CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

NEW COURSE PROPOSAL

PROGRAM: SINGLE SUBJECT TEACHER CREDENTIAL PROGRAM

1. **Catalog Description of the Course.** *[Include the course prefix, number, full title, and units. Provide a course narrative including prerequisites and corequisites. If any of the following apply, include in the description: Repeatability (May be repeated to a maximum of ___ units); time distribution (Lecture ___ hours, laboratory ___ hours); non-traditional grading system (Graded CR/NC, ABC/NC). Follow accepted catalog format.]*

EDSS 542. TEACHING LIFE/PHYSICAL/GEO-SCIENCE IN SECONDARY SCHOOLS (3)
Prerequisite: Admission to the Single Subject Credential Program.
Corequisite: EDSS 580 (1-2 units): or EDSS 585
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.

2. **Mode of Instruction.**

	Units	**Hours per Unit**	**Benchmark Enrollment**
Lecture	3	1	20
Seminar			
Laboratory			
Activity			

3. **Justification and Learning Objectives for the Course.** (Indicate whether required or elective, and whether it meets University Writing, and/or Language requirements)

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
8. design engaging lessons and assessments aligned to the California State Academic Content Standards and National Science Education Standards

4. **Is this a General Education Course** **YES** **NO**
If Yes, indicate GE category:

A (English Language, Communication, Critical Thinking)	
B (Mathematics & Sciences)	
C (Fine Arts, Literature, Languages & Cultures)	

D (Social Perspectives)	
E (Human Psychological and Physiological Perspectives)	

5. Course Content in Outline Form. *[Be as brief as possible, but use as much space as necessary]*

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

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

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

7. List Faculty Qualified to Teach This Course.

Secondary Science Education Faculty

8. Frequency.

a. Projected semesters to be offered: Fall __X___ Spring __X___ Summer __X___

9. New Resources Required.

Library Resourses
Laboratory Resources

10. Consultation.
Attach consultation sheet from all program areas, Library, and others (if necessary)

11. If this new course will alter any degree, credential, certificate, or minor in your program, attach a program modification. N/A

Dr Jeanne Grier in consultation with Dr. Bob Bleicher 9 January, 2003
Proposers of Course Date: