

Biochemistry and Biotechnology, MS, Professional Science Emphasis Area

~~Professional Science Master's Emphasis~~

This track requires a total of 32 graduate credit hours, of which at least half must be at the 5000-level or above. Students take 21 credit hours of science courses (Biology and Chemistry) and 9 hours in business courses. In addition, each student is required to take 2 credit hours of either an on-campus practicum course or an off-campus internship.

Required Courses in Biology and Chemistry

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|-------------------------|--|--------------|
| CHEM 4722 | Advanced Biochemistry | 3 |
| CHEM 5722 | Advanced Graduate Biochemistry | 3 |
| CHEM 5774 | Bioinformatics | 3 |
| or BIOL 5436 | Applied Bioinformatics | |
| BIOL 6615 | Advanced Biotechnology Laboratory II | 4 |
| BIOL 6602 | Advanced Molecular Biology | 3 |
| or BIOL 6612 | Advanced Molecular Genetics of Bacteria | |
| or BIOL 6608 | Advanced Synthetic Biology | |
| BIOL 6889 | Graduate Seminar | 2 |

Required Internship or Practicum

2

Choose one of the following:

CHEM/BIOL 5798 Practicum in Science in Business

CHEM/BIOL 5799 Internship in Science in Business

Professional Science Business Electives

9

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| MGMT 3623 | Industrial and Organizational Psychology |
| BUS AD 5000 | Economics for Managers |
| BUS AD 5100 | Managerial Communication |
| MGMT 5600 | Managing People in Organizations |
| MKTG 5700 | Contemporary Marketing Concepts |
| BUS AD 5900 | Law, Ethics and Business |
| Elective Courses in Biology and Chemistry | |
| 6 | |

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| CHEM 4733 | Biochemistry Laboratory |
| CHEM 4764 | |
| CHEM 4772 | Physical Biochemistry |
| CHEM 5302 | Foundations of Physical Chemistry |
| CHEM 5694 | Special Topics in Organic Chemistry |
| CHEM 5772 | Advanced Physical Biochemistry |
| CHEM 5794 | Special Topics in Biochemistry |
| CHEM 6787 | Problem Seminar in Biochemistry ¹ |
| CHEM 6905 | Graduate Research in Chemistry ² |
| or BIOL 6905 | Graduate Research in Biology |
| BIOL 4842 | Immunobiology |
| BIOL 5012 | Advanced Genetics |
| BIOL 5069 | Topics in Cellular and Molecular Biology ¹ |
| BIOL 5099 | Biology Colloquium ¹ |
| BIOL 6602 | Advanced Molecular Biology |

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| BIOL 6608 | Advanced Synthetic Biology |
| BIOL 6612 | Advanced Molecular Genetics of Bacteria |
| BIOL 6622 | Advanced Cellular Basis of Disease |
| BIOL 6632 | Advanced Nucleic Acid Structure and Function |
| BIOL 6642 | Advanced Plant Biology and Biotechnology |
| BIOL 6652 | Advanced Virology |
| BIOL 6920 | Advanced Topics in Biology |
| Total Hours | 32 |

¹ Maximum of 2 credit hours between BIOL 5069, BIOL 5099 and CHEM 6787.

² Can be taken for up to 2 credit hours in either CHEM 6905 or BIOL 6905. Students must have a 3.0 GPA in non-research courses.

Sign-offs from other departments affected by this proposal

| Department | Contact Person | Phone # | Objections |
|------------|----------------|---------|------------|
| S002850 | Wendy Olivas | X6200 | No |
| S003000 | Keith Stine | x5436 | No |

Rationale We are updating course numbers, adding new elective options for additional student flexibility, and deleting courses that are no longer being offered (Biology 6612 is no longer being offered, so it is being replaced with Biology 6608).