

PLANT BIOLOGY B.S.

All students must meet the University Requirements.

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This page also includes descriptions of and specific requirements for the three Plant Biology concentrations:

- General Plant Biology Concentration
- Ecology and Evolutionary Biology of Plants Concentration
- Plant Molecular Biology Concentration

Students select from three concentrations: General Plant Biology, Plant Molecular Biology, and Ecology and Evolutionary Biology of Plants. Basic courses that are required for all of the concentrations, and additional courses specific for each concentration, are listed below. Students may petition the Department of Plant Biology to substitute similar courses for those listed. Study of a modern foreign language is encouraged for those attracted to the many international career opportunities in plant biology.

MAJOR REQUIREMENTS

Basic Course Requirements (45-48 credits) – required for all concentrations:

BCOR 011	Exploring Biology	4
BCOR 012	Exploring Biology	4
BCOR 101	Genetics	3
PBIO 104	Plant Physiology	4
CHEM 031	General Chemistry 1 ¹	4
CHEM 032	General Chemistry 2 ¹	4
CHEM 141	Organic Chemistry 1 ¹	4
CHEM 142	Organic Chemistry 2 ¹	4
Choose one of the following sequences:		6-8
MATH 019 & MATH 020	Fundamentals of Calculus I and Fundamentals of Calculus II	
MATH 021 & MATH 022	Calculus I and Calculus II	
Choose one of the following:		3
STAT 141	Basic Statistical Methods	
STAT 211	Statistical Methods I	
NR 140	Applied Environ Statistics	
Choose one of the following:		4-5
PHYS 011 & PHYS 021	Elementary Physics and Introductory Lab I	

PHYS 051	Fundamentals of Physics I	
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- ¹ Students desiring an especially strong foundation in chemistry may enroll in the equivalent courses for chemistry majors: CHEM 035, CHEM 036, CHEM 143, CHEM 144 instead of taking CHEM 031, CHEM 032, CHEM 141, CHEM 142.

Students must also complete the requirements for one of the following concentrations:

GENERAL PLANT BIOLOGY CONCENTRATION

This concentration offers broad training at all levels of plant biology ranging from molecular biology to plant communities. Students have the flexibility to study plants from many perspectives and to understand how the diverse areas are interrelated. Students, in consultation with a faculty advisor, can choose courses that meet their individual needs and interests. Students are encouraged to perform undergraduate research working directly with departmental faculty on laboratory or field projects in plant biology.

In addition to the basic course requirements for the departmental major (listed above), this concentration has the following requirements and electives:

Concentration Requirements		
PBIO 108	Morph & Evo of Vascular Plants	4
or PBIO 109	Plant Systematics	
BCOR 102	Ecology and Evolution	4
or BCOR 103	Molecular and Cell Biology	
Concentration Electives		
At least eighteen credits of courses relevant to plant biology (at least two must be PBIO courses and at least two must be 200-level courses) selected in consultation with the student's advisor.		18

ECOLOGY AND EVOLUTIONARY BIOLOGY OF PLANTS CONCENTRATION

This concentration offers broad training in organismal biology, with emphasis on population and physiological ecology, community structure and function, and plant evolution and diversity. Students choose from a menu of options in fulfilling most requirements; this flexible curriculum enables students to select from a wide range of courses while achieving proficiency in the ecology and evolution of plants. Students are encouraged to initiate an independent research project with a member of the departmental faculty.

In addition to the basic course requirements for the departmental major (listed above), this concentration has the following requirements and electives:

Concentration Requirements		

PBIO 108	Morph & Evo of Vascular Plants	4
PBIO 109	Plant Systematics	4
BCOR 102	Ecology and Evolution	4
Concentration Electives		
At least fifteen credits of courses relevant to plant biology, including at least one ecology course (at least two must be PBIO courses and at least two must be 200-level courses) selected in consultation with the student's advisor.		15

PLANT MOLECULAR BIOLOGY CONCENTRATION

This concentration focuses on the inner workings of plants at the molecular, cellular, and organismal levels. Although the basic cellular functions of plants are the same as those of animals, plants face unique challenges and have evolved interesting solutions. To understand the unique biology of plants within a context of what is known about other organisms, courses examining the biochemistry and molecular biology of plants are supplemented by courses on the molecular functions and development of other organisms. In addition to course work, students are encouraged to get hands-on laboratory experience by taking advantage of the many opportunities to participate in independent research with departmental faculty.

In addition to the basic course requirements for the departmental major (listed above), this concentration has the following requirements and electives:

Concentration Requirements		
BIOC 205	Biochemistry I ¹	3
BIOC 206	Biochemistry II ¹	3
BIOC 207	Biochemistry Lab ¹	2
BCOR 103	Molecular and Cell Biology	4
PBIO 108	Morph & Evo of Vascular Plants	4
or PBIO 109	Plant Systematics	
Concentration Electives		
At least twelve credits of courses relevant to plant biology (at least two must be PBIO courses and at least two must be 200-level courses) selected in consultation with the student's advisor.		12

¹ PBIO 185 and PBIO 187 may be substituted for BIOC 205, BIOC 206, and BIOC 207 with instructor permission.

To learn more about the undergraduate program, visit the Plant Biology department's website.