

SEED SCIENCE

Administered by the Departments of Agricultural and Biosystems Engineering, Agronomy, Horticulture, and Plant Pathology.

Seed Science must be taken as a secondary major in conjunction with a primary major. The seed science program is designed for students with career interests in one or more aspects of the seed industry. Areas of study focus on seeds including production, conditioning, pathology, physiology, quality control, marketing, and seed plant designs.

Student Learning Outcomes

Upon graduation, students should be able to:

1. Demonstrate understanding of the science and principles of seed production systems, including seed quality assessment and conditioning, and clearly communicate the importance of seeds to our society.
2. Articulate the opportunities in the seed industry for seed-related careers.
3. Apply seed science and technology knowledge for solving seed quality and production problems encountered in the seed industry.

CURRICULUM IN SEED SCIENCE (SECONDARY MAJOR)

Total Degree Requirement: 128 cr.

COMPLETE COMMUNICATION AND LIBRARY REQUIREMENTS OF PRIMARY MAJOR AND 3 CR. FROM THE FOLLOWING:

ENGL 302	Business Communication	3
ENGL 309	Proposal and Report Writing	3
ENGL 312	Communicating Science and Public Engagement	3
ENGL 314	Technical Communication	3
SP CM 312	Business and Professional Speaking	3

BIOLOGICAL SCIENCES: 7 CR.

BIOL 211 & 211L	Principles of Biology I and Principles of Biology Laboratory I	4
or BIOL 212 & 212L	Principles of Biology II and Principles of Biology Laboratory II	
AGRON 320 or BIOL 313	Genetics, Agriculture and Biotechnology Principles of Genetics	3

PHYSICAL SCIENCES: 8-9 CR.

CHEM 163 & 163L	College Chemistry and Laboratory in College Chemistry	5
or CHEM 177 & 177L	General Chemistry I and Laboratory in General Chemistry I	

One of the following:

AGRON 259	Organic Compounds in Plants and Soils	3
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BBMB 221	Structure and Reactions in Biochemical Processes	3
CHEM 231 & 231L	Elementary Organic Chemistry and Laboratory in Elementary Organic Chemistry	4

MATHEMATICAL SCIENCES 6 CR.

MATH 140 or MATH 150	College Algebra Discrete Mathematics for Business and Social Sciences	3
Statistics course		3

AGRICULTURAL SCIENCES: 28-29 CR.

AGRON 181 or HORT 221	Introduction to Crop Science Principles of Horticulture Science	3
AGRON 182	Introduction to Soil Science	3
AGRON 206	Introduction to Weather and Climate	3
AGRON 217 or AGRON 331	Weed Identification Crops Practicum	1-2
AGRON 316 or HORT 321	Crop Structure-Function Relationships Horticulture Physiology	3
AGRON 354	Soils and Plant Growth	3
9 credits from AGRON, HORT, or TSM (6 credits at 300-400 level)		9

ECONOMICS AND BUSINESS: 9 CR.

ECON 101	Principles of Microeconomics	3
Six credits from the following:		6
ACCT 284	Financial Accounting	
ECON 102	Principles of Macroeconomics	
ECON 230	Farm Business Management	
ECON 234	Small Business Management	
ECON 235	Introduction to Agricultural Markets	
ECON 236	Agricultural Selling	
ECON 334	Entrepreneurship in Agriculture	
MGMT 370	Managing Organizations	
MKT 340	Principles of Marketing	

SEED SCIENCE: 16 CR.

AGRON 317	Principles of Weed Science	3
AGRON 338	Seed Science and Technology	3
AGRON 421	Introduction to Plant Breeding	3
ENT 376	Fundamentals of Entomology and Pest Management	3
PL P 408	Principles of Plant Pathology	3

One of the following:

AGRON 311	Professional Internship in Agronomy (seed related)	1
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AGRON 491	Seed Science Internship Experience	1-2
HORT 391	Horticultural Management Experience	1

HUMANITIES: 3 CR.

3 cr. from approved humanities list: <http://www.cals.iastate.edu/student-services/humanities> (<http://www.cals.iastate.edu/student-services/humanities/>)

SOCIAL SCIENCES: 3 CR.

3 cr. from approved social sciences list: <http://www.cals.iastate.edu/student-services/social-sciences> (<http://www.cals.iastate.edu/student-services/social-sciences/>)

ETHICS: 3 CR.

3 cr. from approved ethics list: <http://www.cals.iastate.edu/student-services/ethics> (<http://www.cals.iastate.edu/student-services/ethics/>)

REMAINING CREDITS (STUDENT CHOICE).

Because seed science is a secondary major, the courses taken by the student during the first year will vary, depending on the primary major (see typical program for the primary major).