

# INTEGRATIVE BIOLOGY, PHD

## 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	51 credits
Minimum Residence Credit Requirement	32 credits
Minimum Graduate Coursework Requirement	26 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** An average record of B or better in all work taken as a graduate student is required by the Department of Integrative Biology (grades of P and S are for this purpose considered to be satisfactory at the B level; grades of Incomplete are considered for this purpose to be unsatisfactory if they are not removed during the following semester of residence).

**Assessments and Examinations** In the second semester of the first year, students must complete the Certification of Candidate for a PhD degree.

By the end of the fourth semester, students must complete the qualifying examination and return the signed qualifying examination form to the department.

The preliminary examination (defense of research project) should be completed and the prelim warrant submitted by the end of the sixth semester. Note that in addition to passing the prelim exam, students must have completed 32 credits, clear all Incomplete or Progress grades in nonresearch courses, complete all minor requirements and earn at least a cumulative 3.000 GPA in order to be granted dissertator status. The preliminary defense warrant must be requested from the department.

Defense of the PhD usually occurs after the tenth semester. A final defense warrant must be requested from the department.

**Language Requirements** To be determined by the advisory committee.

**Graduate School Breadth Requirement** All doctoral students are required to complete a doctoral minor or graduate/professional certificate. Refer to the Graduate School: Breadth Requirement in Doctoral Training policy: <https://policy.wisc.edu/library/UW-1200> (<https://policy.wisc.edu/library/UW-1200/>).

### REQUIRED COURSES

PhD students in Integrative Biology must take courses and seminars to fulfill the minimum credit requirement for the degree. Specific courses (examples are listed below) are approved by the student's advisor or advisory committee and depend on the student's research area, interests, and goals.

Code	Title	Credits
<b>Breadth</b>		<b>9</b>
<b>Graduate Level Coursework</b>		
At least 50% of credits (26 for a PhD) must be with courses designed as graduate level coursework ("Grad 50%" attribute).		26
<b>Research Credits</b>		
Complete research credits.		12-16
ZOOLOGY 799	Independent Study (Research credits)	
ZOOLOGY 990	Research	

**Total Credits** 51

**Common Graduate Level Courses**

<b>Code</b>	<b>Title</b>	<b>Credits</b>				
ANTHRO 458	Primate Behavioral Ecology	3		PATH 750	Cellular and Molecular Biology/ Pathology	2
B M I/ COMP SCI 776	Advanced Bioinformatics	3		PATH 752	Cellular and Molecular Biology/ Pathology Seminar	1
B M I/STAT 877	Statistical Methods for Molecular Biology	3		PATH 755	Responsible Conduct in Research: Research Ethics, Rigor, Reproducibility and Transparency	2
BOTANY/ENTOM/ PL PATH 505	Plant-Microbe Interactions: Molecular and Ecological Aspects	3		ZOOLOGY/ BOTANY/ ENTOM 473	Plant-Insect Interactions	3
BOTANY/ PL PATH 563	Phylogenetic Analysis of Molecular Data	3		ZOOLOGY/ BOTANY/ENVIR ST/ F&W ECOL 516	Conservation Biology	3
BOTANY 801	Advanced Plant Community Ecology	4		ZOOLOGY/AN SCI/ F&W ECOL 520	Ornithology	3
BOTANY 802	Physiological Plant Ecology	3		ZOOLOGY/AN SCI/ F&W ECOL 521	Birds of Southern Wisconsin	3
BOTANY 860	Plant Cell Biology	2		ZOOLOGY/ ENTOM 540	Theoretical Ecology	3
CRB 640	Fundamentals of Stem Cell and Regenerative Biology	3		ZOOLOGY/ GEOSCI 542	Invertebrate Paleontology	3
CRB 650	Molecular and Cellular Organogenesis	3		ZOOLOGY 603	Endocrinology	3-4
ENTOM 321	Physiology of Insects	3		ZOOLOGY 604	Computer-based Gene and Disease/Disorder Research Lab	2
ENTOM/ ZOOLOGY 371	Medical Entomology: Biology of Vector and Vector-borne Diseases	3-4		ZOOLOGY 620	Neuroethology Seminar	2
ENTOM/ F&W ECOL 711	Multivariate Analysis of Ecological and Community Data	2		ZOOLOGY/ F&W ECOL 660	Climate Change Ecology	3
ENTOM 901	Seminar in Organismal Entomology	1		ZOOLOGY/ BOTANY/ F&W ECOL 672	Historical Ecology	2
F&W ECOL/STAT 571	Statistical Methods for Bioscience I	4		ZOOLOGY/ NEURODPT/ PSYCH 674	Behavioral Neuroendocrinology Seminar	2
F&W ECOL/ STAT 572	Statistical Methods for Bioscience II	4		ZOOLOGY/ BOTANY 725	Ecosystem Concepts	3
GENETICS/ BIOCHEM/ MICROBIO 612	Prokaryotic Molecular Biology	3		ZOOLOGY/ ATM OCN/ ENVIR ST/ GEOSCI 750	Problems in Oceanography	3
GENETICS/ BIOCHEM/ MD GENET 620	Eukaryotic Molecular Biology	3		ZOOLOGY/ NEURODPT 765	Developmental Neuroscience	3
GENETICS/ENTOM/ ZOOLOGY 624	Molecular Ecology	3		ZOOLOGY 799	Independent Study	1-6
GENETICS/ CHEM 626	Genomic Science	2		ZOOLOGY 800	Advanced Topics in the Biological Sciences	1-3
GENETICS/ BIOCHEM 631	Plant Genetics and Development	3		ZOOLOGY/ BOTANY/ENTOM/ GENETICS 820	Foundations of Evolution	2
GENETICS 633	Population Genetics	3		ZOOLOGY/ BOTANY/ENTOM/ F&W ECOL 821	Foundations of Ecology	2
GENETICS/CRB 710	Developmental Genetics	3		ZOOLOGY/ BOTANY 879	Advanced Landscape Ecology	3
GENETICS 885	Advanced Genomic and Proteomic Analysis	3				
NEURODPT 629	Molecular and Cellular Mechanisms of Memory	3				
NTP/ NEURODPT 610	Cellular and Molecular Neuroscience	4				
NTP/NEURODPT/ PSYCH 611	Systems Neuroscience	4				
NTP/ NEURODPT 640	Computational Neuroscience: From Single Cells to Whole Brain Models	3				
NTP 677	Basic Sleep Mechanisms and Sleep Disorders: from Neurobiology to Sleep Medicine	3				
NTP 701	Experimental Design and Statistical Methodology	1				

ZOOLOGY/ AGROECOL/ ATM OCN/BOTANY/ ENTOM/ENVIR ST/ F&W ECOL/ GEOG 953	Introduction to Ecology Research at UW-Madison	1-2
ZOOLOGY/AN SCI/ OBS&GYN 954	Seminar in Endocrinology- Reproductive Physiology	0-1
ZOOLOGY 955	Seminar-Limnology	1
ZOOLOGY 956	Seminar-Ecology	1
ZOOLOGY 957	Seminar-Evolution	1
ZOOLOGY 960	Seminar in Cellular Biology	1
ZOOLOGY 962	Seminar-Ethology	1
ZOOLOGY/ ATM OCN/ BOTANY/ENVIR ST/ F&W ECOL/GEOG/ GEOSCI 980	Earth System Science Seminar	1
ZOOLOGY 990	Research	1-9

### Teaching Assistant Requirement

All students are required to serve as a teaching assistant for a minimum of one semester. All students must hold a departmental seminar in which they present their graduate research.