

# Biochemistry and Biotechnology MS, Professional 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

|              |                                      |   |
|--------------|--------------------------------------|---|
| 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 6608 | Advanced Synthetic Biology           |   |
| BIOL 6889    | Graduate Seminar                     | 2 |

## Required Internship or Practicum 2

Choose one of the following:

CHEM/BIOL 5798

CHEM/BIOL 5799

## Professional Science Business Electives 9

|             |  |
|-------------|--|
| 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

|              |   |
|--------------|---|
| CHEM 4733    | Biochemistry Laboratory                               |
| 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 <sup>1</sup>          |
| CHEM 6905    | Graduate Research in Chemistry <sup>2</sup>           |
| or BIOL 6905 | Graduate Research in Biology                          |
| BIOL 4842    | Immunobiology   |
| BIOL 5012    | Advanced Genetics                                     |
| BIOL 5069    | Topics in Cellular and Molecular Biology <sup>1</sup> |
| BIOL 5099    | Biology Colloquium <sup>1</sup>                       |
| BIOL 6602    | Advanced Molecular Biology                            |
| BIOL 6608    | Advanced Synthetic Biology                            |
| 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**

<sup>1</sup> Maximum of 2 credit hours between BIOL 5069, BIOL 5099 and CHEM 6787.

<sup>2</sup> 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.