

California State University Channel Islands

Program Modification

Program modifications must be submitted by October 15, 2013, and finalized by the end of that fall semester for catalog production.

Enter data in **YELLOWED** areas.

Date (10/13/13): 2014 2015 Catalog Copy 8.26.13; rev 12.10.13

Program Area: **Biotechnology & Bioinformatics: Biotechnology Emphasis, M.S.**

Semester /Year First affected: FALL 2014

Instructions: Please use this Program Modification form for changes to existing program requirements, units, outcomes, emphases or options, or for other programmatic concerns. For minor changes (faculty or address changes, additions of approved electives, minor editing for clarity, and other minor updates) use the Program Update form, available at the Curriculum website.

Paste the latest approved version of your entire program in the left AND right boxes below. Make your deletions in the LEFT column by using the strikethrough feature in Word or underlining, and highlight. Insert new language or other changes to the program on the RIGHT and highlight in **YELLOW** for easy identification. If possible, please align the two columns so that changes appear side-by-side with the original text.

SUMMARY OF CHANGES

1. Replaced MGT 471 with BIOL 502 as core requirement. MGT 471 becomes an elective.
2. Added new courses BIOL 517, 518, 597 as electives.
3. Removed MGT 421 from electives.
4. Updated unit subtotals to reflect changes 1-3 above.
5. Replaced BIOL 504 with BINF 500 as GWAR course.

JUSTIFICATION

Currently the common MS Biotechnology course does not include a laboratory course. We believe that a molecular biology laboratory techniques course (BIOL 502) should be a required core element of a master's degree in biotechnology. MGT 421 removed as elective because we now have sufficient science-based electives appropriate for an MS in Biotechnology.

CURRENTLY APPROVED PROGRAM

**Biotechnology & Bioinformatics:
Biotechnology Emphasis, M.S.**

PROPOSED PROGRAM

**Biotechnology & Bioinformatics:
Biotechnology Emphasis, M.S.**

<p>(34-35 units)</p>	<p>(34-35 units)</p>	
<p>Degree Requirements</p> <hr/> <p>Common Core Courses - 12 units</p> <hr/> <ul style="list-style-type: none"> • BINF 500 - DNA and Protein Sequence Analysis Units: 3 • BIOL 503 - Biotechnology Law and Regulation Units: 3 • BIOL 504 - Molecular Cell Biology Units: 3 • MGT 471 - Project Management Units: 3 <p>Biotechnology Emphasis - 22 units</p> <hr/> <p>1. Required Courses - 15 units</p> <hr/> <ul style="list-style-type: none"> • BINF 514 - Statistical Methods in Computational Biology Units: 3 • BIOL 502 - Techniques in Genomics/Proteomics Units: 3 • BIOL 505 - Molecular Structure Units: 4 • BIOL 600 - Team Project Units: 4 • BIOL 601 - Seminar in Biotechnology and Bioinformatics Units: 1 <p>2. Electives - 7 Units</p> <hr/> <p><i>A minimum of two courses chosen from the following elective courses and/or from the required courses for the other emphases of the program:</i></p>	<p>Degree Requirements</p> <hr/> <p>Common Core Courses - 12 units</p> <hr/> <ul style="list-style-type: none"> • BINF 500 - DNA and Protein Sequence Analysis Units: 3 • BIOL 502 - Techniques in Genomics/Proteomics Units: 3 • BIOL 503 - Biotechnology Law and Regulation Units: 3 • BIOL 504 - Molecular Cell Biology Units: 3 <p>Biotechnology Emphasis – 22-23 units</p> <hr/> <p>1. Required Courses - 12 units</p> <hr/> <ul style="list-style-type: none"> • BINF 514 - Statistical Methods in Computational Biology Units: 3 • • BIOL 505 - Molecular Structure Units: 4 • BIOL 600 - Team Project Units: 4 • BIOL 601 - Seminar in Biotechnology and Bioinformatics Units: 1 <p>2. Electives – 10-11 Units</p> <hr/> <p><i>A minimum of three courses chosen from the following elective courses and/or from the required courses for the other emphases of the program:</i></p>	

- BIOL 500 - Introduction to Biopharmaceutical Production Operations **Units: 3**
- BIOL 507 - Pharmacogenomics and Pharmacoproteomics **Units: 3**
- BIOL 508 - Advanced Immunology **Units: 4**
- BIOL 509 - Plant Biotechnology **Units: 4**
- BIOL 516 - Clinical Trials and Quality Assurance **Units: 3**
- BIOL 590 - Special Topics in Biotechnology **Units: 3**
- BIOL 605 - Biotechnology Across National Boundaries Field Trip **Units: 1**
- MGT 421 – Human Resource Management **Units: 3**

Graduate Writing Assessment Requirement

Writing proficiency prior to the awarding of the degree is demonstrated by successful completion of BIOL 504 with a grade of B or higher.

Note:

*Courses with * are double-counted toward GE credits.*

- BIOL 500 - Introduction to Biopharmaceutical Production Operations **Units: 3**
- BIOL 507 - Pharmacogenomics and Pharmacoproteomics **Units: 3**
- BIOL 508 - Advanced Immunology **Units: 4**
- BIOL 509 - Plant Biotechnology **Units: 4**
- BIOL 516 - Clinical Trials and Quality Assurance **Units: 3**
- BIOL 517 – Mechanisms of Development **Units: 3**
- BIOL 518 – Advanced Topics in Cell & Molecular Biology **Units: 3**
- BIOL 590 - Special Topics in Biotechnology **Units: 3**
- BIOL 597 – Directed Research **Units: 1**
- BIOL 605 - Biotechnology Across National Boundaries Field Trip **Units: 1**
- MGT 471 – Project Management **Units: 3**

Graduate Writing Assessment Requirement

Writing proficiency prior to the awarding of the degree is demonstrated by successful completion of BINF 500 with a grade of B or higher.

Note:

*Courses with * are double-counted toward GE credits.*

Amy Denton

Date

APPROVAL SHEET

Program: BIOL

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.

The CI program review process includes a report from the respective department/program on its progress toward accessibility requirement compliance. By signing below, I acknowledge the importance of incorporating accessibility in course design.

Program Chair		
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Signature

Date

Curriculum Chair		
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Signature

Date

AVP		
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Signature

Date