

# BIOCHEMISTRY AND MOLECULAR BIOLOGY, MS

**Requirements for Students Matriculating in or before Academic Year 2023-2024.** Learn more about Graduate College Academic Regulation 7.0 (<http://catalog.okstate.edu/graduate-college/#70>).

## Thesis Option

**Total Hours: 30**

| Code                                                                                                                           | Title                                                                        | Hours     |
|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-----------|
| <b>Coursework</b>                                                                                                              |                                                                              |           |
| Combination of core courses and other requirements to equal 24 hours.                                                          |                                                                              | 24        |
| <i>Required Core Courses</i>                                                                                                   |                                                                              |           |
| BIOC 5002                                                                                                                      | Research Compliance and Biochemistry Graduate Colloquium                     |           |
| BIOC 5112                                                                                                                      | Articulation of Research Logic                                               |           |
| BIOC 5120                                                                                                                      | Biochemistry and Molecular Biology Graduate Research Colloquium <sup>1</sup> |           |
| BIOC 5753                                                                                                                      | Biochemical Principles                                                       |           |
| BIOC 5853                                                                                                                      | Molecular and Integrative Metabolism                                         |           |
| BIOC 5930                                                                                                                      | Advanced Biochemical Techniques                                              |           |
| BIOC 6110                                                                                                                      | Seminar                                                                      |           |
| Plus 2 Advanced (Biochemistry 6000-level courses)                                                                              |                                                                              |           |
| BIOC 6723                                                                                                                      | Signal Transduction                                                          |           |
| BIOC 6733                                                                                                                      | Functional Genomics                                                          |           |
| BIOC 6740                                                                                                                      | Physical Biochemistry                                                        |           |
| BIOC 6753                                                                                                                      | Epigenetics                                                                  |           |
| BIOC 6763                                                                                                                      | Nucleic Acids and Protein Synthesis                                          |           |
| BIOC 6773                                                                                                                      | Protein Structure and Enzyme Function                                        |           |
| BIOC 6783                                                                                                                      | Biomembranes and Bioenergetics                                               |           |
| BIOC 6793                                                                                                                      | Plant Biochemistry                                                           |           |
| <i>Electives</i>                                                                                                               |                                                                              |           |
| BIOC 5723                                                                                                                      | Introduction to Bioinformatics                                               |           |
| BIOC 5102                                                                                                                      | Molecular Genetics                                                           |           |
| BIOC 5824                                                                                                                      | Biochemical Laboratory Methods                                               |           |
| BIOC 5930                                                                                                                      | Advanced Biochemical Techniques                                              |           |
| BIOC 6820                                                                                                                      | Selected Topics in Biochemistry                                              |           |
| Other 6000-level BIOC courses                                                                                                  |                                                                              |           |
| Other Graduate-level courses approved by the Graduate Thesis Advisory Committee                                                |                                                                              |           |
| <i>Additional Requirements</i>                                                                                                 |                                                                              |           |
| The student's Graduate Committee must approve the written thesis and an oral exam on the context of the thesis must be passed. |                                                                              |           |
| <b>Hours Subtotal</b>                                                                                                          |                                                                              | <b>24</b> |
| <b>Required Research</b>                                                                                                       |                                                                              |           |
| BIOC 5000                                                                                                                      | Research                                                                     | 6         |
| <b>Hours Subtotal</b>                                                                                                          |                                                                              | <b>6</b>  |
| <b>Total Hours</b>                                                                                                             |                                                                              | <b>30</b> |

1. Course to be taken 1 time each year prior to year of graduation.

## Non-Thesis Option

**Total Hours: 32**

| Code                                                                                                        | Title                                                    | Hours     |
|-------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------|
| <b>Coursework</b>                                                                                           |                                                          |           |
| Combination of core courses and other requirements to equal 30 hours.                                       |                                                          | 30        |
| <i>Core courses</i>                                                                                         |                                                          |           |
| BIOC 5002                                                                                                   | Research Compliance and Biochemistry Graduate Colloquium |           |
| BIOC 5112                                                                                                   | Articulation of Research Logic                           |           |
| BIOC 5753                                                                                                   | Biochemical Principles                                   |           |
| BIOC 5853                                                                                                   | Molecular and Integrative Metabolism                     |           |
| BIOC 5853                                                                                                   | Molecular and Integrative Metabolism                     |           |
| BIOC 6110                                                                                                   | Seminar                                                  |           |
| Plus 2 Advanced (Biochemistry 6000-level courses)                                                           |                                                          |           |
| BIOC 6723                                                                                                   | Signal Transduction                                      |           |
| BIOC 6733                                                                                                   | Functional Genomics                                      |           |
| BIOC 6740                                                                                                   | Physical Biochemistry                                    |           |
| BIOC 6753                                                                                                   | Epigenetics                                              |           |
| BIOC 6763                                                                                                   | Nucleic Acids and Protein Synthesis                      |           |
| BIOC 6773                                                                                                   | Protein Structure and Enzyme Function                    |           |
| BIOC 6783                                                                                                   | Biomembranes and Bioenergetics                           |           |
| BIOC 6793                                                                                                   | Plant Biochemistry                                       |           |
| BIOC 6820                                                                                                   | Selected Topics in Biochemistry                          |           |
| <i>Electives</i>                                                                                            |                                                          |           |
| BIOC 5723                                                                                                   | Introduction to Bioinformatics                           |           |
| BIOC 5102                                                                                                   | Molecular Genetics                                       |           |
| BIOC 5824                                                                                                   | Biochemical Laboratory Methods                           |           |
| Other 6000-level BIOC courses (Graduate-level courses approved by the Graduate Coordinator)                 |                                                          |           |
| <i>Other Requirements</i>                                                                                   |                                                          |           |
| The student's Graduate Committee must approve the written and oral reports and an oral exam must be passed. |                                                          |           |
| <b>Hours Subtotal</b>                                                                                       |                                                          | <b>30</b> |
| <b>Required Research</b>                                                                                    |                                                          |           |
| BIOC 5000                                                                                                   | Research                                                 | 2         |
| <b>Hours Subtotal</b>                                                                                       |                                                          | <b>2</b>  |
| <b>Total Hours</b>                                                                                          |                                                          | <b>32</b> |

## Graduate College Master's Program Requirements

Learn more about Graduate College 2023-2024 Master's Degree Program Requirements (<http://catalog.okstate.edu/graduate-college/>). Check the General Graduate College academic regulations for minimal GPA, language proficiency and other general requirements.