GENERAL STUDIES PROGRAM COURSE PROPOSAL COVER FORM

Courses submitted to the GSC between 2/1 and 4/30 if approved, will be effective the following Spring.

Courses submitted between 5/1 and 1/31 if approved, will be effective the following Fall.

(SUBMISSION VIA ADOBE.PDF FILES IS PREFERRED)

DATE: July 19, 2010

1. ACADEMIC UNIT: Division of Mathematical and Natural Science

2. COURSE PROPOSED: LSC 394 Environmental Disasters 3
   (prefix) (number) (title) (semester hours)

3. CONTACT PERSON: Name: Todd Sandrin Phone: 602-543-6934
   Mail Code: 2352 E-Mail: Todd_Sandrin@asu.edu

4. ELIGIBILITY: New courses must be approved by the Tempe Campus Curriculum Subcommittee and must have a regular course number. For the rules governing approval of omnibus courses, contact the General Studies Program Office at 965-0739.

5. AREA(S) PROPOSED COURSE WILL SERVE. A single course may be proposed for more than one core or awareness area. A course may satisfy a core area requirement and more than one awareness area requirements concurrently, but may not satisfy requirements in two core areas simultaneously, even if approved for those areas. With departmental consent, an approved General Studies course may be counted toward both the General Studies requirement and the major program of study. (Please submit one designation per proposal)

   Core Areas
   Literacy and Critical Inquiry – L
   Mathematical Studies – MA CS
   Humanities, Fine Arts and Design – HU
   Social and Behavioral Sciences – SB
   Natural Sciences – SQ SG

   Awareness Areas
   Global Awareness – G
   Historical Awareness – H
   Cultural Diversity in the United States – C

6. DOCUMENTATION REQUIRED.
   (1) Course Description
   (2) Course Syllabus
   (3) Criteria Checklist for the area
   (4) Table of Contents from the textbook used, if available

7. In the space provided below (or on a separate sheet), please also provide a description of how the course meets the specific criteria in the area for which the course is being proposed.

   Attached

   CROSS-LISTED COURSES: X No □ Yes; Please identify courses: ________________________________

   Is this an unspecialized course?: X No □ Yes; Is it governed by a common syllabus? ______________

   Roger L Berger
   Chair/Director (Print or Type)
   Date: 7/20/10

   Roger L Berger
   Chair/Director (Signature)

Rev. 1/94, 4/95, 7/98, 4/00, 1/02, 10/08
Rationale and Objectives

Human organizations and relationships have evolved from being family and village centered to modern global interdependence. The greatest challenge in the nuclear age is developing and maintaining a global perspective which fosters international cooperation. While the modern world is comprised of politically independent states, people must transcend nationalism and recognize the significant interdependence among peoples of the world. The exposure of students to different cultural systems provides the background of thought necessary to developing a global perspective.

Cultural learning is present in many disciplines. Exposure to perspectives on art, business, engineering, music, and the natural and social sciences that lead to an understanding of the contemporary world supports the view that intercultural interaction has become a daily necessity. The complexity of American society forces people to balance regional and national goals with global concerns. Many of the most serious problems are world issues and require solutions which exhibit mutuality and reciprocity. No longer are hunger, ecology, health care delivery, language planning, information exchanges, economic and social developments, law, technology transfer, philosophy, and the arts solely national concerns; they affect all the people of the world. Survival may be dependent on the ability to generate global solutions to some of the most pressing problems.

The word university, from universitas, implies that knowledge comes from many sources and is not restricted to local, regional, or national perspectives. The Global Awareness Area recognizes the need for an understanding of the values, elements, and social processes of cultures other than the culture of the United States. Learning which recognizes the nature of others cultures and the relationship of America's cultural system to generic human goals and welfare will help create the multicultural and global perspective necessary for effective interaction in the human community.

Courses which meet the requirement in global awareness are of one or more of the following types: (1) in-depth area studies which are concerned with an examination of culture-specific elements of a region of the world, country, or culture group, (2) the study of contemporary non-English language courses that have a significant cultural component, (3) comparative cultural studies with an emphasis on non-U.S. areas, and (4) in-depth studies of non-U.S. centered cultural interrelationships of global scope such as the global interdependence produced by problems of world ecology, multinational corporations, migration, and the threat of nuclear war.
Proposer: Please complete the following section and attach appropriate documentation.

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>Identify Documentation Submitted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>LSC394 Course Documentation address serious hazards affecting people, animals, and the environment in general, that have occurred around the planet in recent history. These hazards are from natural and man-made events and solutions are universal.</td>
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</tbody>
</table>

1. Studies **must** be composed of subject matter that addresses or leads to an understanding of the contemporary world outside the U.S.

2. Course must be **one or more** of following types (check all which may apply):
   a. In-depth area studies which are concerned with an examination of culture-specific elements of a region, country or culture group. The area or culture studied must be non-U.S. and the study must contribute to an understanding of the contemporary world.
   b. Contemporary non-English language courses that have a significant cultural component.
   c. Comparative cultural studies in which most, i.e., more than half, of the material is devoted to non-U.S. areas.
   d. In-depth studies of non-U.S. centered cultural interrelationships of global scope, such as the global interdependence produced by problems of world ecology, multinational corporations, migration, and the threat of nuclear war. Most, i.e., more than half, of the material must be devoted to non-U.S.

The Syllabus, p2 of Course Docs, lists modules that describe the various types of hazards that have, do, and will affect the planet globally. It spells out that we will discuss potential solutions as well as document historical disasters.
Explain in detail which student activities correspond to the specific designation criteria. Please use the following organizer to explain how the criteria are being met.

<table>
<thead>
<tr>
<th>Criteria (from checksheet)</th>
<th>How course meets spirit (contextualize specific examples in next column)</th>
<th>Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject matter outside US.</td>
<td>Many disasters have occurred around the globe and many are on-going. They include chemical spills, deforestation, and mining as long-term hazards and sudden events that have proven catastrophic, such as the loss of integrity of nuclear power plants and chemical spills.</td>
<td>The syllabus identifies hazards that have occurred on land (Module 2), on water (Module 3), and in the atmosphere (Module 4). Some of these hazards are truly global, such as the potential for global warming and subsequent loss of ice caps which will submerge many low lying islands and continental communities.</td>
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<tr>
<td>Non-US disasters.</td>
<td>Many specific disasters are identified in countries around the globe and some hazards are universal. Solutions are also global, such as the Montreal Protocol to protect the ozone layer.</td>
<td>Nuclear power plant in Chernobyl in the Ukraine, chemical explosion in Bhopal, India, mining in Bulgaria, tsunami from Banda Aceh, Indonesia, loss of tropical rain forests from South America to the Philippines (mainly Module 2), dead zones in nurseries for aquatic life, melting ice caps (mainly Module 3).</td>
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<tr>
<td>US disasters</td>
<td>Land, sea, and air examples are used as models for universal effects on populated communities. Students will appreciate that environmental concerns are universal as are the causes. Solutions may take years or centuries to recover</td>
<td>(Module 2) Love Canal and Times beach are examples of environmental hazards due to ignorance or carelessness. Natural events include devastating fires with subsequent hazards that are most clearly documented with local events. At the completion of this course students will be able to: Recognize sources of chemical</td>
</tr>
<tr>
<td>from some of these disasters and that they are cultural, political as well as economic.</td>
<td>hazards. Understand how chemical hazards can spread. Understand what methods have been used to clean-up chemical hazards. Analyze the benefit to risk ratio for chemical hazard production. Recognize on-going efforts to mitigate current pollution situations.</td>
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Course Information

LSC394: Environmental Disasters
Credit hours: 3

Instructor Information

Instructor: Dr. G. Douglass Dixon,
Division of Mathematical and Natural Sciences, Arizona State University at the West Campus.
PO Box 37100, Phoenix, AZ 85069
Mail stop: CLCC217.

Course Catalog Description

The purpose of the course is to explore the effects of wandering chemicals spread accidently or purposely upon the global environment and upon personal health. It will cover insults to land, air and waters, globally and nationally, which will also include local situations. Additionally, we will briefly explore chemical and biological hazards deliberately aimed at the continental US. The course will finish with an exploration of how different cultures view the manner in which industry and commerce mitigate environmental hazards during their activities life cycles.

Course Overview

During the course, we will explore hazardous situations that have been identified nationally and globally, and students will provide opinions and insights into why they occurred, how they can be remediated, and how similar future events could be prevented.

Biography

G. Douglass Dixon, Fellow Royal Chemical Society (UK), BSc (special honors), Chemistry and PhD, Chemistry, Durham University, England, has many years experience in research for medical, environmental, aerospace, and military fields. He has 45 scientific publications and over 100 patents issued internationally.

Dr. Dixon is an ASU adjunct professor having taught Polymer Chemistry in the Chemistry Dept. and Engineering Design of Materials in the School of Materials at the Tempe Campus. Currently, he is teaching Chemistry at the West Campus in the Division of Mathematics and Natural Science. He has been honored twice for teaching excellence by the ASU student organization Apple Polishers.

In 1969, he was co-founder and Executive VP for a citizen’s environmental group that rewrote the air pollution code for Allegheny County, PA. This became the model for the State of Pennsylvania and then, nationally, for the Nixon White House EQA (now the EPA).

Prerequisites

CHM101 Introduction to Chemistry, or a similar science, is the minimum requirement. Internet computing skills are essential.

Course Textbook and Materials (subject to change).

The material considered will be drawn from the following books:
Syllabus and Schedule

Module 1. (Week of Jan 17, 2011) Introduce concepts and explain student roles and expectations and how they will be graded. Make sure each student has all the necessary tools for internet research, and is able to communicate with the instructor and with each other. Each student to provide a personal statement covering expectations; what are your goals, why are you taking this course...

If time permits, we will explore many of the following hazards: why they occurred, how they can be mitigated, and what can be done to prevent them again. Students will provide short essays on several of these topics.

Module 2. (Week of Jan 24) Describe major environmental land hazards.
Natural events like Tunguska, Katrina, volcanoes, pine bark beetles.
Man-made events like Bopal and Chernobyl, deforestation of tropical forests, Agent Orange, Love Canal, and Times Beach. Population growth creating heat islands, Superfund sites, land fills.
Forest fires, mud slides, gypsy moth, alien vegetation (Kudzu, displacement of natives).
Power plants: How does energy development affect the environment.

Module 3. (Week of Feb 7) Describe major environmental water hazards.
Global warming: rising sea levels and effects on glaciers.
Sea dead-zones from agricultural run-off, oil spills - BP Gulf blow-out, insecticides and herbicides poisoning pelicans.
Brackish water: loss of wetlands and delta and effect on fish hatcheries, mine runoff, strip mining sedimentation.
Drinking water: lakes, rivers, eutrification, residential supplies.

Module 4. (Week of Feb 21) Explore sources of air pollution.
Global warming, ozone layer ‘hole’, jet planes, volcanoes Krakatoa & Eyjafjallajokull, spread of Sahara dust.
FEMA trailers
Automobiles & vegetation/ pollen, mold.
Acid rain.

Module 5. (Week of Mar 7) Poisons which are readily available. (Do not include naturally occurring pandemics).
Pharmacology & Biologicals: Tylenol poisoning, autism, getting ‘high’- paraquat, endocrine disrupters.
Medical testing and treatments (radiation and chemical).
The role of Congress in prevention, public health and The Desirability Quotient.

Module 6. (Week of Mar 28) Terroristic scenarios.
Identify current potential chemical or biological threats to the Homeland (not explosives, but ‘dirty bomb’ counts). How widespread could they be? Remember, both attacks on the World Trade Center were extremely local.
Anthrax mailings.
Smallpox deaths. Agent Orange, chlorine gas in WW1.
What potential threat by an outside agent could rival deaths by automobiles and guns?
What other future threat can be imagined? What is the greatest current threat to Maricopa County?
Read ‘Dark Knight’ and comment. Movie “Blindness” on how survivors may be treated.
After a spill, or attack, what do you do with the clean-up materials?
Expert authorities will present their views of these situations.

Module 7. (Week of Apr 11) Industrial Life Cycle Mitigation
Explore how major industrial and commercial organizations attempt to be ‘green’ by considering the complete lifecycle of their products, from birth to death. Examples will include such diverse organizations as Nike and the computer industry.

Review (Week of Apr 25) Review the course work and reiterate expectations.
Projects preview (Week of May 2)
Final project (Week of May 9) Presentations of group projects.

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Grading system and Grading Scale

Weekly quizzes, 15% (auto-grade)
Chapter HW’s or Group essays, 30% (Use Google docs, submit via Safe Assignment)
Discussion groups for class, 25% (based on level of participation)
Group Project, 20% for overall quality + 10% for individual contribution. (Instructor judgment)

Assignment of letter grades is based on a percentage of points earned. The letter grade will correspond with the following percentages achieved. All course requirements must be completed before a grade is assigned.

A  100-90
B  89 - 80
C  79 - 70
D  69 - 50
E  49 and below

Learning Objectives
At the completion of this course students will be able to:
  Recognize sources of chemical hazards.
  Understand how chemical hazards can spread.
  Understand what methods have been used to clean-up chemical hazards.
  Analyze the benefit to risk ratio for chemical hazard production.
  Recognize on-going efforts to mitigate current pollution situations.

Syllabus Disclaimer
The instructor views the course syllabus as an educational contract between the instructor and students. Every effort will be made to avoid changing the course schedule but the possibility exists that unforeseen events will make syllabus changes necessary. The instructor reserves the right to make changes to the syllabus as deemed necessary. Students will be notified in a timely manner of any syllabus changes via email or in the course site Announcements. Please remember to check your ASU email and the course site Announcements often.

Course Requirements
There will be weekly classroom sessions as well as computer studies. Most assignments and many course interactions will utilize internet technologies. This course requires a working knowledge of routine computer skills such as sending email, uploading and downloading files, and maneuvering through a web site. Links will be provided, if needed, for software downloads to open posted files (for example Adobe Acrobat Reader and Google Docs). In addition, students in this course are expected to have a working knowledge of the Blackboard Course Management System (how to add files, external links, assignments, quizzes, and how to use the discussion board, etc).

Computer Requirements
This course requires that you have access to a computer that can access the internet. You will need to have access to, and be able to use, the following software packages:
  A web browser (such as Internet Explorer or Mozilla Firefox for Microsoft operating systems) plus:
    • A web search engine such as MS BING or Google.
    • Adobe Acrobat Reader (free)
    • Adobe Flash Player (free)
    • Microsoft Word. Macintosh users will need a writing program that can be made compatible with Word.
    • Google Docs (free)
    • ASU Facebook account (this is not the same as a personal FB account). You are responsible for having a reliable computer and internet connection throughout the course.

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Attendance/Participation
Preparation for class means reading the assigned readings & reviewing all information required for that week. Attendance will also include logging into myASU Blackboard on a regular basis and participating in all of the required activities that are posted in the course.

Studying and Preparation Time
The course requires you to spend time preparing and completing assignments. A three-credit course requires 135 hours of student work. Therefore expect to spend approximately 9 hours a week preparing for and actively participating in this course.

Communicating With the Instructor
This course uses a “three before me” policy in regards to student-to-faculty communications. When questions arise during the course of this class, please remember to check these three sources for an answer before asking me to reply to your individual questions:
1. Course syllabus.
2. Announcements in myASU/Blackboard.
3. The “Water Cooler” discussion board or class Facebook.
This policy will help you in potentially identifying answers before I can get back to you and it also helps your instructor from answering similar questions or concerns multiple times.

The instructor will initiate a request for a class-only Facebook account. If you cannot find an answer to your question, please first post your question to the “Water Cooler” Discussion Board. Here, your question can be answered to the benefit of all students by either your fellow students who know the answer to your question or the instructor. You are encouraged to answer questions from other students in the discussion forum when you know the answer to a question in order to help provide timely assistance. You may post anonymously.

If you have questions of a personal nature such as relating a personal emergency, questioning a grade on an assignment, or something else that needs to be communicated privately, you are welcome to contact me via email. I will usually respond to emails from 9am to 10am on Tuesdays and Thursdays. I can be contacted by email at gdixon@asu.edu. Please allow 24 hours for me to respond.

If you have a question about the computer technology being used in the course, please contact the UTO Help Desk for assistance (contact information is listed below).

Email and Internet
You must have an active ASU e-mail account and access to the Internet. All instructor correspondence will be sent to your ASU e-mail account. Please plan on checking your ASU email account regularly for course related messages and make sure your email account is not full.

This course uses Blackboard for the facilitation of communications between faculty and students, submission of assignments, and posting of grades. The myASU/Blackboard Course Site can be accessed at http://my.asu.edu

Campus Network or Blackboard Outage
When access to Blackboard is not available for an extended period of time (greater than one entire evening - 6pm till 11pm) you can reasonably expect that the due date for assignments will be changed to the next day (assignment still due by midnight).

Late or Missed Assignments
All assignments must be finished and turned in to complete the course. Only under exceptional circumstances will late assignments be accepted and only if the instructor is notified BEFORE the assignment is due and is willing to provide an opportunity for the student to submit his/her assignment late; points may be taken off for a late assignment.
Submitting Assignments
All assignments, unless otherwise announced by the instructor, MUST be submitted via Blackboard. Each assignment will have a designated place to submit the assignment.

Be aware that all student submissions will be in the public domain, no copyright may be assigned.

Drop and Add dates
If you feel it is necessary to withdraw from the course, please see http://students.asu.edu/drop-add for full details on the types of withdrawals that are available and their procedures. Instructors do not have the ability to initiate withdrawals.

Subject to change notice
All material, assignments, and deadlines are subject to change with prior notice. It is your responsibility to stay in touch with your instructor, review the course site regularly, or communicate with other students, and to adjust as needed if assignments or due dates change.

Academic Integrity
ASU expects and requires all its students to act with honesty and integrity, and respect the rights of others in carrying out all academic assignments. For more information on academic integrity, including the policy and appeal procedures, please visit http://provost.asu.edu/academicintegrity and the Student Conduct Statement below.

Student Conduct Statement
Students are required to adhere to the behavior standards listed in Arizona Board of Regents Policy Manual Chapter V – Campus and Student Affairs: Code of Conduct (http://www.abor.asu.edu/1_the_regents/policymanual/chap5/5Section_C.pdf), ACD 125: Computer, Internet, and Electronic Communications (http://www.asu.edu/aad/manuals/acd/acd125.html), and the ASU Student Academic Integrity Policy (http://www.asu.edu/studentaffairs/studentlife/srv/index.htm).

Students are entitled to receive instruction free from interference by other members of the class. If a student is disruptive, an instructor may ask the student to stop the disruptive behavior and warn the student that such disruptive behavior can result in withdrawal from the course. An instructor may withdraw a student from a course when the student's behavior disrupts the educational process under USI 201-10 http://www.asu.edu/aad/manuals/usi/usit201-10.html.

Appropriate classroom behavior is defined by the instructor. This includes the number and length of individual messages online. Course discussion messages should remain focused on the assigned discussion topics. Students must maintain a cordial atmosphere and use tact in expressing differences of opinion. Inappropriate discussion board messages may be deleted if an instructor feels it is necessary. Students will be notified privately that their posting was inappropriate.

Student access to the course Send Email feature may be limited or removed if an instructor feels that students are sending inappropriate electronic messages to other students in the course.

FERPA Statement
Because of the nature of the course, the method of delivery contains specific online methodologies. the student accepts the following as a normal and necessary part of this course:

- Correspondence will be transacted by email using ASU.edu email addresses.
- If a request for information is sent to the instructor from an ASU email address, the response will be returned to that same email address.
- The student’s ASU email address will be listed as contact information within the course.
- Discussion Board participation will include a reference to the student’s identity.
- This course may require working in groups and receiving a group-project grade.
- The posting of pictures or other project contents may be required.
- Use of recorded video conferences may disclose student identity to others in the class.

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**Technical Support Contact Information**

For technical assistance 24 hours a day, 7 days a week, please contact the University Technology Office Help Desk:

Phone: 480-965-6500  
Email: helpdesk@asu.edu  

For information on systems outages see the ASU systems status calendar, please visit [http://syshealth.asu.edu/](http://syshealth.asu.edu/) and [http://systemstatus.asu.edu/status/calendar.asp](http://systemstatus.asu.edu/status/calendar.asp)

**Accessibility Statement**

In compliance with the Rehabilitation Act of 1973, Section 504, and the Americans with Disabilities Act of 1990, professional disability specialists and support staff at the Disability Resource Centers (DRC) facilitate a comprehensive range of academic support services and accommodations for qualified students with disabilities. DRC staff coordinate transition from high schools and community colleges, in-service training for faculty and staff, resolution of accessibility issues, community outreach, and collaboration between all ASU campuses regarding disability policies, procedures, and accommodations.

Students who wish to request an accommodation for a disability should contact the Disability Resource Center (DRC) for their campus.

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<thead>
<tr>
<th>Location</th>
<th>Contact Information</th>
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<tbody>
<tr>
<td><strong>Tempe Campus</strong></td>
<td><a href="http://www.asu.edu/studentaffairs/ed/drc/">http://www.asu.edu/studentaffairs/ed/drc/</a></td>
</tr>
<tr>
<td></td>
<td>480-965-1234 (Voice)</td>
</tr>
<tr>
<td></td>
<td>480-965-9000 (TTY)</td>
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<tr>
<td><strong>West Campus</strong></td>
<td><a href="http://www.west.asu.edu/drc/">http://www.west.asu.edu/drc/</a></td>
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<td></td>
<td>University Center Building (UCB), Room 130</td>
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<td>602-543-8145 (Voice)</td>
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<td><strong>Polytechnic Campus</strong></td>
<td><a href="http://www.asu.edu/studentaffairs/ed/drc/">http://www.asu.edu/studentaffairs/ed/drc/</a></td>
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<td>480.727.1165 (Voice)</td>
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<td>480.727.1009 (TTY)</td>
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<td><strong>Downtown Phoenix Campus</strong></td>
<td><a href="http://campus.asu.edu/downtown/DRC">http://campus.asu.edu/downtown/DRC</a></td>
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<tr>
<td></td>
<td>University Center Building, Suite 160</td>
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<td></td>
<td>602-496-4321 (Voice)</td>
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<td>602-496-0378 (TTY)</td>
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