# Biochemistry and Molecular Biology, PhD

## 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](http://catalog.okstate.edu/graduate-college/#70)).

**Total Hours:** 90 (Beyond the Bachelor’s Degree)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Required Core Courses</strong></td>
<td></td>
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<tr>
<td>BIOC 5002</td>
<td>Research Compliance and Biochemistry Graduate Colloquium</td>
<td>2</td>
</tr>
<tr>
<td>BIOC 5112</td>
<td>Articulation of Research Logic</td>
<td>2</td>
</tr>
<tr>
<td>BIOC 5120</td>
<td>Biochemistry and Molecular Biology Graduate Research Colloquium</td>
<td>1</td>
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<tr>
<td>BIOC 5723</td>
<td>Biochemical Principles</td>
<td>3</td>
</tr>
<tr>
<td>BIOC 5753</td>
<td>Biochemical Principles</td>
<td>3</td>
</tr>
<tr>
<td>BIOC 5853</td>
<td>Molecular and Integrative Metabolism</td>
<td>3</td>
</tr>
<tr>
<td>BIOC 5930</td>
<td>Advanced Biochemical Techniques</td>
<td>3</td>
</tr>
<tr>
<td>BIOC 6110</td>
<td>Seminar</td>
<td>2</td>
</tr>
<tr>
<td>Three hours from:</td>
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<td>3</td>
</tr>
<tr>
<td>BIOC 6740</td>
<td>Physical Biochemistry</td>
<td></td>
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<tr>
<td>Plus 4 advanced (6000-level BIOC courses)</td>
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<td>12</td>
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<tr>
<td>BIOC 6723</td>
<td>Signal Transduction</td>
<td></td>
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<tr>
<td>BIOC 6733</td>
<td>Functional Genomics</td>
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</tr>
<tr>
<td>BIOC 6753</td>
<td>Epigenetics</td>
<td></td>
</tr>
<tr>
<td>BIOC 6773</td>
<td>Protein Structure and Enzyme Function</td>
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</tr>
<tr>
<td>BIOC 6793</td>
<td>Plant Biochemistry</td>
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</tbody>
</table>

**Hours Subtotal:** 34

**Electives**

Select 41 hours from the following:

- BIOC 4723: Introduction to Bioinformatics
- BIOC 5102: Molecular Genetics
- BIOC 5824: Biochemical Laboratory Methods
- BIOC 6820: Selected Topics in Biochemistry

**Hours Subtotal:** 41

**Required Research**

- BIOC 6000: Research

**Hours Subtotal:** 15

**Total Hours:** 60

1. Course to be taken 1 time each year prior to year of graduation.
2. Course to be taken 2 times at one credit each.

### Other Core Courses Listed Below as Required by the Student’s Advisor and Graduate Thesis Advisory Committee:

- BIOC 5723: Introduction to Bioinformatics
- BIOC 5753: Biochemical Principles
- BIOC 5853: Molecular and Integrative Metabolism
- BIOC 5930: Advanced Biochemical Techniques (10 credits maximum)
- BIOC 6110: Seminar
- BIOC 6723: Signal Transduction
- BIOC 6733: Functional Genomics
- BIOC 6740: Physical Biochemistry
- BIOC 6753: Epigenetics
- BIOC 6773: Protein Structure and Enzyme Function
- BIOC 6793: Plant Biochemistry

### Electives

Select 15 hours minimum from the following:

- BIOC 4723: Introduction to Bioinformatics
- BIOC 5102: Molecular Genetics
- BIOC 5824: Biochemical Laboratory Methods
- BIOC 6820: Selected Topics in Biochemistry

**Hours Subtotal:** 45

**Required Research**

- BIOC 6000: Research

**Hours Subtotal:** 15

**Total Hours:** 60

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

## Other Biochemistry and Molecular Biology, PhD, Requirements

- Pass PhD Preliminary Examination.
- Pass PhD Candidacy Examination: Present and pass the defense of a written research proposal.
- The student’s Graduate Committee must approve the written thesis, and an oral defense on the content of the thesis must be passed.

## Graduate College Doctor of Philosophy (PhD) Requirements

Learn more about Graduate College 2023-2024 Doctor of Philosophy (PhD) Degree Program Requirements ([http://catalog.okstate.edu/graduate-college/](http://catalog.okstate.edu/graduate-college/)). Check the General Graduate College academic regulations for minimal GPA, language proficiency and other general requirements.