BIOCHEMISTRY, PH.D.

REQUIREMENTS

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

Face to Face	Evening/ Weekend	Online	Hybrid	Accelerated
Yes	No	No	No	No

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	54 credits
Minimum Residence Credit Requirement	42 credits
Minimum Graduate Coursework Requirement	54 credits must be graduate-level coursework. Details can be found in the Graduate School's Minimum Graduate Coursework (50%) policy (https://policy.wisc.edu/library/UW-1244 (https://policy.wisc.edu/library/UW-1244/)).
Overall Graduate GPA Requirement	3.00 GPA required. 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

Code	Title	Credits
Program Course Requirements		
BIOCHEM/ BMOLCHEM 701	Professional Responsibility (taken Fall of first year)	1
BIOCHEM 719	From Atoms to Molecules (taken Fall of first year)	3
BMOLCHEM 720	Experimental Design and Paradigms in Cellular Biochemistry and Molecular Biology (taken Spring of first year)	3
BIOCHEM 721	Biochemical Communication (taken Fall of second year)	2
Research Requirements		*34*
BIOCHEM 990	Research	
BMOLCHEM 990	Advanced Biomolecular Chemistry and Research	
Breadth Requirements		*6*
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.		
BIOCHEM/ NUTR SCI 510	Nutritional Biochemistry and Metabolism	
BIOCHEM 570	Computational Modeling of Biological Systems	
BIOCHEM/ M M & I 575	Biology of Viruses	
BIOCHEM 601	Protein and Enzyme Structure and Function	
BIOCHEM/B M I/ BMOLCHEM/ MATH 609	Mathematical Methods for Systems Biology	

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	
BIOCHEM/ PHMCOL-M/ ZOOLOGY 630	Cellular Signal Transduction Mechanisms
BIOCHEM/ NUTR SCI 645	Molecular Control of Metabolism and Metabolic Disease
BIOCHEM/ CHEM 665	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**