

The following courses are required for all Agronomy students graduating in the Plant Breeding and Biotechnology Option. This is a science-oriented option recommended for those individuals who wish to work in the area of plant breeding or plant biotechnology either upon completion of the B.S. degree, or after continuing on to graduate school.

**AGRONOMIC SCIENCES** (21.5 credits)

AGRON 105	Leadership Experience	R	F, S, SS
AGRON 110	Prof. Dev. in Agronomy: Orientation	0.5(1-0)	F
AGRON 114	Principles of Agronomy	3(2-3to4)	F, S
AGRON 154	Fundamentals of Soil Science	3(2-2to4)	F, S
AGRON 210	Prof. Dev. in Agronomy: Career Planning	1(1-0)	F, S
AGRON 212	Grain and Forage Crops	4(3-2)	F, S
AGRON 230	Crop Structure-Function Relationships	3(3-0)	F, S
AGRON 310	Prof. Dev. in Agronomy: Internship	R	F, S, SS
AGRON 410	Prof. Dev. in Agronomy: Senior Forum	1(1-0)	F, S
AGRON 421	Introduction to Plant Breeding	3(3-0)	F

**Plus 3 elective credits** to be chosen in Agronomy with no more than 2 credits total from Agron 331, 370, 490, 491, and 496 allowed to meet the 3-credit requirement. (A minimum of 15 credits in Agronomy must be earned at Iowa State.)

**BIOLOGICAL SCIENCES** (26 credits)

BIOL 211/211L	Principles of Biology I & Lab	4(3-3)	F, S
BIOL 212/212L	Principles of Biology II & Lab	4(3-3)	F, S
BIOL 313/313L	Principles of Genetics & Lab	4(3-3)	F, S
BIOL 314/314L	Prin of Mol. Cell Biol. & Biochem. & Lab	4(3-3)	F, S
BIOL 315	Biological Evolution	3(3-0)	F, S
BIOL 330A	Plant Physiology	4(3-3)	S
GEN 410	Transmission Genetics	3(3-0)	F

**COMMUNICATIONS** (12.5 credits)

ENGL 104	First-Year Composition I	3(3-0)	F, S, SS
ENGL 105	First-Year Composition II	3(3-0)	F, S, SS
LIB 160	Library Instruction	0.5(1-0)	F, S
ENGL 314	Technical Communication	3(3-0)	F, S, SS
SP CM 212	Fundamentals of Public Speaking	3(3-0)	F, S, SS

**PHYSICAL SCIENCES** (17 credits)

CHEM 177/177L	General Chemistry & Laboratory	5(4-3)	F, S, SS
CHEM 178/178L	General Chemistry & Laboratory.	4(3-3)	F, S
CHEM 231/231L	Elem. Organic Chemistry & Lab.	4(3-3)	F, SS
[CHEM 211/211L	Quant. & Env. Analysis recommended]		
PHYS 111	General Physics	4(4-2)	F, S, SS
[PHYS 112	General Physics II recommended]		

**MATHEMATICAL SCIENCES** (14 credits)

MATH 165 & 166	Calculus I & II	4(4-0) & 4(4-0)	F, S, SS
<b>or</b>			
MATH 181 & 182	Calculus & Differential Equations for Life Sciences	4(3-2) & 4(3-2)	F, S
STAT 104	Introduction to Statistics	3(2-2)	F, S, SS
COM S 207	Programming I	3(3-1)	F, S

**HUMANITIES, ETHICS, AND SOCIAL SCIENCE** (15-18 credits)

Three credits each in ethics, U.S. diversity, international perspectives, humanities, agricultural issues and social sciences (all courses must be from approved lists).

**ELECTIVE CREDITS** (19-22 credits)

128 total credits required for graduation