CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

COURSE MODIFICATION PROPOSAL

Courses must be submitted by November 3, 2008, to make the next catalog (2009-2010) production

DATE (CHANGE DATE EACH TIME REVISED): 10-9-08 REV 11.17.08

PROGRAM AREA(S) : BIOLOGY

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

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1. Course Information.

[Follow accepted catalog format.] ***(Add additional prefixes i f cross-listed)***

OLD

Prefix BIOL Course# 510 Title : TISSUE CULTURE TECHNIQUES AND STEM CELL TECHNOLOGY Units (3)
1 hours lecture per week
6 hours laboratory per week

x Prerequisites: BIOL 300
Consent of Instructor Required for Enrollment
Corequisites:

Catalog Description (Do not use any symbols): Examines theory and concepts of animal and plant cell and tissue culturing. Focuses on stem cell technology including types of stem cells, ethics of stem cells, pluripotency, culture methods, characterization, monitoring tools such as imaging and differentiation strategies.

General Education Categories
x Lab Fee Requested

Graded
CR/NC
x A - F

Repeatable for up to units
Total Completions

Course Level:
Undergraduate
Post-bac/Credential
x Graduate

Optional (Student's choice)

Multiple Enrollment in same semester

NEW

Prefix BIOL Course# 510 Title : TISSUE CULTURE TECHNIQUES AND STEM CELL TECHNOLOGY Units (3)
1 hours lecture per week
6 hours laboratory per week

x Prerequisites: BIOL 504
Consent of Instructor Required for Enrollment
Corequisites:

Catalog Description (Do not use any symbols)**:** Examines theory and concepts of animal and plant cell and tissue culturing. Focuses on stem cell technology including types of stem cells, ethics of stem cells, pluripotency, culture methods, characterization, monitoring tools such as imaging and differentiation strategies.

General Education Categories
Lab Fee Requested

Graded
CR/NC
x A - F

Repeatable for up to units
Total Completions 2

Course Level:
Undergraduate
Post-bac/Credential
x Graduate

Optional (Student's choice)

Multiple Enrollment in same semester

2. Mode of Instruction (Hours per Unit are defaulted) **Hegis Code(s)**_____
(Provided by the Dean)

Existing

	Units	Hours Per Unit	Benchmark Enrollment	Graded
Lecture	1	1	20	X
Seminar		1		
Lab	2	3	20	
Activity		2		
Field Studies				
Indep Study				
Other blank				

Proposed

	Units	Hours Per Unit	Benchmark Enrollment	Graded	CS No. (filled out by Dean)
Lecture	1	1	20	X	
Seminar		1			
Lab	2	3	20	X	
Activity		2			
Field Studies					
Indep Study					
Other blank					

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

Tissue Culture Techniques and Stem Cell Technology is a required course for the MS/MBA dual degree program. This course will provide students with a solid foundation in the theory and techniques of animal and plant tissue culture and an in-depth view of the current state of the science of human embryonic stem cells and their potential applications in regenerative medicine.

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

NEW

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

Submit Program Modification if this course changes your program.

5. Learning Objectives. (List in numerical order)

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

OLD

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

1. Grow, maintain, and propagate specific animal and plant cell types in a sterile environment.
2. Identify the problems associated with growing, storing and identifying a wide range of different cell types and plant tissues.
3. Describe how cell culture can be used for in vitro studies and commercial applications.
4. Articulate the conceptual basis and ethicall issues surrounding stem cell research.
5. Demonstrate embryonic stem cell propogation

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5. Demonstrate embryonic stem cell propogation

methods.

methods.

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

OLD

Animal and Plant tissue culture

1. Various systems of tissue culture - their distinguishing features, advantages and limitations; types of media; types of cell lines and their maintenance; transfection strategies
2. Methodology: Primary culture; adherent and suspension cultures; maintenance of sterility and use of antibiotics; mycoplasma and contaminant detection; plant culture techniques such as micropropagation and callus cultures.
3. Characteristics of cells in culture and growth studies (Cell proliferation, cell cycle, mitosis).

Stem Cell Technology

1. Ethics - What are the pros and cons of using human embryonic stem cells vs. adult stem cells?
2. Culture methods - Description of the different culture methods.
3. Characterization and Differentiation - Includes the use of flow cytometry and immunocytochemistry and identification of differentiated tissues; strategies for differentiation; concept of pluripotency
4. New monitoring tools - Imaging and identifying stem cell morphology and cell numbers

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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.

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

1. Culture of Animal Cells: A Manual of Basic Technique, 4th Edition, 2000. R. Ian Freshney, ISBN: 0471348899 Publisher: Wiley-Liss
2. Basic Cell Culture (The Practical Approach Series), 2002. J. M. Davis, ISBN: 0199638535, Publisher: Oxford University Press, USA
3. Plant Tissue Culture: Techniques and Experiments, 2nd edition, 2000. Roberta H. Smith, ISBN: 0126503427 Publisher: Academic Press
4. Introduction to Plant Tissue Culture, M. K. Razdan. ISBN: 1578082374, Publisher: Science Publishers, Inc.
5. Embryonic Stem Cells, Methods and Protocols, by Kursad Turksen (Ottawa Health Research Institute, Ottawa, Ontario, Canada), Humana Press.
6. Human Embryonic Stem Cells, Second Edition, by Ann A. Kiesling and Scott C. Anderson

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9. Tenure Track Faculty qualified to teach this course.
Biology faculty

10. Requested Effective Date or First Semester offered: S09

11. New Resource Requested: Yes ☐ **No** x
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.]*

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

Justification: BIOL 510 has been offered several times and our assessment of the course indicates that this course requires a higher level of background knowledge and skills in cell and molecular biology in order for students to complete the course successfully. Consequently, we would like to list BIOL 504 as a prerequisite for this course to replace BIOL 300, which is a prerequisite for BIOL504.

13. Will this course modification alter any degree, credential, certificate, or minor in your program? Yes ☐ **No** x
If, YES attach a program update or program modification form for all programs affected.
Priority deadline for New Minors and Programs: October 6, 2008 of preceding year.
Priority deadline for Course Proposals and Modifications: November 3, 2008.
Last day to submit forms to be considered during the current academic year: April 15th.

Ching-Hua Wang — 10-9-08

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		
	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
Dean of Faculty		
	Signature	Date