

**CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS**

**COURSE MODIFICATION PROPOSAL**

**Courses must be submitted by November 9, 2007, to make the next catalog production**

DATE (CHANGE DATE IF REVISED): 11.15.07

PROGRAM AREA(S): EDUCATION--SINGLE SUBJECT TEACHING CREDENTIAL PROGRAM

**1. Catalog Description of the Course.** *[Follow accepted catalog format.]*  
*(If Cross-listed please submit prefixes for each discipline being modified)*

**OLD**

Prefix EDSS Course# 542 Title Teaching Life/Physical/Geo-  
 Science in Secondary Schools Units (3)  
 3 hours lecture per week  
 hours blank per week

- Prerequisites: Admission to the Single Subject Credential Program
- Corequisites: EDSS 580 (1-2 units) or EDSS 585

Description (Do not use any symbols):  
 A study of the content, methodology, materials and current research in teaching high school science courses. Focuses on methods, curriculum design, and technology use specific to teaching science courses in grades 9-12. Emphasizes reflective practice based on California Standards for the Teaching Profession and the use and alignment of curricula to the Academic Content Standards for California Public Schools. Includes an emphasis on teaching in multicultural, multilingual and inclusive classrooms.

- |  |   |            |  |   |  |  |
|--|---|------------|--|---|--|--|
| <input type="checkbox"/> Gen Ed Categories                             | <input type="checkbox"/> Lab Fee Required | Hegis Code | Graded<br><input type="checkbox"/> CR/NC   | <input type="checkbox"/> Repeatable for up to | <input checked="" type="checkbox"/> A - F units  | <input type="checkbox"/> Multiple Enrollment in (Student's same semester choice) |
| <input type="checkbox"/> Mission Based Learning Objectives:            |   |            | <input type="checkbox"/> Interdisciplinary | <input type="checkbox"/> International        | <input type="checkbox"/> Multicultural   | <input type="checkbox"/> Service Learning  |
| <input type="checkbox"/> American Institutions, Title V Section 40404: |   |            | <input type="checkbox"/> Government        | <input type="checkbox"/> US Constitution      | <input type="checkbox"/> US History (Refer to EO 405, for more information at: <a href="http://senate.csuci.edu/comm/curriculum/resources.htm">http://senate.csuci.edu/comm/curriculum/resources.htm</a> ) |  |
| <input type="checkbox"/> Service Learning Course                       |   |            |  |   |  |  |

**NEW**

Prefix EDSS Course# 542 Title Teaching Science in High  
 Schools Units (4)  
 4 hours lecture per week  
 hours blank per week

- Prerequisites: Admission to the Single Subject Credential Program
- Corequisites: EDSS 570, EDSS 580, EDSS 575, or EDSS 585

Description:  
 A study of the content, methodology, materials and current research in teaching high school science courses. Focuses on methods, curriculum design, LITERACY and technology use specific to teaching science courses in grades 9-12. Emphasizes reflective practice based on California TEACHER PERFORMANCE EXPECTATIONS and the use and alignment of curricula to the Academic Content Standards for California Public Schools. EMPHASIZES teaching in multicultural, multilingual and inclusive classrooms.

- |  |   |            |  |   |  |   |
|--|---|------------|--|---|--|---|
| <input type="checkbox"/> Gen Ed Categories                             | <input type="checkbox"/> Lab Fee Required | Hegis Code | Graded<br><input type="checkbox"/> CR/NC   | <input type="checkbox"/> Repeatable for up to | <input checked="" type="checkbox"/> A - F units  | <input type="checkbox"/> Multiple Enrollment in same semester choice) |
| <input type="checkbox"/> Mission Based Learning Objectives:            |   |            | <input type="checkbox"/> Interdisciplinary | <input type="checkbox"/> International        | <input type="checkbox"/> Multicultural   | <input type="checkbox"/> Service Learning                             |
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| <input type="checkbox"/> Service Learning Course                       |   |            |  |   |  |   |

**2. Mode of instruction (Hours per Unit are set for you)**

	<u>Existing</u>				<u>Proposed</u>				
	Units	Hour Per Unit	Benchmark Enrollment	CS# Units (filled out by Dean)	Units	Hour Per Unit	Benchmark Enrollment	CS# Units (filled out by Dean)	
Lecture	<u>3</u>	<u>1</u>	<u>20</u>	_____	Lecture	<u>4</u>	<u>1</u>	<u>20</u>	_____
Seminar	_____	<u>1</u>	_____	_____	Seminar	_____	<u>1</u>	_____	_____
Laboratory	_____	<u>3</u>	_____	_____	Laboratory	_____	<u>3</u>	_____	_____
Activity	_____	<u>2</u>	_____	_____	Activity	_____	<u>2</u>	_____	_____
Field Studies	_____	_____	_____	_____	Activity	_____	<u>2</u>	_____	_____
Indep Study	_____	_____	_____	_____	Activity	_____	<u>2</u>	_____	_____
Other blank	_____	_____	_____	_____	Activity	_____	<u>2</u>	_____	_____

**3. Course Content in Outline Form if Being Changed.** *[Be as brief as possible, but use as much space as necessary]*

**OLD**

- 1.0 Students will define science as the process of inquiry, particularly the systematic search for patterns; define technology as the use of tools; and note the interactions of science, technology, and society.
- 1.1 Analysis of examples and definitions
- 1.2 Science, technology, and society linkages
- 2.0 Students will demonstrate proficiency in performance of both the basic and integrated science process skills as ingredients of scientific inquiry.
- 2.1 Observing, inferring, classifying, measuring, communicating, and predicting
- 2.2 Hypothesizing, collecting and analyzing data, experimenting
- 2.3 Critiquing of investigations
- 3.0 Students will analyze the learning and memory mechanisms which affect the learning of science in multicultural and multilingual contexts.
- 3.1 Research on learning and memory models
- 3.2 Blocks to learning science
- 3.3 Impact of pre-instructional knowledge
- 3.4 Developmental and cultural concerns
- 3.5 Consideration of unifying and major conceptual themes in science
- 4.0 Students will inquire into learning processes and individual learning needs to acquire techniques for promoting meaningful science learning.
- 4.1 Research and practice based teaching strategies
- 4.2 Questioning techniques
- 4.3 Investigations
- 4.4 Cooperative learning
- 4.5 Authentic assessment
- 4.6 Safety considerations
- 5.0 Students will analyze, synthesize, and evaluate current science education reform initiatives.
- 5.1 International and national perspectives
- 5.2 State and local perspectives
- 6.0 Students will explore resources and networks which enhance the teaching and learning of science.
- 6.1 People resources
- 6.2 Material and media resources
- 6.3 Informal and formal learning settings
- 6.4 Professional journals and conferences
- 7.0 Students will infuse technology into their science teaching
- 8.0 Students will design engaging lessons and assessments aligned to the California State Academic Content Standards and National Science Education Standards

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- 3.0 Students will analyze the learning and memory mechanisms which affect the learning of science in multicultural and multilingual contexts.
- 4.0 Students will inquire into LITERACY AND learning processes and individual learning needs to acquire techniques for promoting meaningful science learning.
- 5.0 Students will analyze, synthesize, and evaluate current science education reform initiatives.
- 6.0 Students will explore resources and networks which enhance the teaching and learning of science.
- 7.0 Students will infuse technology into their science teaching
- 8.0 Students will design engaging lessons and assessments aligned to the California State Academic Content Standards and National Science Education Standards
- ADD:**
- \*9.0 STUDENTS WILL STUDY HOW LITERACY DEVELOPS AND APPLY THIS KNOWLEDGE TO TEACHING SCIENCE READING AND WRITING TASKS
- \*10.0 STUDENTS WILL DEVELOP DIAGNOSTIC AND FORMATIVE ASSESSMENTS TO MEASURE LITERACY AS APPLIED TO SCIENCE
- \*11.0 STUDENTS WILL APPLY LITERACY KNOWLEDGE TO PRACTICAL TECHNIQUES FOR INCREASING SCIENCE READING AND VOCABULARY COMPREHENSION
- \*12.0 STUDENTS WILL ANALYZE SECONDARY SCIENCE TEXTBOOKS AND CONSIDER ADAPTATIONS FOR ALL LEARNERS

**4. Justification and Learning Objectives for the Course.** (Indicate whether required or elective, and whether it meets University Writing, and/or Language requirements) *[Use as much space as necessary]*

**OLD**

Required Course for students seeking a Single Subject Credential in Science.  
Students who successfully complete this course will be able to:

1. define science as the process of inquiry, particularly the systematic search for patterns; define technology as the use of tools; and note the interactions of science, technology, and society.

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Required Course for students seeking a Single Subject Credential in Science.  
Students who successfully complete this course will be able to:

1. define science as the process of inquiry, particularly the systematic search for patterns; define technology as the use of tools; and note the interactions of science, technology, and society.

2. demonstrate proficiency in performance of both the basic and integrated science process skills as ingredients of scientific inquiry.
3. analyze the learning and memory mechanisms which affect the learning of science in multicultural, multilingual, and inclusive contexts.
4. inquire into learning processes and individual learning needs to acquire techniques for promoting meaningful science learning.
5. analyze, synthesize, and evaluate current science education reform initiatives.
6. explore resources and networks which enhance the teaching and learning of science.
7. infuse technology into their science teaching
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ADD:

\*DEVELOP READING AND WRITING ACTIVITIES SO THAT STUDENTS OF VARIED LITERACY BACKGROUNDS HAVE ACCESS TO A VARIETY OF TEXTS.

\*USE A WIDE VARIETY OF STRATEGIES TO HELP STUDENTS ACCESS SCIENCE TEXTS

\*INTEGRATE LITERACY ACTIVITIES INTO SCIENCE INSTRUCTION TO FACILITATE STUDENTS' LEARNING SCIENCE CONTENT WHILE AT THE SAME TIME GROWING AS READERS AND WRITERS.

\*DEVELOP METHODS FOR DIAGNOSING STUDENTS' LITERACY SKILLS IN SCIENCE

\*ASSESS THE APPROPRIATENESS OF READING MATERIALS FOR SCIENCE STUDENTS

**5. References.** *[Provide 3-5 references on which this course is based and/or support it.]*

**OLD**

- Chiapetta, E.L. & Koballa, T.R. (2002). *Science instruction in the middle and secondary schools*. Upper River Saddle, NJ: Merrill.
- Koballa, T.R. & Tippins, D. J. (2000). *Cases in middle and secondary science education*. Upper River Saddle, NJ: Merrill.
- Layman, J. W. (1996). *Inquiry and learning: Realizing science standards in the classroom*. New York, NY: The College Board.
- National Research Council. (1996). *The National Science Education Standards*. Washington DC: National Academy Press.
- Trowbridge, L.W., Bybee, R.W., & Powell, J.C. (2000). *Teaching secondary school science*. Upper River Saddle, NJ: Merrill

**NEW**

- Chiapetta, E.L. & Koballa, T.R. (2002). *Science instruction in the middle and secondary schools*. Upper River Saddle, NJ: Merrill.
- Koballa, T.R. & Tippins, D. J. (2000). *Cases in middle and secondary science education*. Upper River Saddle, NJ: Merrill.
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- Trowbridge, L.W., Bybee, R.W., & Powell, J.C. (2000). *Teaching secondary school science*. Upper River Saddle, NJ: Merrill
- Content area reading and learning : instructional strategies/Eds. Diane Lapp, James Flood, Nancy Farnan. Mahwah, N.J.: Lawrence Erlbaum, 2004.
- Content Area Reading: Literacy and Learning Across the Curriculum (8th Edition) by Richard T. Vacca, Jo Anne L. Vacca. Pearson Allyn & Bacon, 2005.

**6. 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.]

- Course title
- Prefix/suffix
- Course number
- Units
- Staffing formula and enrollment limits
- Prerequisites/corequisites
- Catalog description
- Course content
- References
- GE
- Other Learning Objectives

**Justification:** Course title is changed to better reflect the grade/content level specificity of the course. The corequisites have been updated to better reflect the variety of field placements students may take due to either full or part-time status. Units, catalog description, course content, learning outcomes, and references have been changed to reflect the integration of content area literacy into this course. This change is supported by current teacher education research that supports literacy instruction be closely aligned to teaching methods in the content area.

**7.  General Education Categories:** All courses with GE categories notations (including deletions) must be processed at 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)**

- 

**UD Interdisciplinary**

- 

**8. New Resources Required. YES  NO**

If YES, list the resources needed and obtain signatures from the appropriate programs/units on the consultation sheet below.

- a. Computer (data processing), audio visual, broadcasting needs, other equipment
- b. Library needs
- c. Facility/space needs

**9. Will this course modification alter any degree, credential, certificate, or minor in your program? YES  NO**

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

**10. Effective Date (Semester and Year – all modifications submitted prior to November 9<sup>th</sup> will be effective in the Fall 2008 catalog): FALL 2008**

Jeanne M. Grier

Proposer of Course Modification

10/15/2007

Date

## Approvals

Program/Course:

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Program Chair(s)

Date

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General Education Chair(s)

Date

---

Curriculum Committee Chair(s)

Date

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Dean of Faculty

Date