

# BS in Plant Sciences with Emphasis in Breeding, Biology and Biotechnology

## Degree Program Description

From the food on our plates to the homes we live in to the fuel in our vehicles, plants impact all aspects of our daily lives. As an ever-growing human population continues to increase the demand for crops and other plant products, so too does the demand for plant scientists. Plant Sciences addresses the challenges from the field to the laboratory. Students enroll in a generalized core curriculum, then further refine their expertise in the Breeding, Biology & Biotechnology emphasis area. Plants are an integral component of the food, fiber, and medicinal components necessary to meet current and future population demands. Manipulation of plants at the cellular level can improve yields, pest resistance, and enhance nutritional value. Students in this emphasis area will gain classroom and real world experience (research opportunities in labs; internships with industry partners) to prepare for challenging careers or advanced education. From commercial plant breeders to lab managers, trained students are in high demand for rewarding opportunities.

## Major Program Requirements

Students are required to completed the BS in Plant Sciences (<http://catalog.missouri.edu/collegeofagriculturefoodandnaturalresources/plantsciences/bs-plant-sciences/>) major program requirements in addition to the emphasis area requirements.

## Emphasis Area Requirements

Manipulation of plants at the cellular and genetic level can lead to improvements in crop performance and resistance to pests, as well as increase plant users. Job opportunities from the laboratory to the field are widespread in seed and chemical industries around the world.

### Breeding, Biology and Biotechnology Emphasis Area Requirements

ABM 2123	Quantitative Applications in Agricultural and Natural Resource Sciences	3
or STAT 1200	Introductory Statistical Reasoning	
CHEM 1320	College Chemistry I	4
AN_SCI 3213	Genetics of Agricultural Plants and Animals	3
or BIO_SC 2200	General Genetics	
PLNT_SCI 3225	Plant Breeding and Genetics	3
PLNT_SCI 4315	Crop Physiology	3
or PLNT_SCI 4320	Molecular Plant Physiology	
PLNT_SCI 4325	Advanced Plant Breeding	3
<b>Select three:</b>		
BIOCHM 3630	General Biochemistry	3
BIO_SC 2300	Introduction to Cell Biology	4
BIO_SC 3210	Plant Systematics	4
CHEM 2100	Organic Chemistry I	3
PLNT_SCI 3275	Grain Crops	3
PLNT_SCI 4313	Soil Fertility and Plant Nutrition	3

PLNT_SCI 4315	Crop Physiology (*Course not taken to fulfill requirement may be used in select 3)	3
or PLNT_SCI 4320	Molecular Plant Physiology	
PLNT_SCI 4400	Plant Anatomy	4
PLNT_SCI 4550	Plant Biotechnology	4
<b>Total</b>		<b>27-29</b>

## Semester Plan

Below is a sample plan of study, semester by semester. A student's actual plan may vary based on course choices where options are available.

First Year			
Fall	CR	Spring	CR
ENGLISH 1000		3 MATH 1100	3
ABM 1041		3 HIST 1200 (state law)	3
BIO_SC 1200		5 CHEM 1320	4
Humanities		3 Elective	5
PLNT_SCI 1120		1	
		<b>15</b>	<b>15</b>

Second Year			
Fall	CR	Spring	CR
CHEM 2100		3 SOIL 2106	2
AG_ED_LD 2250		3 PLNT_SCI 2125	3
SOIL 2100		3 BIO_SC 2300	4
ABM 2123		3 AGSC_COM 2220	3
Elective		3 Electives	3
		<b>15</b>	<b>15</b>

Third Year			
Fall	CR	Spring	CR
AN_SCI 3213		3 PLNT_SCI 3275	3
PLNT_SCI 3230W		3 PLNT_SCI 3710	3
PLNT_SCI 3225		3 PLNT_SCI 4313	3
BIOCHM 3630		3 Writing Intensive Course	3
Electives		3 Electives	3
		<b>15</b>	<b>15</b>

Fourth Year			
Fall	CR	Spring	CR
PLNT_SCI 3210		4 PLNT_SCI 4315	3
PLNT_SCI 4400		4 PLNT_SCI 4550	4
PLNT_SCI 4500		4 Capstone	3
Electives		3 Electives	5
		<b>15</b>	<b>15</b>

**Total Credits: 120**