CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

NEW COURSE PROPOSAL

PROGRAM AREA _____BIOLOGY_____

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 508 ADVANCED IMMUNOLOGY (4)
Three hours of lecture and three hours of laboratory per week.
Prerequisites: BIOL 300 or permission of instructor
This course will examine cellular and molecular aspects of the immune system. Topics include: molecular genetics and molecular structure of immunoglobulin, T cell receptor, and the MHC antigens; the functions and dysfunctions of the components of the immune system; applications of immunological technologies in modern scientific research and development.

2. **Mode of Instruction.**

	Units	**Hours per Unit**	**Benchmark Enrollment**
Lecture	____3____	_____1___	____15____
Seminar	_____	_____	_____
Laboratory	____1____	___3_____	____15____
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]*

Advanced immunology is an elective course for graduate students in the Professional Master of Science Degree Program in Bioinformatics.

Students who successfully complete this course will be able to:

- Describe the relationship between major cellular and molecular components of the immune system
- Explain the molecular control mechanisms involved in immunoglobulin gene arrangement
- Explain how therapeutic antibodies can be "engineered"
- Apply immunologic techniques to solve certain clinical and research problems

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

A (English Language, Communication, Critical Thinking)	
B (Life 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. Mechanism and control of immunoglobulin gene rearrangement
2. T cell antigen receptor genes

3. T lymphocyte signal transduction
4. Structure and function of MHC class I and class II antigens
5. Molecular mechanisms of antigen processing
6. B cell activation
7. Advances in antibody engineering
8. The complement system

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

Abbas, Lichtman, and Pober. (2003). *Cellular and Molecular Immunology*, 5th edition. W B Saunders.
Austyn, Wood and Austyn. (1994). *Principles of Cellular and Molecular Immunology*. Oxford University Press.
Hames and Glover. (1996). *Molecular Immunology, 2nd edition*. Oxford University Press

7. List Faculty Qualified to Teach This Course.
Dr. Ching Hua-Wang

8. Frequency.
a. Projected semesters to be offered: Fall __x___ Spring _____ Summer _____

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

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.

___Nancy Mozingo_____31 October 2003_____
Proposer of Course Date