

CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

NEW COURSE PROPOSAL

PROGRAM AREA _____

- 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.]*

BIOL 300 CELL PHYSIOLOGY (4)

Three hours of lecture and three hours of laboratory per week.

Prerequisites: CHEM 122; CHEM 311 and 312 or concurrent enrollment; BIOL 201 with a grade of C or better.

Detailed study of the organization and functioning of cells and cellular organelles at the cellular and molecular levels, emphasizing experimental approaches and structural and functional relationships and their regulation and control. Topics include macromolecules, membrane phenomena, metabolism, enzyme kinetics, and cellular events associated with excitable cells and tissues. A lab fee is required.

- 2. Mode of Instruction.**

	Units	Hours per Unit	Benchmark Enrollment
Lecture	__3__	__1__	__24__
Seminar	_____	_____	_____
Laboratory	__1__	__3__	__24__
Activity	_____	_____	_____

- 3. 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]*

This is an upper-division required course for students majoring in Biology. It is a detailed study of the organization and functioning of cells and cellular organelles at the cellular and molecular levels, emphasizing experimental approaches and structural and functional relationships and their regulation and control.

Students completing this class should be equipped with the knowledge and skills to:

1. Describe cytological, biochemical, physiological and genetic aspects of the cell, including cellular processes common to all cells, to all eucaryotic cells as well as processes in certain specialized cells.
2. Relate normal cellular structures to their functions.
3. Explain cellular processes and mechanisms that lead to physiological functions as well as examples of pathological state.
4. Apply modern cellular techniques to solve aspects of scientific problems.
5. Describe the intricate relationship between various cellular structures and their corresponding functions.

- 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]

Macromolecules of the Cell

Enzyme Kinetics and Regulation
Cell Membrane
Cellular Interaction and Cell Signaling
Cytoskeleton
Endomembrane Systems
Bioenergetics
The Nucleus and Chromosomes
Cell Cycle and DNA Replication
Cell Division
Transcription and Translation
Specialized Cells

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

1. *Essential Cell Biology*, Alberts, et al., Garland Pub, 2002
2. *The World of the Cell*, Becker, et al., Benjamin Cummings, 2000
3. *Molecular and Cellular Biology*, Stephen L. Wolfe, Wadsworth, 1993

7. List Faculty Qualified to Teach This Course.

Biology faculty members

8. Frequency.

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

9. New Resources Required.

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

Biology teaching laboratory with standard laboratory equipment and supplies.

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.

Ching-Hua Wang	1-3-03	
Proposer of Course	Date	