| Iowa State University |  |
| :--- | ---: |
| Department of Agronomy | BIOTECHNOLOGY OPTION |
|  | 2005-2007 Catalog |

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 |  |  |
| AGRON 110 | Prof. Dev. in Agronomy: Orientation | $0.5(1-0)$ | F, S, SS |
| AGRON 114 | Principles of Agronomy | $3(2-3 t o 4) ~ F, ~ S ~$ |  |
| AGRON 154 | Fundamentals of Soil Science | $3(2-2$ to4) 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. [CHEM 211/211L Quant. \& Env. Analysis recommended] |  |  | 4(3-3) | F, SS |
|  |  |  |  |  |
| 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 or |  | $4(4-0) \& 4(4-0) F, S, S S$ |  |  |
| MATH 181 \&182 | Calculus \& Differential Equations | 4(3-2) \& 4(3-2) |  |  |
|  | for Life Sciences |  |  | 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

