

BIOLOGICAL SCIENCES (PH.D.)

Requirements

The curriculum requires 64 credits for students who choose to concentrate in Ecology & Systematics and 65 credits for those who choose Cell & Molecular biology. Both concentrations include two core courses in ecology and two core courses in cell and molecular biology, usually taken in the first year, so students will get exposure to both subject areas.

Requirements include core courses, breadth (non-core) courses, concentration courses, and a language requirement, which can be fulfilled with a biostatistics course. Two comprehensive examinations (one of which is completed through the dissertation proposal defense) and a dissertation are also required.

Course Requirements

Course	Title	Credits
Core Requirements ¹		
BISC 7501	Population & Community Biology	4
BISC 7502	Eukaryotic Molecular Biology	4
BISC 7503	Community and Ecosystem Ecology	4
BISC 6734	Cell Biology of Eukaryotes	4
Non-Core Requirements		
BISC 6525	Biostatistics ²	3
BISC 7801	Methods in Cell and Molecular Biology	1
BISC 8999	Independent Study (graded on letter scale)	2
BISC 8801	Biological Colloquium I (taken twice)	0
Concentration-Specific Requirements		3 to 4
<i>Cell & Molecular Biology Concentration</i>		
BISC 7804	Techniques in Molecular Biology	
<i>Ecology & Systematics Concentration</i>		
BISC 6535	Ecological Methods	
One Additional Elective Credit ³		
Electives/Research Tutorials		9
BISC 8999	Independent Study (graded on a letter scale)	
Graduate-Level Biological Sciences Electives ⁴		
Comprehensive Exam ⁵		
BISC 0936	Master's Comprehensive Examination-Biology	0
BISC 0930	PhD Comprehensive Examination-Biology	0
Doctoral-Level Research		
BISC 7999	Research for Ph.D. in Biological Sciences	30
Degree Milestones		
BISC 0950	Proposal Development	
BISC 0960	Proposal Acceptance	
Dissertation		
BISC 0970	Dissertation Mentoring- Biological Sciences	

BISC 9999	Dissertation Direction ⁶	
Total Credits		64-65

¹ Ph.D. students may count at most one grade of "C" towards the Core requirements, provided the Core courses is not in their area of concentration, as follows:

- For Cell & Molecular Biology concentration students, BISC 7502 Eukaryotic Molecular Biology and BISC 6734 Cell Biology of Eukaryotes are designated as concentration courses (thus, a grade of B- or higher is required in these courses).
- For Ecology & Systematics concentration students, BISC 7501 Population & Community Biology and BISC 7503 Community and Ecosystem Ecology are designated as concentration courses (thus, a grade of B- or higher is required in these courses).

² A grade of B is required in BISC 6525 Biostatistics for the course to fulfill the GSAS Language Requirement.

³ See "Electives/Research Tutorials" for the courses that may fulfill this requirement.

⁴ Any course with the subject code BISC, numbered 5000-8998 may count as an elective.

⁵ Please note:

- For students in the Ecology & Systematics concentration, BISC 7501 Population & Community Biology and BISC 7503 Community and Ecosystem Ecology are considered concentration-specific core course subject to testing in the comprehensive exam. For students in the Cell & Molecular concentration, these courses are considered breadth courses, and are not subject to testing in the comprehensive exam.
- For students in the Cell & Molecular concentration, BISC 7502 Eukaryotic Molecular Biology and BISC 6734 Cell Biology of Eukaryotes are considered concentration-specific core course subject to testing in the comprehensive exam. For students in the Ecology & Systematics concentration, these courses are considered breadth courses, and are not subject to testing in the comprehensive exam.

⁶ Students should register for BISC 9999 Dissertation Direction only if the 30 credits in BISC 7999 Research for Ph.D. in Biological Sciences have been completed, and until their dissertation oral defense has been passed.

Degree Requirements

1. A minimum of 64 (Ecology & Systematics concentration) and 65 (Cell & Molecular concentration) course credits including at least 2 credits of research tutorial. All research tutorial credits earned during years 1 and 2 count as course credits.
2. Reading knowledge of a foreign language (a computer language or statistics may be substituted for a foreign language).
3. Acceptable performance on the M.S. comprehensive examination (BISC 0936), which is achieved by a score of 85% or higher (grade of High Pass).
4. Maintenance of a 3.5 GPA.

CIP Code

26.0101 - Biology/Biological Sciences, General.

You can use the CIP code to learn more about career paths associated with this field of study and, for international students, possible post-graduation visa extensions. Learn more about CIP codes and other information resources.