MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (http://guide.wisc.edu/graduate/#policiesandrequirementstext), in addition to the program requirements listed below.

MAJOR REQUIREMENTS

MODE OF INSTRUCTION

<table>
<thead>
<tr>
<th>Face to Face</th>
<th>Evening/Weekend</th>
<th>Online</th>
<th>Hybrid</th>
<th>Accelerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Mode of Instruction Definitions

Accelerated: Accelerated programs are offered at a fast pace that condenses the time to completion. Students typically take enough credits aimed at completing the program in a year or two.

Evening/Weekend: Courses meet on the UW–Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.

Face-to-Face: Courses typically meet during weekdays on the UW-Madison Campus.

Hybrid: These programs combine face-to-face and online learning formats. Contact the program for more specific information.

Online: These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

CURRICULAR REQUIREMENTS

Requirement: Detail

Minimum Credit Requirement

Minimum Residence Credit Requirement

Minimum Graduate Coursework Requirement

Coursework (50%) policy (https://policy.wisc.edu/library/UW-1244 (https://policy.wisc.edu/library/UW-1244/)).

Overall GPA Requirement

This program follows the Graduate School’s GPA Requirement policy (https://policy.wisc.edu/library/UW-1203 (https://policy.wisc.edu/library/UW-1203/)).

Other Grade Requirements

n/a

Assessments and Examinations

Deposit of the doctoral dissertation in the Graduate School is required.

Language Requirements

n/a

Graduate School Breadth Requirement

Doctoral students must complete the program’s required coursework plus a minimum of 6 credits of approved breadth coursework in the physical, biological, and/or quantitative sciences (3 credits each from two of these categories). Students who opt for the Option A (focused external) doctoral minor or a graduate/professional certificate must complete the program’s required coursework, the requirements of the minor or certificate program, and a minimum of 6 credits of approved breadth coursework in the physical, biological, and/or quantitative sciences.

REQUIRED COURSES

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOCHEM/BMOLCHEM 701</td>
<td>Professional Responsibility (taken Fall of first year)</td>
<td>1</td>
</tr>
<tr>
<td>BIOCHEM 719</td>
<td>From Atoms to Molecules (taken Fall of first year)</td>
<td>3</td>
</tr>
<tr>
<td>BMOLCHEM 720</td>
<td>Experimental Design and Paradigms in Cellular Biochemistry and Molecular Biology (taken Spring of first year)</td>
<td>3</td>
</tr>
<tr>
<td>BIOCHEM 721</td>
<td>Biochemical Communication (taken Fall of second year)</td>
<td>2</td>
</tr>
</tbody>
</table>

Research Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOCHEM 990</td>
<td>Research</td>
<td>34</td>
</tr>
<tr>
<td>BMOLCHEM 990</td>
<td>Advanced Biomolecular Chemistry and Research</td>
<td></td>
</tr>
</tbody>
</table>

Breadth Requirements

Students must complete a minimum of two additional graduate–level courses from the following list of didactic or laboratory courses in order to fulfill their breadth requirements, and a minimum of 6 total credits is required. Courses must be chosen from at least 2 of the following categories: physical sciences, biological sciences, or quantitative sciences. One-credit seminars do not count toward the breadth requirements.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOCHEM/ NUTR SCI 510</td>
<td>Nutritional Biochemistry and Metabolism</td>
</tr>
<tr>
<td>BIOCHEM 570</td>
<td>Computational Modeling of Biological Systems</td>
</tr>
<tr>
<td>BIOCHEM/ M M &amp; I 575</td>
<td>Biology of Viruses</td>
</tr>
<tr>
<td>BIOCHEM 601</td>
<td>Protein and Enzyme Structure and Function</td>
</tr>
<tr>
<td>BIOCHEM/BMOLCHEM/ MATH 609</td>
<td>Mathematical Methods for Systems Biology</td>
</tr>
</tbody>
</table>
BIOCHEM/GENETICS/MICROBIO 612
Prokaryotic Molecular Biology

BIOCHEM/NUTR SCI 619
Advanced Nutrition: Intermediary Metabolism of Macronutrients

BIOCHEM/GENETICS/MD GENET 620
Eukaryotic Molecular Biology

BIOCHEM/BOTANY 621
Plant Biochemistry

BIOCHEM 625
Mechanisms of Action of Vitamins and Minerals

BMOLCHEM 627
Cellular Signal Transduction Mechanisms

BIOCHEM/PHMCOL-M/ZOOLOGY 630
Molecular Control of Metabolism and Metabolic Disease

BIOCHEM/NUTR SCI 645
Biophysical Chemistry

BMOLCHEM/MICROBIO 668
Microbiology at Atomic Resolution

BMOLCHEM 675
Advanced or Special Topics in Biomolecular Chemistry (Topic: Biochemical Methods for Genome Maintenance)

BIOCHEM/ CHEM 704
Chemical Biology

BIOCHEM 719
From Atoms to Molecules

BMOLCHEM 720
Experimental Design and Paradigms in Cellular Biochemistry and Molecular Biology

BIOCHEM 721
Biochemical Communication

BIOCHEM 729
Advanced Topics (Topics: Membrane Protein Structure and Function (Advanced); Foundations of Biotechnology; Biochemical Applications of Nuclear Magnetic Resonance)

BIOCHEM/ CHEM 945
Seminar-Chemical Biology (Advanced)

STAT/F&W ECOL/HORT 571
Statistical Methods for Bioscience I

MICROBIO 607
Advanced Microbial Genetics

NTP/NEURODPT 610
Cellular and Molecular Neuroscience

B M E/MED PHYS/PHMCOL-M/PHYSICS/RADIOL 619
Microscopy of Life

CHEM/GENETICS 626
Genomic Science

CRB 630
Proteomics Approaches for Biologists

CRB 640
Fundamentals of Stem Cell and Regenerative Biology

ONCOLOGY/PL PATH 640
General Virology-Multiplication of Viruses

MICROBIO 657
Bioinformatics for Microbiologists

CHEM 668
Biophysical Spectroscopy

NTP 670
Stem Cells and the Central Nervous System

ONCOLOGY 673
Purification and Characterization of Protein and Protein Complexes

NEURODPT 675
Selected Topics in Physiology

ONCOLOGY 703
Carcinogenesis and Tumor Cell Biology

PATH 750
Cellular and Molecular Biology/Pathology

PATH 751
Biology of Aging

B M I/COMP SCI 776
Advanced Bioinformatics

ONCOLOGY 778
Bioinformatics for Biologists

B M E 780
Methods in Quantitative Biology

PHMCOL-M 781
Molecular and Cellular Principles in Pharmacology

CBE/B M E 783
Design of Biological Molecules

B M I 826
Special Topics in Biostatistics and Biomedical Informatics (Topic: Computational Network Biology)

BOTANY 860
Plant Cell Biology

LSC 875
Special Topics

GENETICS 885
Advanced Genomic and Proteomic Analysis

BOTANY/PL PATH 930
Seminar-Mycology

NUTR SCI 931
Seminar-Nutrition

Seminar Requirement 5
PhD students must take at least five semesters of seminars and present in three of those. Students select 1-credit seminars in consultation with their committee.

Total Credits 54