

BIOPHYSICS, PH.D.

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	51 credits
Minimum Residence Credit Requirement	32 credits
Minimum Graduate Coursework Requirement	26 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	Credits are not counted from courses in which a grade of BC or below is obtained for the Biophysics core courses. In the event of an unsatisfactory grade, the student must

repeat the course and obtain a grade of B or better if they want to count the class towards their Biophysics GPA and course requirements.

Assessments and Examinations Students are required to complete an oral preliminary exam. The oral exam should be completed no later than the end of the student's third fall semester in the program. This exam consists of an oral defense of a written research proposal. The format of the research proposal is based on the format for an NIH F31 predoctoral grant application. If the student feels they need more time to complete the oral exam, they must request an extension from the Biophysics Office.

Language Requirements No language requirements.

Breadth Requirement No doctoral minor or Graduate/Professional certificate required.

Required Courses

Code	Title	Credits
Required by the time oral prelim is taken:		
BIOCHEM/ CHEM 665	Biophysical Chemistry	4
CHEM 668	Biophysical Spectroscopy ¹	3
Biophysics Additional Courses²		6

Students must take at least 2 additional classes from different categories from the following list of classes (alternative classes may be substituted with approval from the Biophysics Program Steering Committee):

<i>Structure</i>		
BIOCHEM 601	Protein and Enzyme Structure and Function	
BIOCHEM 625	Mechanisms of Action of Vitamins and Minerals	
CHEM 622	Organic Analysis	
CHEM 675	Introductory Quantum Chemistry	
ONCOLOGY 673	Purification and Characterization of Protein and Protein Complexes	
<i>Modeling</i>		
CHEM 661	Chemical and Statistical Thermodynamics	
MATH/B M I/ BIOCHEM/ BMOLCHEM 609	Mathematical Methods for Systems Biology	
<i>Molecular Biology</i>		
BIOCHEM/ GENETICS/ MICROBIO 612	Prokaryotic Molecular Biology	
BIOCHEM/ GENETICS/ MD GENET 620	Eukaryotic Molecular Biology	
<i>Neuroscience</i>		
NTP/ NEURODPT 610	Cellular and Molecular Neuroscience	
<i>Spectroscopy/Microscopy</i>		

B M E/ MED PHYS/ PHMCOL- M/PHYSICS/ RADIOL 619	Microscopy of Life
B M E 751	Biomedical Optics and Biophotonics
CHEM 860	Selected Topics in Physical Chemistry (Topic: Spectroscopy of Individual Molecules and Particles)
BIOCHEM 729	Advanced Topics (Topic: Advanced Topics in NMR)
<i>Computational Courses</i>	
ONCOLOGY 778	Bioinformatics for Biologists
B M I/ COMP SCI 776	Advanced Bioinformatics

Ethics Course	1-3
BIOCHEM 729	Advanced Topics (Ethics) ³

Seminar Courses	
CHEM/ BIOCHEM 872	Selected Topics in Macromolecular and Biophysical Chemistry

Students are required to participate in seminar courses for the duration of their studies. Initially, all students are required to enroll in CHEM/BIOCHEM 872 (Topic: Macromolecular and Biophysical Chemistry) for both fall and spring semesters. Once a student has successfully achieved dissertator status, they are eligible to enroll in alternative seminars with permission from the program.

Speciality Courses

To fulfill the remainder of required credits, students can take specialty courses. It is recommended to take courses in areas such as biotechnology, computer science, electrical and computer engineering, molecular biology, or physics. Students should consult with their Thesis Advisor and thesis committee members about appropriate specialty courses to take pertaining to individual training goals.

Research Credits

Finally, all students are expected to register for 990 research credits every semester. These are the courses in which students will be conducting their independent research. First semester students will register for 990 research credits in the department of the Biophysics Program Chair. Once a thesis lab is chosen, these credits will be conducted in the thesis advisor's home department.

Total Credits **51**

1

Because CHEM 668 Biophysical Spectroscopy is only offered every other year, students will be advised upon joining the program in which semester they must complete the course. This course must be taken for 3 credits.

2

To meet the 6 credit minimum, all elective courses must be at least 2 credits. That means that students can, for example, take two 3-credit courses, three 2-credit courses, or one 2-credit and one 4-credit course to satisfy this requirement. The above list of courses have all been approved as elective courses by the Biophysics Steering Committee. If you are interested in a different course, in order for it to count as an elective course towards your Biophysics graduate degree, the course needs to be approved by the Steering Committee. Please email the coordinator at biophysics@bocklabs.wisc.edu a syllabus from the course and a short paragraph detailing why the class is relevant to your research.

3

Students are also required to take an ethics course that covers all of the items considered necessary by the NIH for ethical and professional scientific training. It is strongly recommended that students take the ethics course during their first year. The recommended ethics course is: BIOCHEM 729 Advanced Topics. The Biophysics Program also conducts a mandatory ethics refresher seminar for all students that is held at the end of every spring semester.