

CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS
COURSE MODIFICATION PROPOSAL
Courses must be submitted by November 2, 2009,
to make the next catalog (2010--2011) production

DATE (CHANGE DATE EACH TIME REVISED): 9/29/2009 REV 11.2.09

PROGRAM AREA(S): CHEMISTRY

Directions: All of sections of this form must be completed for course modifications. All documents are stand alone sources of course information.

1. Course Information.

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

OLD

Prefix CHEM Course# 124 Title
 General Chemistry II Problem-Solving Units (1)
 hours lecture per week
 1 hours activity per week

x Prerequisites: CHEM 122
 Consent of Instructor Required for Enrollment
 Corequisites:

Catalog Description (Do not use any symbols):
 An instructor/peer-supervised interactive problem-solving session for students in CHEM 122 where students work in small groups on problems related to the content in CHEM 122.

General Education	Graded	Repeatable
Categories	CR/NC	for up to units
Lab Fee Requested	x A - F	Total
		Completions
Course Level:		Multiple
Undergraduate	Optional	Enrollment in
Post-bac/Credential	(Student's	same semester
Graduate	choice)	

NEW

Prefix CHEM Course# 124 Title
 General Chemistry II Problem-Solving Units (1)
 hours lecture per week
 1 hours discussion per week

Prerequisites:
 Consent of Instructor Required for Enrollment
 x Corequisites: CHEM 122

Catalog Description (Do not use any symbols):
 An instructor/peer-supervised interactive problem-solving session for students in CHEM 122 where students work in small groups on problems related to the content in CHEM 122.

General Education	Graded	Repeatable for
Categories	x CR/NC	up to units
Lab Fee Requested	A - F	Total
		Completions
Course Level:		Multiple
XX Undergraduate	Optional	Enrollment in same
Post-bac/Credential	(Student's	semester
Graduate	choice)	

2. 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		1			Lecture		1			
Seminar		1			Seminar		1			
Lab		3			Lab		3			
Activity	1	2	30	x	Activity		2			
Field Studies					Field Studies					
Indep Study					Indep Study					
Other blank					Other discussion	1		30	x	

3. Course Attributes:

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)

- 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).

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

OLD

This course is an optional problem-solving session for the second semester general chemistry course (CHEM 122), and provides students with an interactive, problem-solving session where students work in small teams to solve problems in chemistry.

Requirement for the Major/Minor
Elective for the Major/Minor
Free Elective

NEW

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Requirement for the Major/Minor
Elective for the Major/Minor
XX Free Elective

Submit Program Modification if this course changes your program.

5. Learning Objectives. (List in numerical order. You may wish to visit resource information at the following website: <http://senate.csuci.edu/comm/curriculum/resources.htm>)

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

OLD

Students who successfully complete this course will be able to:

- Describe chemical equilibrium both qualitatively and quantitatively
- Explain solubility of material in aqueous solutions and be familiar with non-aqueous solutions
- Solve problems dealing with acid-base chemistry
- Describe oxidation-reduction chemistry qualitatively and in terms of equilibrium

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NEW

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- Explain solubility of material in aqueous solutions and be familiar with non-aqueous solutions
- Solve problems dealing with acid-base chemistry
- Describe oxidation-reduction chemistry qualitatively and in terms of equilibrium

- Evaluate problems involving complex equilibrium (e.g. solubility in acidic solution)
- Identify the most common crystal structures of chemicals
- Describe the chemistry of common inorganic species
- Identify different types of organic species
- Explain the differences between basic categories of biologically important chemicals

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- Identify the most common crystal structures of chemicals
- Describe the chemistry of common inorganic species
- Identify different types of organic species
- Explain the differences between basic categories of biologically important chemicals

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

OLD

Chemical Equilibrium
 Vapor pressure
 Melting and boiling
 Gas Phase Equilibrium
 Equilibrium and temperature
 Le Chatlier's principle
 Solutions
 Solvents and Solutes
 Water
 Solubility
 Solubility and equilibrium
 Solubility product
 Henry's Law
 Freezing and melting of solutions
 Raoult's Law
 Common Ion Effect
 Complex Ions
 Acids and Bases
 Hydronium ions and pH
 Equilibrium in water
 Strong and weak acids and bases
 Equilibrium of weak acids and bases
 Acid-base titrations
 Buffers
 Polyprotic acids and bases
 Oxidation and Reduction
 Oxidation-Reduction half reactions
 Balancing Redox reactions
 Redox reactions in acidic and basic solutions
 Electrical cells
 Standard state potentials
 Equilibrium and Nearnst
 Electrolysis
 Inorganic Chemistry
 Crystals
 Description of crystal structure
 Common unit cells
 Non-crystalline solids
 Liquids
 Surface tension
 Phase diagrams
 Organic Chemistry
 Saturated and unsaturated hydrocarbons
 Aromatic compounds

NEW

Chemical Equilibrium
 Vapor pressure
 Melting and boiling
 Gas Phase Equilibrium
 Equilibrium and temperature
 Le Chatlier's principle
 Solutions
 Solvents and Solutes
 Water
 Solubility
 Solubility and equilibrium
 Solubility product
 Henry's Law
 Freezing and melting of solutions
 Raoult's Law
 Common Ion Effect
 Complex Ions
 Acids and Bases
 Hydronium ions and pH
 Equilibrium in water
 Strong and weak acids and bases
 Equilibrium of weak acids and bases
 Acid-base titrations
 Buffers
 Polyprotic acids and bases
 Oxidation and Reduction
 Oxidation-Reduction half reactions
 Balancing Redox reactions
 Redox reactions in acidic and basic solutions
 Electrical cells
 Standard state potentials
 Equilibrium and Nearnst
 Electrolysis
 Inorganic Chemistry
 Crystals
 Description of crystal structure
 Common unit cells
 Non-crystalline solids
 Liquids
 Surface tension
 Phase diagrams
 Organic Chemistry
 Saturated and unsaturated hydrocarbons
 Aromatic compounds

Functional groups
Alcohols, Esters, Aldehydes and Ketones
Organic acids and Amines
Biochemistry
Carbohydrates
Lipids
Amino acids and Proteins
Nucleic acids and DNA
Vitamins

Functional groups
Alcohols, Esters, Aldehydes and Ketones
Organic acids and Amines
Biochemistry
Carbohydrates
Lipids
Amino acids and Proteins
Nucleic acids and DNA
Vitamins

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

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

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

Overlapping courses require Chairs' signatures.

7. 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:

8. References. [Provide 3-5 references]

OLD

Pauling, L. General Chemistry, 3rd Ed., 1970
Chang, R. Chemistry, 7th Ed., 2001
Pertucci, R.H.; Harwood, W.S.; Herring, G. General Chemistry, 8th Ed., 2001
Silberberg, M.S. Chemistry, 3rd Ed., 2003
Zumdahl, S.S.; Zumdahl, S. Chemistry, 2000

NEW

Pauling, L. General Chemistry, 3rd Ed., 1970
Chang, R. Chemistry, 7th Ed., 2001
Pertucci, R.H.; Harwood, W.S.; Herring, G. General Chemistry, 8th Ed., 2001
Silberberg, M.S. Chemistry, 3rd Ed., 2003
Zumdahl, S.S.; Zumdahl, S. Chemistry, 2000

9. Tenure Track Faculty qualified to teach this course.

Simone Aloisio, Blake Gillespie, Phil Hampton

10. Requested Effective Date or First Semester offered: **Fall 2010**

11. New Resource Requested: Yes No
If YES, list the resources needed.

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

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

C. Facility/Space/Transportation Needs:

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

E. Other.

12. **Indicate Changes and Justification for Each.** [Check all that apply and follow with justification. Be as brief as possible but, use as much space as necessary.]

- | | |
|---|--|
| <input type="checkbox"/> Course title | <input type="checkbox"/> Course Content |
| <input type="checkbox"/> Prefix/suffix | <input type="checkbox"/> Course Learning Objectives |
| <input type="checkbox"/> Course number | <input type="checkbox"/> References |
| <input type="checkbox"/> Units | <input type="checkbox"/> GE |
| <input type="checkbox"/> Staffing formula and enrollment limits | <input checked="" type="checkbox"/> Other Grading |
| <input checked="" type="checkbox"/> Prerequisites/Corequisites | <input type="checkbox"/> Reactivate Course |
| <input type="checkbox"/> Catalog description | |
| <input checked="" type="checkbox"/> Mode of Instruction | |

Justification: The department met and decided that credit/no-credit was a more appropriate grading scheme for this type of course. Students typically either did the work required or did not. Also, the mode of instruction and pre-requisite were incorrectly listed in the original course proposal. We have also taught it as a one-hour course, and have always had a co-requisite, not a pre-requisite.

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 5, 2009** of preceding year.

Priority deadline for Course Proposals and Modifications: **November 2, 2009**.

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

Simone Aloisio

9/29/2009

Proposer(s) of Course Modification

Date

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

Approval Sheet

Course:

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.

Program Chair		
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Signature

Date

Program Chair		
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Signature

Date

Program Chair		
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Signature

Date

General Education Chair		
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Signature

Date

Center for Intl Affairs Director		
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Signature

Date

Center for Integrative Studies Director		
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Signature

Date

Center for Multicultural Engagement Director		
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Signature

Date

Center for Civic Engagement and Service Learning Director		
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Signature

Date

Curriculum Chair		
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Signature

Date

Dean of Faculty		
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Signature

Date