

CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

COURSE MODIFICATION PROPOSAL

Courses must be submitted by October 15, 2012, and finalized by the end of the fall semester to make the next catalog (2013-14) production

DATE (CHANGE DATE EACH TIME REVISED): 9/11/12; REV 12.3.12GE; REV 12.5.12

PROGRAM AREA(S): CHEMISTRY

Directions: All of sections of this form must be completed for course modifications. Use YELLOWED areas to enter data. All documents are stand alone sources of course information.

1. Indicate Changes and Justification for Each. [Mark all change areas that apply and follow with justification. Be as brief as possible but, use as much space as necessary.]

☐	Course title	☐	Course Content
☐	Prefix/suffix	☐	Course Learning Outcomes
☐	Course number	☐	References
☒	Units	☐	GE
☒	Staffing formula and enrollment limits	☐	Other
☐	Prerequisites/Corequisites	☒	Reactivate Course
☐	Catalog description		
☒	Mode of Instruction		

Justification: We want to offer this course, but do not have the laboratory space to offer the lab. We think it will be a popular option for non-science majors wanting to fulfill their B1 GE category. We are considering offering it as an online or blended course, but will start it off traditionally if approved for Spring 2013. The course is currently stale, so we want to reactivate it.

2. Course Information.

[Follow accepted catalog format.] (Add additional prefixes if cross-listed)

OLD
 Prefix CHEM Course# 100
 Title CHEMISTRY AND SOCIETY Units (4)
 3 hours lecture per week
 3 hours laboratory per week

Prerequisites:
 Consent of Instructor Required for Enrollment
 Corequisites:

Catalog Description (Do not use any symbols):

Three hours of lecture and one three-hour lab per week. An introduction to the basic principles of chemistry and a consideration of the benefits and problems arising from applications of chemistry. Discussions of foods and food additives, drugs, plastics and other materials of everyday life, fuel sources, the atmosphere, and fresh water. Lab fee required.

General Education Categories: B1

Grading Scheme (Select one below):

☐ A – F
☐ Credit/No Credit
☐ Optional (Student's Choice)

Repeatable for up to units

Total Completions

Multiple Enrollment in Same Semester Y/N

Course Level:

☐ Undergraduate
☐ Post-Baccalaureate
☐ Graduate

NEW
 Prefix CHEM Course# 100
 Title CHEMISTRY AND SOCIETY Units (3)
 3 hours lecture per week
 hours blank per week

Prerequisites:
 Consent of Instructor Required for Enrollment
 Corequisites:

Catalog Description (Do not use any symbols):

Three hours of lecture and one three-hour lab per week. An introduction to the basic principles of chemistry and a consideration of the benefits and problems arising from applications of chemistry. Discussions of foods and food additives, drugs, plastics and other materials of everyday life, fuel sources, the atmosphere, and fresh water.

General Education Categories: B1

Grading Scheme (Select one below):

☒ A – F
☐ Credit/No Credit
☐ Optional (Student's Choice)

Repeatable for up to units

Total Completions

Multiple Enrollment in Same Semester Y/N

Course Level:

☒ Undergraduate
☐ Post-Baccalaureate
☐ Graduate

3. Mode of Instruction (Hours per Unit are defaulted)

Hegis Code(s) _____
(Provided by the Dean)

Existing

Proposed

	Units	Hours Per Unit	Benchmark Enrollment	Graded		Units	Hours Per Unit	Benchmark Enrollment	Graded	CS No. (filled out by Dean)
Lecture	<u>3</u>	<u>1</u>	<u>40</u>		Lecture	<u>3</u>	<u>1</u>	<u>72</u>	X	
Seminar		<u>1</u>			Seminar		<u>1</u>			
Lab	<u>1</u>	<u>3</u>	<u>18</u>		Lab		<u>3</u>			
Activity		<u>2</u>			Activity		<u>2</u>			
Field Studies					Field Studies					
Indep Study					Indep Study					
Other blank					Other blank					
Online					Online					

4. Course Attributes:

X **General Education Categories:** All courses with GE category notations (including deletions) must be submitted to the GE website: <http://summit.csuci.edu/geapproval>. Upon completion, the GE Committee will forward your documents to the Curriculum Committee for further processing.

A (English Language, Communication, Critical Thinking)

- A-1 Oral Communication
- A-2 English Writing
- A-3 Critical Thinking

B (Mathematics, Sciences & Technology)

- X** B-1 Physical Sciences
- B-2 Life Sciences – Biology
- B-3 Mathematics – Mathematics and Applications
- B-4 Computers and Information Technology

C (Fine Arts, Literature, Languages & Cultures)

- C-1 Art
- C-2 Literature Courses
- C-3a Language
- C-3b Multicultural

D (Social Perspectives)

E (Human Psychological and Physiological Perspectives)

UDIGE/INTD Interdisciplinary

Meets University Writing Requirement

Meets University Language Requirement

American Institutions, Title V Section 40404: **Government** **US Constitution** **US History**
Refer to website, Exec Order 405, for more information: <http://senate.csuci.edu/comm/curriculum/resources.htm>

Service Learning Course (Approval from the Center for Community Engagement must be received before you can request this course attribute).

Online Course (Answer YES if the course is ALWAYS delivered online).

5. Justification and Requirements for the Course. [Make a brief statement to justify the need for the course]

OLD

This course presents an introduction to Chemistry and the importance of Chemistry in society and is designed to satisfy the Physical Science and laboratory component requirements in the General Education.

Requirement for the Major/Minor

Elective for the Major/Minor

X Free Elective

NEW

This course presents an introduction to Chemistry and the importance of Chemistry in society and is designed to satisfy the Physical Science component requirements in the General Education.

Requirement for the Major/Minor

Elective for the Major/Minor

X Free Elective

Submit Program Modification if this course changes your program.

6. Student Learning Outcomes. (List in numerical order. Please refer to the Curriculum Committee's "Learning Outcomes" guideline for measurable outcomes that reflect elements of Bloom's Taxonomy: <http://senate.csuci.edu/comm/curriculum/resources.htm>. The committee recommends 4 to 8 student learning outcomes, unless governed by an external agency (e.g., Nursing).

Upon completion of the course, the student will be able to:

OLD

- Outline the development of the field of chemistry from a historical perspective and how chemistry has impacted society
- Describe the scientific method and how it is used to approach the study of chemicals/ molecules
- Evaluate the relationship between the structures and function of molecules
- Explain the basic chemical principles involved in the properties of materials
- Explain the basic chemical principles involved in observed phenomena
- Perform simple chemical reactions

Upon completion of the course, the student will be able to:

NEW

- Outline the development of the field of chemistry from a historical perspective and describe chemistry's impact on society
- Conduct planned investigations using the scientific method to reach reasoned conclusions. (GE 5.1)
- Evaluate the relationship between the structures and function of molecules and their properties illustrated by specific topics such as the environment, medicine, and/or technology
- Critically assess topics in news articles in which chemistry plays an important role, and will practice critical examination of the information. (GE 3.2)

7. Course Content in Outline Form. (Be as brief as possible, but use as much space as necessary)

OLD

Air Quality and Atmospheric Chemistry
Chemistry of the Ozone Layer
Carbon Dioxide Chemistry and Global Warming
Energy: Chemistry of Fossil Fuels, Solar Energy, and Nuclear Energy
Water Quality
Weapons of War: Explosives, Chemical Warfare, and Nuclear Fission/Fusion
Plastics and Polymers
Designing Pharmaceutical Drugs for a New Generation
Chemistry Behind Vitamins and Nutrition

NEW

Air Quality and Atmospheric Chemistry
Chemistry of the Ozone Layer
Carbon Dioxide Chemistry and Global Warming
Energy: Chemistry of Fossil Fuels, Solar Energy, and Nuclear Energy
Water Quality
Weapons of War: Explosives, Chemical Warfare, and Nuclear Fission/Fusion
Plastics and Polymers
Designing Pharmaceutical Drugs for a New Generation
Chemistry Behind Vitamins and Nutrition

Does this course content overlap with a course offered in your academic program? Yes No X

If YES, what course(s) and provide a justification of the overlap.

Does this course content overlap a course offered in another academic area? Yes No X

If YES, what course(s) and provide a justification of the overlap.

Overlapping courses require Chairs' signatures.

8. Cross-listed Courses (Please note each prefix in item No. 1)

A. List cross-listed courses (Signature of Academic Chair(s) of the other academic area(s) is required).

B. List each cross-listed prefix for the course:

C. Program responsible for staffing:

9. References. [Provide 3-5 references]

OLD ☐ C. L. Stanitski (Ed.), *Chemistry in Context: Applying Chemistry to Society*, 3rd Ed., McGraw Hill, 2000. American Chemical Society, Ed. *Laboratory Manual To Accompany Chemistry In Context: Applying Chemistry To Society*, McGraw Hill, 1999. K. K. Karukstis, G. R. Van Hecke *Chemistry Connections: The Chemical Basis of Everyday Phenomena*, 2nd Ed., Harcourt, 2003. ☐

NEW ☐ C. L. Stanitski (Ed.), *Chemistry in Context: Applying Chemistry to Society*, 3rd Ed., McGraw Hill, 2000. American Chemical Society, Ed. *Laboratory Manual To Accompany Chemistry In Context: Applying Chemistry To Society*, McGraw Hill, 1999. K. K. Karukstis, G. R. Van Hecke *Chemistry Connections: The Chemical Basis of Everyday Phenomena*, 2nd Ed., Harcourt, 2003. ☐

10. Tenure Track Faculty qualified to teach this course.

Aloisio, Gillespie, Hampton ☐

11. Requested Effective Date or First Semester offered: Fall 2013

12. New Resource Requested: Yes ☐ No ☒

If YES, list the resources needed.

A. Computer Needs (data processing, audio visual, broadcasting, other equipment, etc.)

no ☐

B. Library Needs (streaming media, video hosting, databases, exhibit space, etc.)

no ☐

C. Facility/Space/Transportation Needs:

no ☐

D. Lab Fee Requested: Yes ☐ No ☒ (Refer to the Dean's Office for additional processing)

E. Other. ☐

13. Will this course modification alter any degree, credential, certificate, or minor in your program? Yes ☐ No ☒

If, YES attach a program update or program modification form for all programs affected.

Priority deadline for New Minors and Programs: **October 1, 2012** of preceding year.

Priority deadline for Course Proposals and Modifications: **October 15, 2012.**

Last day to submit forms to be considered during the current academic year: **April 15th.**

Simone Aloisio ☐

9/11/12 ☐

Proposer(s) of Course Modification

Date

Type in name. Signatures will be collected after Curriculum approval.

GE Committee response to your request have CHEM100: Chemistry and Society added to B1: Physical Sciences -- Chemistry, Physics, Geology, and Earth Sciences

Approved by 2012-2013 Committee:

Janet Rizzoli

Geoffrey Buhl

Catherine Burriss

Claudio Paiva

Kathy Musashi

Todd Oberson

Debra Hoffmann

Gina Farrar

Rachel Danielson

Request Submitted

Course: CHEM100 Chemistry and Society

Area: B1 Physical Sciences -- Chemistry, Physics, Geology, and Earth Sciences

Date Submitted: 12/1/2012 6:57:28 AM

Date Approved: 12/3/2012 3:08:49 PM

1. Promote the understanding and appreciation of the methodologies of math or science as investigative tools and the limitations of mathematical or scientific endeavors

Students will conduct planned investigations using the scientific method to reach reasoned conclusions. This class will not have a scheduled lab, but students will conduct lab activities outside of class time, and lab activities not requiring a fully equipped lab in class. The course will discuss the Scientific Method and how it is applied to Chemistry problems, and the limitations of the Scientific Method.

2. Present mathematical or scientific knowledge in a historical perspective and the influences of math or science on the development of world civilizations, both past and present

The course will present a historical perspective on the development of the field of chemistry and the impact of these chemical developments on civilization and society will be discussed.

3. Apply inductive and deductive reasoning processes and explore fallacies and misconceptions in the mathematical or scientific areas

The application of deductive and inductive reasoning processes is fundamental to the understanding of general chemistry. Students in the course will be taught how to reason from experimental data to form conclusions regarding chemical concepts. In addition to presenting examples of good reasoning, students will learn to differentiate good reasoning from fallacies, misconceptions and poor reasoning, for example in the alleged "memory properties" of water in high dilutions of homeopathic medicines.

4. Present the principles and concepts of the physical sciences and the physical universe

The course will focus on a discussion of chemistry principles and concepts and their impact on society.

Approval Sheet

Course: CHEM 100

If your course has a General Education Component or involves Center affiliation, the Center will also sign off during the approval process.

Multiple Chair fields are available for cross-listed courses.

The CI program review process includes a report from the respective department/program on its progress toward accessibility requirement compliance. By signing below, I acknowledge the importance of incorporating accessibility in course design.

Program Chair		
Signature		Date
Program Chair		
Signature		Date
Program Chair		
Signature		Date
General Education Chair		
Signature		Date
Center for Intl Affairs Director		
Signature		Date
Center for Integrative Studies Director		
Signature		Date
Center for Multicultural Engagement Director		
Signature		Date
Center for Civic Engagement and Service Learning Director		
Signature		Date
Curriculum Chair		
Signature		Date
AVP		
Signature		Date