

BIOCHEMISTRY, PHD

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (<http://guide.wisc.edu/graduate/#policiesandrequirements>), 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. Refer to the Graduate School: Minimum Graduate Coursework Requirement (50%) Requirement policy: https://policy.wisc.edu/library/UW-1244 (https://policy.wisc.edu/library/UW-1244/).
Overall Graduate GPA Requirement	3.00 GPA required. Refer to the Graduate School: Grade Point Average (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 or B 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. The latter might be waived with approval from the Education and Career Development Committee.

REQUIRED COURSES

Code	Title	Credits
Program Course Requirements		
BIOCHEM/ BMOLCHEM 701	Responsible Conduct in Bioscience Research (taken fall of first year)	2
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		33
BIOCHEM 990	Research	
BMOLCHEM 990	Advanced Biomolecular Chemistry and Research	
Breadth Requirements		6
Students must complete a minimum of two additional graduate-level (Grad 50%) 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. In consultation with their committee, students must complete courses 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	ONCOLOGY 673	Purification and Characterization of Protein and Protein Complexes
BIOCHEM/ NUTR SCI 619	Advanced Nutrition: Intermediary Metabolism of Macronutrients	NEURODPT 675	Selected Topics in Physiology
BIOCHEM/ GENETICS/ MD GENET 620	Eukaryotic Molecular Biology	ONCOLOGY 703	Carcinogenesis and Tumor Cell Biology
BIOCHEM/ BOTANY 621	Plant Biochemistry	PATH 750	Cellular and Molecular Biology/ Pathology
BIOCHEM 625	Mechanisms of Action of Vitamins and Minerals	PATH 751	Biology of Aging
BIOCHEM/ NUTR SCI 645	Molecular Control of Metabolism and Metabolic Disease	B M I/ COMP SCI 776	Advanced Bioinformatics
BMOLCHEM/ MICROBIO 668	Microbiology at Atomic Resolution	ONCOLOGY 778	Bioinformatics for Biologists
BMOLCHEM 675	Advanced or Special Topics in Biomolecular Chemistry (Topic: Biochemical Methods for Genome Maintenance)	B M E 780	Methods in Quantitative Biology
BIOCHEM/ CHEM 704	Chemical Biology	PHMCOL-M 781	Molecular and Cellular Principles in Pharmacology
BIOCHEM 719	From Atoms to Molecules	CBE/B M E 783	Design of Biological Molecules
BMOLCHEM 720	Experimental Design and Paradigms in Cellular Biochemistry and Molecular Biology	B M I 826	Special Topics in Biostatistics and Biomedical Informatics (Topic: Computational Network Biology)
BIOCHEM 721	Biochemical Communication	BOTANY 860	Plant Cell Biology
BIOCHEM 729	Advanced Topics (Topics: Membrane Protein Structure and Function (Advanced); Foundations of Biotechnology; Biochemical Applications of Nuclear Magnetic Resonance)	LSC 875	Special Topics
STAT/F&W ECOL/ HORT 571	Statistical Methods for Bioscience I	GENETICS 885	Advanced Genomic and Proteomic Analysis
MICROBIO 607	Advanced Microbial Genetics	Seminar Requirement	5
NTP/ NEURODPT 610	Cellular and Molecular Neuroscience	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.	
B M E/ MED PHYS/ PHMCOL- M/PHYSICS/ RADIOL 619	Microscopy of Life	Total Credits	54
CHEM/ GENETICS 626	Genomic Science		
CHEM 665	Biophysical Chemistry		
CRB 630	Proteomics Approaches for Biologists		
CRB 640	Fundamentals of Stem Cell and Regenerative Biology		
ONCOLOGY/ M M & I/ 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		