

Mandatory Review



ARIZONA STATE UNIVERSITY

ARIZONA STATE UNIVERSITY

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 3/3/10

- 1. ACADEMIC UNIT: Chemistry and Biochemistry, CLAS
2. COURSE PROPOSED: CHM 107 Chemistry and Society 3
3. CONTACT PERSON: Name: Kirstin Hendrickson Phone: 480-965-4256
Mail Code: 1604 E-Mail: khendrickson@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

Awareness 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

- Global Awareness-G - MR
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.

This course covers the reciprocal relationship between science and society on personal, national, and global levels. Topics covered include chemical issues in developed vs. developing nations, effect of global science policy on nations (including issues of developmental/economic inequity between developed and developing nations), and ways in which other cultures/nations and the U.S. work together toward common global goals.

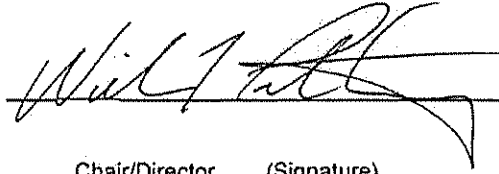
CROSS-LISTED COURSES: [X] No [] Yes; Please identify courses:

Is this amultisection course?: [] No [X] Yes; Is it governed by a common syllabus? yes



ARIZONA STATE UNIVERSITY

William T. Petuskey _____

 _____

Chair/Director (Print or Type)

Chair/Director (Signature)

Date: _____

Arizona State University Criteria Checklist for

GLOBAL AWARENESS [G]

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.

ASU--[G] CRITERIA			
GLOBAL AWARENESS [G]			
YES	NO		Identify Documentation Submitted
<input checked="" type="checkbox"/>	<input type="checkbox"/>	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):	
<input type="checkbox"/>	<input type="checkbox"/>	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.	
<input type="checkbox"/>	<input type="checkbox"/>	b. Contemporary non-English language courses that have a significant cultural component.	
<input type="checkbox"/>	<input type="checkbox"/>	c. Comparative cultural studies in which most, i.e., more than half, of the material is devoted to non-U.S. areas.	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	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.	Course description and syllabus.

Course Prefix	Number	Title	Designation
Chm	107	Chemistry and Society	G

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.

Criteria (from checksheet)	How course meets spirit (contextualize specific examples in next column)	Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)
1	Chemistry is a global issue— environmental (global warming, ozone hole), cultural (genetics and gene technology) and livelihood (GMO, nuclear technology) concerns are not limited in scope to the US. This course addresses these concerns within other countries and on a global scale. Particular emphasis place upon differences between developed (US, EU) and developing nations.	Specific topics covered in syllabus include global environmental issues (global warming, ozone hole), global technology concerns (nuclear technology, GMO, refrigerants, alternative energy), and global livelihood issues (international treaties, pesticide use, challenges associated with food production)
2d	Course is centered around an understanding that we are globally interdependent upon each other. Global problems and treaties (and effects of each) are central to the course.	Global treaties discussed in depth (Kyoto, Montreal, etc), including when and why the worked or didn't work. Disparity of expectations put upon developed vs. developing nations (in terms of economics, development, technology) is also addressed with regard to these treaties. Kyoto covered with global warming, Montreal covered with ozone. Each section of

		the course includes ramifications upon the global community.

This description is taken from the schedule of classes:

General chemical principles and concepts presented in context of social and technological issues, e.g., energy, pollution, global warming, and others. This is a lecture course which may be combined with the laboratory CHM 108 for those interested in lab course credit. Recommended for General Studies credit. Cannot be used for major credit in chemical or biochemical sciences.

The description below is taken from the syllabus:

This course is meant for the non-chemistry major who has an interest in becoming an informed citizen in our increasingly technological world. It focuses on a range of global social issues involving scientific aspects and examines them in depth, introducing chemical principles as needed. Topics include: chemistry of the atmosphere with discussion of the composition of air, pollutants, ozone depletion, greenhouse gases, and global warming; chemistry of molecules essential to life, including DNA, carbohydrates, fats, proteins, vitamins, and pharmaceutical synthesis, with emphasis on how molecular properties determine observable characteristics; applications of chemistry including the chemistry we encounter every day; consideration of how global energy needs are met by chemical transformations, with a focus on consumption of fossil fuels and alternative sources of energy such as solar energy and nuclear power.

CHM 107 Chemistry and Society

Fall 2009

IMPORTANT: YOU MUST READ THIS ENTIRE SYLLABUS – YOU ARE RESPONSIBLE FOR THE MATERIAL CONTAINED HEREIN. IGNORANCE OF THE MATERIAL IN THE SYLLABUS IS NOT AN EXCUSE FOR A FAILURE TO FULFILL COURSE REQUIREMENTS, AND MAY RESULT IN A FAILING GRADE.

Instructor: Dr. Kirstin Hendrickson, PS-H234, khendrickson@asu.edu, 480-965-4256

Office hours: Tues, 1-3; Wed, 2-3: held in PSH-234

Website: <http://my.asu.edu> (Blackboard)

Optional Text: *Chemistry in Context; Applying Chemistry to Society*, Fifth Edition, 2006, Eubanks, L. P., Middlecamp, C. H., Pienta, N. J., Heltzel, C. E., & Weaver, G. C., A project of the American Chemical Society, McGraw Hill, New York.

Additional Reading: Supplementary materials may occasionally be provided to students as either handouts in class or to be printed from Blackboard.

Required Equipment: A reliable calculator with the ability to do exponential functions (make sure you know how to use your calculator, and that it has adequately charged batteries, prior to the first exam)

Goals: To understand at a molecular level the underlying chemical processes that shape the world, and to appreciate how society can be transformed through applications of chemistry.

Course Description: This course is meant for the non-chemistry major who has an interest in becoming an informed citizen in our increasingly technological world. It focuses on a range of global social issues involving scientific aspects and examines them in depth, introducing chemical principles as needed. Topics include: chemistry of the atmosphere with discussion of the composition of air, pollutants, ozone depletion, greenhouse gases, and global warming; chemistry of molecules essential to life, including DNA, carbohydrates, fats, proteins, vitamins, and pharmaceutical synthesis, with emphasis on how molecular properties determine observable characteristics; applications of chemistry including the chemistry we encounter every day; consideration of how global energy needs are met by chemical transformations, with a focus on consumption of fossil fuels and alternative sources of energy such as solar energy and nuclear power.

Evaluation:	Exams (4 x 100 each)	400
	Worksheets	200
	Chapter quizzes	100
	Final Exam	200
	<u>In Class Assignments</u>	<u>100</u>
	Total	1000 points

Plus and minus grading will NOT be used. There are no predefined borders for grades, although they will not be set higher than 90% A, 80% B, 70% C and 60% D.

Lecture Format: Lecture notes will be posted prior to each lecture on Blackboard as PDFs of PowerPoint documents. You will find that having the printouts ahead of time is helpful, but please DO NOT use these documents as a substitute for taking notes. In particular, if you use these documents as a substitute for coming to class, DO NOT expect to pass. Not only is class participation and attendance a large part of your grade, but in addition, I often provide information in class that is not on the printed notes.

Exams: Exams are individual efforts, closed-book, closed-note, and are timed. Exam dates are listed on the syllabus, and will not be changed for any reason (even if we get behind in lecture). Please plan accordingly, as there are no makeup exams for any reason. Exams consist of 40 multiple-choice questions, and are worth 100 points. The final exam will be worth 200 points. If your final exam percentage is better than one of your earlier exams, I will replace the earlier score with your final exam percentage. You must take all four semester exams for the “resurrection” final to apply. Please note that there is NO makeup exam if you miss the final;

missed final exams will result in a score of zero. **Your final exam date and time are listed on the syllabus. You are responsible for this information.**

In Class Assignments: Periodically, you will be required to complete assignments in class. There are no makeups for in-class assignments for any reason; they are attendance-dependent. Assignments will be worth 10 points each, but the total will be scaled to 100 points at the end of the semester

Chapter Quizzes: You will be required to complete a short (10 question, multiple choice) quiz at the end of each chapter. This will help test your knowledge of the material you've just learned, and will alert you to potential exam questions. Quizzes will be taken ONLINE (via Blackboard) by the specified date. Late quizzes will not be accepted. Note that while Blackboard will list each worksheet as having a value of 10 points, the total will be SCALED to a value out of 100 before final grades are assigned.

IMPORTANT NOTE REGARDING WEB BROWSERS: There is a known compatibility issue with Blackboard and Internet Explorer 8. In order to take quizzes and exams successfully, you must go to <http://help.asu.edu/node/1379> and follow the instructions for fixing this issue. Students who do not follow these directions and are consequently unable to complete the first quiz(zes) and/or exam(s) will receive zeros – no retakes will be permitted. It is YOUR RESPONSIBILITY to verify the compatibility of a system/browser with Blackboard BEFORE you attempt to complete any course material.

Worksheets: Practice worksheets will be assigned for each chapter, and should be submitted ELECTRONICALLY to the specified dropbox (see assignment links) by the specified date. Late assignments will NOT be accepted. Note that while Blackboard will list each worksheet as having a value of 10 points, the total will be SCALED to a value out of 200 before final grades are assigned. Worksheets submitted by any alternate means (hard copies, emailed worksheets, etc) will NOT be accepted.

Sources of Help: In addition to my office hours, the TAs have office hours in the Learning Resource Center (LRC) located in PSH-137. The LRC is staffed Monday through Thursday from 8:30 a.m. to 9:30 p.m., and Friday from 8:30 a.m. to 4:30 p.m. Teaching assistants and LRC staff members can be a valuable resource.

Withdrawing from the course: The withdrawal deadline is November 6 (in person), and November 8 if done through ASU Interactive/Sun Dial. If you withdraw from the course, you must inform your lab group so remaining members can make accommodations for your departure.

Academic integrity: Cheating will absolutely not be tolerated. The first such infraction will be dealt with to the fullest extent permissible by the university. There are no exceptions. This includes (but is not limited to) any form of inter-student collaboration not specifically sanctioned by the professor, use of prohibited materials or devices during exams, copying or distribution of quiz or exam answers prior to the test, and plagiarism.

Schedule, CHM 107, Fall 2009

Dates:	Lecture topic and corresponding reading from optional text:
UNIT 1	
Mon 8/24-Wed 8/26	Chapter 1: The Air We Breathe
Mon 8/31-Wed 9/2	Chapter 2: Protecting the Ozone Layer
Mon 9/7-Wed 9/9	Chapter 3: The Chemistry of Global Warming
Mon 9/14	Exam 1: Chapters 1-3
UNIT 2	
Wed 9/16-Mon 9/21	Chapter 10: Manipulating Molecules and Designing Drugs
Wed 9/23-Mon 9/28	Chapter 11: Nutrition; Food for Thought
Wed 9/30-Mon 10/5	Handout Chapter: Fitness and Health
Wed 10/7-Mon 10/12	Chapter 12: Genetic Engineering
Wed 10/14	Catch Up Day
Mon 10/19	Exam 2: Chapters 10-12, Fitness/Health
UNIT 3	
Wed 10/21	A Physician's Perspective of Complementary and Alternative Medicine (no reading)
Mon 10/26-Wed 10/28	Chapter 5: The Water We Drink
Mon 11/2-Wed 11/4	Handout Chapter: The Chemistry of Food
Mon, 11/9	Exam 3: CAM, Chapter 5 and Food
UNIT 4	
Wed 11/11	NO CLASS – Veterans' Day
Mon 11/16-Wed 11/18	Chapter 4: Energy, Chemistry, and Society
Mon 11/23-Wed 11/25	Chapter 8: Energy from Electron Transfer
Mon 11/30-Wed 12/2	Chapter 7: The Fires of Nuclear Fission
Mon, 12/7	Exam 4: Chapters 4, 8, and 7
Wed, 12/16, 12:10-2:00 pm (lecture hall)	Final Exam

Note: This syllabus may be revised and appended as required; changes to the syllabus will be announced on Blackboard.

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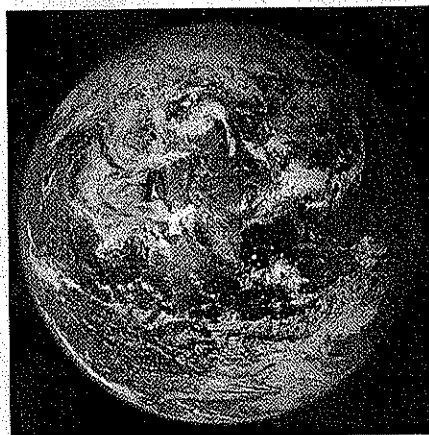
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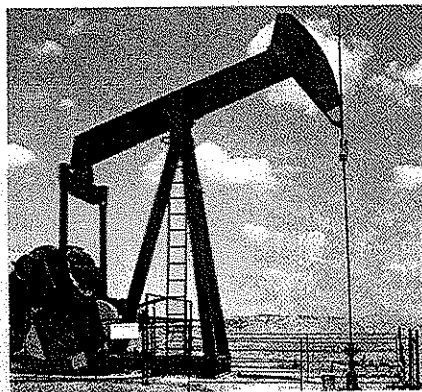
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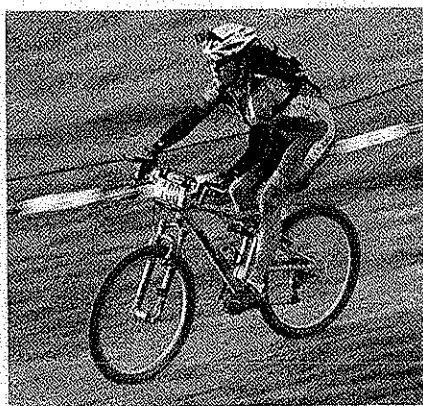
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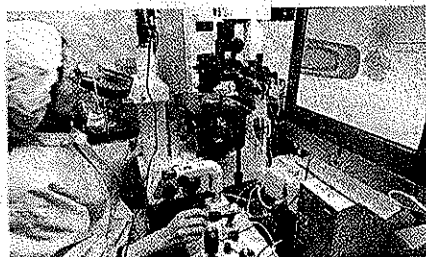
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