Eastern Illinois University  
New Course Proposal  
ESC/GEG 3020 Natural Disasters: Causes and Effects

1. Catalog Description

a) ESC/GEG 3020  
b) Natural Disasters: Causes and Effects  
c) (3-0-3)  
d) Fall  
e) Natural Disaster  
f) An overview of hazardous environments, natural or partly induced by human activity. Emphasis on understanding the physical processes and social systems that interact to produce disasters. Considers spatial and temporal distribution of hazards with reference to human populations. Provides options for assessing risk, disaster preparation and loss reduction. WI

g) No prerequisites  
h) Fall 2006

2. Student Learning Objectives and Evaluation

a) Objectives - students enrolled in this course will be able to:
   • evaluate the physical processes responsible for creating natural hazards  
   • assess the risk of events and the scale of disasters  
   • analyze procedures for adjusting to hazards and minimizing losses  
   • enhance their abilities to use published and web-based data, as well as maps, aerial photography and remote-sensed images for decision making

b) Evaluation of student achievement:
   • Mid-term examination  30%  
   • Term Paper  15%  
   • Journal of current disasters  10%  
   • Problem sets  15%  
   • Final examination  30%

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<thead>
<tr>
<th>Learning Objectives</th>
<th>30% Mid-term exam</th>
<th>15% Term paper</th>
<th>10% Journal of current disasters</th>
<th>15% Problem sets</th>
<th>30% Final Exam</th>
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<td>Evaluate physical processes responsible for creating natural hazards.</td>
<td>X</td>
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<td>Assess the risk of events and the scale of disasters.</td>
<td>X</td>
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<td>Analyze procedures for adjusting to hazards and minimizing losses.</td>
<td>X</td>
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<td>Enhance their abilities to use various data sources, maps and aerial photographs for decision making</td>
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c) Not technology delivered  
d) Not numbered 4750-4999  
e) Writing intensive: written portions of the student's achievement in the course, such as essay and short answer portions of examinations (mid-term of 30% and
final examination of 30%), term paper (15%), problem sets (15%) and journal (10%) comprise more than 35% of the total grade. All of these evaluation measures will be written. Instructor feedback on the term paper and a chance for student improvement will be part of the 15% term paper grade.

3. Outline of the Course

a) The course will meet 45 times during the semester (3 periods per week)

The Nature of Hazards and Disasters

Week 1  Introduction to hazards in the environment
Week 2  Perception, risk assessment, and public response to hazards
Week 3  Adjustment to hazards, loss sharing and loss reduction
Week 4  Event modification and vulnerability modification

Lithospheric Hazards

Week 5  Seismic hazards: earthquakes & volcanoes**
Week 6  Mass movement**

Atmospheric Hazards

Week 7  Temperature extremes**
Week 8  Severe storms**

Mid-term Exam

Hydrospheric Hazards

Week 9  Floods**
Week 10  Tsunamis and coastal erosion**

Biospheric Hazards

Week 11  Wildfires**
Week 12  Disease and exotic species introduction**
Week 13  Terrorism**
Week 14  Technological hazards**
Week 15  Summary and future prospects for hazard reduction and disaster mitigation

Final Exam

** For each hazard type, students will identify the location and extent of the affected areas by using maps, aerial photographs, or remotely-sensed images; understand the
physical processes and materials responsible for the hazard; assess the risks involved; 
determine historic and current adjustments to hazards and disasters (acceptance, loss-
sharing, loss reduction); and evaluate the possibilities of event modification and 
vulnerability modification to prevent disasters.

b) Not technology delivered

4. Rationale

a) Purpose and need: This course is an addition to the Environmental 
Studies Concentration in the Geography BS Major curriculum. Because of 
global population increases, people often move into areas with higher 
environmental risks. This course will raise awareness about vulnerability 
to hazards and provide strategies for mitigation of disasters. Upon successful completion of the course, students will have the ability to understand and evaluate the location, physical processes and materials involved in natural hazards, assess the risk of events and the scale of disasters, and analyze procedures for adjusting to hazards and minimizing losses.

b) Justification for the level of the course: The course has no prerequisites. However, by the time students in the Geography major consider taking courses in the Environmental Studies Concentration they will have taken core courses that deal with some of the background material. Thus, we expect that students enrolled in the Natural Disasters course have had some exposure to the principles of the discipline and have attained the equivalent of a junior level of academic maturity.

c) Similarity to existing courses: The material does not substantially duplicate material in existing courses. A main objective of the course is risk recognition, and procedures to minimize loss from extreme disastrous events or chronic environmental hazards.

d) Impact on programs: This course will be an approved elective in the Environmental Studies Concentration and elective in the other concentrations of the Geography BS Major.

5. Implementation

a) Faculty members to whom the course may be assigned: Initially the course will be assigned to Dr. Belayet Khan or Dr. Vincent Gutowski. Other qualified faculty may be assigned to teach the course in the future.

b) No additional cost will be incurred by students.


6. Community College Transfer

A community college course will not be judged equivalent to this course.

7. Date approved by the Department ___15 November 2005___

8. Date approved by the COSCC___9 December 2005____

9. Date approved by the CAA ___19 January 2006___