

# BIOPHYSICS, MS

## REQUIREMENTS

### MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum degree requirements (<https://guide.wisc.edu/graduate/#requirements>) and policies (<https://guide.wisc.edu/graduate/#policies>), 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	30 credits
Minimum Residence Credit Requirement	16 credits
Minimum Graduate Coursework Requirement	15 credits must be graduate-level coursework. Refer to the Graduate School: Minimum Graduate Coursework (50%) Requirement policy: <a href="https://policy.wisc.edu/library/UW-1244">https://policy.wisc.edu/library/UW-1244</a> ( <a href="https://policy.wisc.edu/library/UW-1244/">https://policy.wisc.edu/library/UW-1244/</a> ).
Overall Graduate GPA Requirement	3.00 GPA required. Refer to the Graduate School: Grade Point Average (GPA) Requirement policy: <a href="https://policy.wisc.edu/library/UW-1203">https://policy.wisc.edu/library/UW-1203</a> ( <a href="https://policy.wisc.edu/library/UW-1203/">https://policy.wisc.edu/library/UW-1203/</a> ).
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 take two rounds of exams in order to achieve dissertator status. At the end of students' second year, they are required to take their written preliminary exam. Once this exam is passed, students must take their preliminary exam by the end of their third year.

**Language Requirements** No language requirements.

### REQUIRED COURSES

The following coursework is completed on the way to earning the Biophysics PhD and is the minimum required for the master's:

Code	Title	Credits
<b>Required Courses:</b>		
CHEM 665	Biophysical Chemistry	3
CHEM 668	Biophysical Spectroscopy	3
<b>Biophysics Advanced Electives<sup>1</sup></b>		<b>6</b>

Students must take at least 6 credits of advanced electives from at least two different categories using the following list of classes (alternative classes may be substituted with approval from the Biophysics Program Curriculum Committee):

#### Structure

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
MICROBIO/ BMOLCHEM 668	Microbiology at Atomic Resolution
ONCOLOGY 673	Purification and Characterization of Protein and Protein Complexes

#### Modeling Theory

CHEM 661	Chemical and Statistical Thermodynamics
MATH/B M I/ BIOCHEM/ BMOLCHEM 609	Mathematical Methods for Systems Biology

#### Molecular Biology

BIOCHEM/ GENETICS/ MICROBIO 612	Prokaryotic Molecular Biology
BIOCHEM/ GENETICS/ MD GENET 620	Eukaryotic Molecular Biology

#### Neuroscience

NTP/ NEURODPT 610	Cellular and Molecular Neuroscience
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#### Spectroscopy/Microscopy

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>Bioinformatics and Computational Biology</i>	
BIOCHEM 570	
B M I/ COMP SCI 776	Advanced Bioinformatics
ONCOLOGY 778	Bioinformatics for Biologists

### Specialty 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.

**Total Credits** **30**

<sup>1</sup> 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 were approved as elective course options by the Biophysics Steering Committee. If you are interested in a different course to count as an elective course towards your Biophysics graduate degree, the course needs to be approved by the Curriculum Committee. To request a course approval, please use this form (<https://biophysics.wisc.edu/advanced-elective-approval-form/>) (you will need a syllabus from the course and a short paragraph detailing why the class is relevant to your research).