a function of likelihood of occurrence (based on location) and potential severity. As a lead in to man-made disasters, we will be discussing a brief History of Terrorism affecting the United States. Specifically:

- USS Cole
- World Trade Center 1
- World Trade Center 2
- Oklahoma City Bombing
- Anthrax letters

The concept of the Critical Infrastructure will be introduced. The Critical Infrastructure is the essential industries, services, and icons that play an integral part in the “American way of life.”

Man-made Incidents will have a slightly different format. The format consists of:

- Define: Definition of the specific incidents and responsible parties
- Identify/WMD: Potential targets for a terrorist attack and the weapons that have been used or could be used against American targets and the hazards they create. Specifically:
  - Chemical agents
  - Biological agents
  - Radioactive materials
  - Nuclear incidents
  - Explosions
 Together, these weapons are referred to as CBRNE.
- Assess: Techniques to assess the risk of a terrorist attack with emphasis on the critical infrastructure of the United States, such as the national communication system, power grid, etc.
- Mitigate: Options to “harden” targets to deter an attack or make them less vulnerable to an attack.
- Response: Procedures to respond to specific terrorist attacks, including the methods used to detect the attack, personal protective equipment to be worn, and potential healthcare issues such as treatment.
- Recovery: Discussion of recovery issues and procedures that include decontamination and reconstruction.

During the discussions, the role of the Federal, State, and Local Governments will be discussed. In addition, disaster- oriented organizations and agencies and the role of the private sector will be discussed.

There will be a discussion on the procedures used to respond to the release of a CBRNE agent. The National Incident Management System and the concept of incident command will be introduced as well as basic response procedures. These presentations will only provide an overview. Additional courses are offered on this complex topic.

**Course Activities:** Complete on-line assignments

**Evaluation/Assessment:**

For classes TECH 432 or **UNIV 310**, the participant's performance evaluation will be based on:

- Two examinations
  - Midterm
  - Final
- Course participation (including blogging)
- Assigned homework (generally after each topic)
- Final letter grade will reflect the percent of the point total achieved by the following weighting system (in percent)
  - Midterm 35
  - Final 35
  - Course participation 15
  - Assigned homework 15
- Final grade is based on a curve from the total points. However, fifty percent of the point total is necessary to get a "C" or better. As a caution, the average score will NOT result in a final grade of A.

For classes **UNIV 510** the participant's performance evaluation will be based on:

- Two examinations
  - Midterm
  - Final
- Course participation (including blogging)
- Assigned homework (generally after each topic)
- Assigned Assessment and Program Development
- Final letter grade will reflect the percent of the point total achieved by the following weighting system (in percent)
  - Midterm 25
  - Final 30
  - Course participation 20
  - Emergency Assessment 15
  - Assigned homework 10
- Final grade is based on a curve from the total points. However, fifty percent of the point total is necessary to get a "C" or better. As a caution, the average score will NOT result in a final grade of A.

## **Bibliography/References:**

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Alibek K & Handelman S, (1999). Biohazard: The chilling true story of the largest covert biological weapons program in the world – told from inside by the man who ran it. Dell/Random House, NY, NY.

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Miller J, Engelberg & Broad, W (2001) Germ: Biological Weapons and America's secret war. Simon & Shuster, NY, NY. ISBN 0-684-87158-0.

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