1. Course Information.

[Follow accepted catalog format.] (Add additional prefixes if cross-listed)

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefix BIOL</td>
<td>Course# 508</td>
</tr>
<tr>
<td>Units (4)</td>
<td>3 hours lecture per week</td>
</tr>
<tr>
<td>x Prerequisites: BIOL 300 or permission of instructor</td>
<td>x Prerequisites: BIOL 504</td>
</tr>
<tr>
<td>x Corequisites:</td>
<td>x Corequisites:</td>
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</tbody>
</table>

Catalog Description (Do not use any symbols): 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.

Catalog Description (Do not use any symbols): Examines 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 (Hours per Unit are defaulted)

<table>
<thead>
<tr>
<th>Existing</th>
<th>Proposed</th>
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<tbody>
<tr>
<td></td>
<td>Hegis Code(s) (Provided by the Dean)</td>
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<tr>
<td>Lecture</td>
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<tr>
<td>Seminar</td>
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<tr>
<td>Lab</td>
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<tr>
<td>Activity</td>
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<tr>
<td>Field Studies</td>
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<tr>
<td>Indep Study</td>
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<td>Other blank</td>
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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
Advanced immunology is an elective course for graduate students in the Professional Master of Science Degree Program in Biotechnology and Bioinformatics.

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

Submit Program Modification if this course changes your program.

5. Learning Objectives. (List in numerical order. You may wish to visit resource information at the following website: http://senate.csuci.edu/comm/curriculum/resources.htm)

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

OLD
• 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

NEW
Describe and analyze the relationship between major cellular and molecular components of the immune system
• Explain and compare the molecular control mechanisms involved in immunoglobulin gene arrangement
• Demonstrate how therapeutic antibodies can be “engineered”
• Apply immunologic techniques to solve certain clinical and research problems

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

OLD
1. Mechanism and control of immunoglobulin gene rearrangement
   2. T cell antigen receptor genes

NEW
1. Mechanism and control of immunoglobulin gene rearrangement
   2. T cell antigen receptor genes
Does this course content overlap with a course offered in your academic program? Yes ☐ No ☑
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 ☑
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

NEW
The Immune System by Peter Parham, Publisher: Garland Science; 3 edition (January 19, 2009) ISBN-10: 0815341466

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

10. Requested Effective Date or First Semester offered: Summer 2010

11. New Resource Requested: Yes ☐ No ☑
    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 Content
   Course Learning Objectives
Justification: Since BIOL 504 is a foundation course for the MS Biotechnology and Bioinformatics program, students are advised to take BIOL 504 early on during their program of study and then take other required and elective courses. However, in the last few years of offering the program, we realized that some students have postponed taking BIOL 504, sometimes to the last term. To make sure students complete their foundation course first, BIOL 504 is included as a prerequisite course for BIOL 508, which requires the knowledge of 504 for students to succeed. References for the course is updated. The enrollment cap is raised from 15 to 20 to allow access of the course for more students and their time to graduation. Due to its lab requirement, the maximum enrollment is 20.

13. Will this course modification alter any degree, credential, certificate, or minor in your program? Yes ☐ No ☒

If YES attach a program update or program modification form for all programs affected.
Priority deadline for New Minors and Programs: October 5, 2009 of preceding year.
Priority deadline for Course Proposals and Modifications: November 2, 2009.
Last day to submit forms to be considered during the current academic year: April 15th.

Ching-Hua Wang 10-15-09

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.

<table>
<thead>
<tr>
<th>Chair Name</th>
<th>Signature</th>
<th>Date</th>
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<tbody>
<tr>
<td>Program Chair</td>
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<tr>
<td>Program Chair</td>
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<td>General Education Chair</td>
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<td>Center for Intl Affairs Director</td>
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<td>Center for Integrative Studies Director</td>
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<td>Center for Multicultural Engagement Director</td>
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<td>Center for Civic Engagement and Service Learning Director</td>
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<tr>
<td>Curriculum Chair</td>
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<tr>
<td>Dean of Faculty</td>
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