

NEW COURSE PROPOSAL**Courses must be submitted by November 2, 2009, for priority catalog review.**DATE (*Change if modified and redate file with current date*)

10-1-09; REV 12.7.09

PROGRAM AREA(S)

BIOLOGY

1. Course Information. *[Follow accepted catalog format.]***Prefix(es)** (Add additional prefixes if cross-listed) **and Course No. BIOL 604****Title: Biotechnology Across National Boundaries Units: 2**

Prerequisites

Corequisites

x Consent of Instructor Required for Enrollment

Catalog Description (Do not use any symbols): Addresses international efforts in biotechnological innovation, education, global commercialization and impact of biotechnology. Explores collaborations among science, education, industry and government in the age of globalization, ethical standards, international law and regulation in biotechnology and inter- and cross-cultural issues in business operations. An optional element of this course is a field trip to international businesses and education systems.

Grading Scheme:

x A-F Grades

Credit/No Credit

Optional (Student Choice)

Repeatability:

Repeatable for a maximum of units

Total Completions Allowed

Multiple Enrollment in Same Semester

Course Level Information:

Undergraduate

Post-Baccalaureate/Credential

x Graduate

Mode of Instruction/Components (*Hours per Unit are defaulted*).

| | Units | Hours per Unit | Benchmark Enrollment | Graded Component | CS & HEGIS # (Filled in by the Dean) |
|------------------|--------------|-------------------------------|---------------------------------|-----------------------------|--|
| Lecture | 2 | 1 | 20 | x | |
| Seminar | | 1 | | | |
| Laboratory | | 3 | | | |
| Activity | | 2 | | | |
| Field Studies | | | | | |
| Indep Study | | | | | |
| Other Blank | | | | | |

Leave the following hours per week areas blank. The hours per week will be filled out for you.

2 hours **lecture** per week

hours blank per week

2. 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).

3. Justification and Requirements for the Course. (Make a brief statement to justify the need for the course)

A. **Justification:** BIOL 604 is a required course for the program. As witnessed by all, the world is changing and changing fast. Today, every educated person needs to be literate in world affairs. To emphasize the importance of internationalism in the program and to make our students globally competitive when they graduate from the program, intentional efforts are made to include international contents and experiences in the curriculum. BIOL 604, Biotechnology across National Boundaries, addresses this important need in the curriculum of our MS Biotechnology program. The course also offers an optional field trip for students to international businesses and education systems. The reason that this is an option is due to affordability of travel costs. The Program will offer scholarships to help students with financial challenge to defray the costs of the trip.

B. Degree Requirement: ☒ Requirement for the Major/Minor
☐ Elective for the Major/Minor
☐ Free Elective

Note: Submit Program Modification if this course changes your program.

4. Learning Objectives. (List in numerical order. You may wish to use the following resource in utilizing measurable verbs: <http://senate.csuci.edu/comm/curriculum/resources.htm>)

Upon completion of the course, the student will be able to:
Describe the international efforts in biotechnological innovation
Summarize the impact of biotechnological innovations on medicine, agriculture and the environment
Demonstrate their understanding of progress of biotechnological innovations in the world
Explain and apply bioethical standards, international law and regulation in biotechnology
Identify and analyze inter- and cross-cultural issues in business operations
Engage in collaborations with colleagues in biotechnological effort in a global environment

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

International efforts in biotechnological innovation
Impact of biotechnological innovation on medicine
Impact of biotechnological innovation on agriculture
Impact of biotechnological innovation on the environment
Biotechnology and Africa
Biotechnology and Asia
Biotechnology in North America and Europe
Biotechnology in other parts of the world
Biotechnology education in the world
Global commercialization and impact of biotechnology
Collaborations among science, education, industry and government in the age of globalization
Bioethical standards, international law and regulation in biotechnology
Inter- and cross-cultural issues in business operations.
A field trip to international biotechnology businesses and education systems is an optional element of this course ☐

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.

6. 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).

List each cross-listed prefix for the course: ☐

B. Program responsible for staffing: Biology

7. References. *[Provide 3 - 5 references]*

BioEvolution: How Biotechnology is Changing Our World by Michael Fumento Publisher: Encounter Books; 1 edition, 2003, ISBN-10: 1893554759

Starved for Science: How Biotechnology Is Being Kept Out of Africa by Robert Paarlberg (Author), Norman Borlaug (Foreword), Jimmy Carter (Foreword) Publisher: Harvard University Press; 1 edition, 2009, ISBN-10: 0674033477

Enough: Why the World's Poorest Starve in an Age of Plenty by Roger Thurow and Scott Kilman, Publisher: PublicAffairs, 2009, ISBN-10: 1586485113

Bioscience Entrepreneurship In Asia: Creating Value with Biology by Paul S. Teng, Publisher: World Scientific Publishing Company, 2008, ISBN-10: 981270020X

The Politics of Biotechnology in North America and Europe: Policy Networks, Institutions and Internationalization Studies in Public Policy) by Yric Montpetit, Publisher: Lexington Books; 1 edition, 2006, ISBN-10: 0739112481

8. Tenure Track Faculty Qualified to Teach This Course.

Biology faculty

9. Requested Effective Date:

First semester offered: Spring 2012

10. New Resources 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 (please refer to Dean's Office for additional processing) **Yes** ☐ **No** ☒

E. Other ☐

11. Will this new course 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**, of preceding year.

Last day to submit forms to be considered during the current academic year: **April 15th**.

Ching-Hua Wang

10-6-09

Proposer of Course (Type in name. Signatures will be collected after Curriculum approval)

Date

Approval Sheet

Program/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 International Affairs Director | | |
| | Signature | Date |
| Center for Integrative Studies Director | | |
| | Signature | Date |
| Center for Multicultural Engagement Director | | |
| | Signature | Date |
| Center for Civic Engagement Director | | |
| | Signature | Date |
| Curriculum Chair | | |
| | Signature | Date |
| Dean of Faculty | | |
| | Signature | Date |