

B.S. in Biological Sciences, Organismal Biology Option

The Organismal Biology option provides a rigorous program of study in plant or animal biology at the whole-organism, species, population, and community levels, while allowing students the greatest flexibility in selecting those biology courses which best meet their interests and objectives. It accomplishes this by requiring students to select 20 required credits in biology in consultation with their advisor to achieve a personal curriculum. In addition, students can use the elective credits to develop strength in a second area which may enhance their prospects of gaining employment with a bachelor's degree or their prospects of acceptance into specialized graduate programs. Most professional positions in biology require completion of one or more graduate degrees, and the Organismal Biology Option is excellent preparation for graduate studies.

Program Learning Outcomes

- Demonstrate a broad knowledge of biology, including cellular, molecular, and organismal biology; genetics; as well as extensive understanding of ecology including physiological, population, community, and behavioral ecology. Knowledge and understanding are evaluated primarily by written examination and reinforced by integration throughout the curriculum.
- Apply effective communication skills; emphasizing written communication. Students are required to demonstrate written communication skills in term papers, written lab reports, and essay exams.
- Demonstrate well-developed quantitative problem-solving skills in mathematics and statistics. Students are required to demonstrate proficiency in applied calculus through population modeling exercises and examinations, and to demonstrate proficiency in population estimation, genetic analysis, and statistical analysis of ecological data in examinations and lab reports.
- Advanced coursework in basic sciences and laboratory sciences, as well as a sequence of courses in a structured set of biology electives. Students are required to declare an area of emphasis and in consultation with their advisor select a set of courses focused on their chosen area. Areas of interest can include both animal and plant biology at levels from physiological to populations or communities. Students are expected to master laboratory skills, identify critical questions in their chosen area of interest, and communicate effectively the outcomes of experiments or investigations in these areas.

Freshman Year	Credits	
	Fall	Spring
BIOB 170IN - Principles of Biological Diversity	4	
CHMY 141 - College Chemistry I & CHMY 142 - College Chemistry I Lab	4	
COMX 111US - Introduction to Public Speaking or CLS 101US - Knowledge and Community	3	
University Core, Electives, or Math pre-reqs	3-4	
BIOB 160 - Principles of Living Systems		4
CHMY 143 - College Chemistry II & CHMY 144 - College Chemistry II Lab		4
University Core, Electives, or Math pre-reqs		3-6
Year Total:	14-15	11-14
Sophomore Year	Credits	
	Fall	Spring
PHSX 205 - College Physics I	4	
Choose the Physics Option:	0-7	

BIOB 318 - Biometry or STAT 216Q - Introduction to Statistics		
PHSX 207 - College Physics II		
Or Choose the Statistics Option:	0-6	
STAT 216Q - Introduction to Statistics		
STAT 337 - Intermediate Statistics with Introduction to Statistical Computing		
CHMY 211 - Elements of Organic Chemistry & CHMY 212 - Elements of Organic Chemistry Lab	5	
University Core or Electives	3-6	
BCH 380 - Biochemistry & BCH 381 - Biochemistry Lab		5
M 161Q - Survey of Calculus		4
University Core or Electives		3-6
Year Total:	12-28	12-15
Junior Year	Credits	
	Fall	Spring
BIOB 375 - General Genetics	3	
University Core or Electives	9-12	
BIOE 370 - General Ecology		3
BIOB 420 - Evolution		3
BIOO 412 - Animal Physiology or BIOO 433 - Plant Physiology or BIOB 425 - Adv Cell & Molecular Biology		3
Biology Electives		3-6
Year Total:	12-15	12-15
Senior Year	Credits	
	Fall	Spring
Biology Electives	15	
BIOE 499 - Senior Thesis/Capstone		2
Biology Electives		12-15
Year Total:	15	14-17
Total Program Credits:		120

A minimum of 20 credits of Biology electives also must be completed from courses in ANSC, BIOB, BIOE, BIOH, BIOO, NRSM, WILD, BCH (UD only), BIOM (except BIOM 497). At least 16 of these credits must be in upper division courses numbered 300 and above. Credits must be for regularly scheduled courses, except that up to 4 total credits of undergraduate research in Biology (BIOE 490R, BIOE 492) and up to 2 credits of Biology Teaching (BIOB 497) may be included. Up to 6 credits of certain courses in basic biological sciences from departments other than these may be included, with the prior approval of the advisor and Organismal Biology Certifying Officer **before the course is taken**.

University requirements for graduation also must be completed, including university core requirements and a minimum of 120 total credits of which at least 42 credits must be in courses numbered 300 and above. Depending on courses selected, the curriculum includes 35 to 40 credits numbered 300 and above, so additional courses must be selected.

*Pre Med students

- should take Cellular and Molecular Biology (BIOB 260) instead of Principles of Living Systems (BIOB 160) to meet the prerequisites for BIOH electives
- should take Organic Chemistry I & II (CHMY 321 and 323) instead of Elements of Organic Chemistry (CHMY 211)