The Sustainable Agriculture and Food Systems B.S. provides students with a strong foundation in biological sciences and a broad base of knowledge and experiences with modern agriculture and food systems. Sustainable Agriculture and Food Systems is an interdisciplinary field comprising the social, physical, and life sciences and beyond. Agriculture is key to solving many of the major challenges facing the world; such as producing food to meet the needs of an ever-growing population while conserving land, water, and soil resources.

Our students get hands-on experience in applied coursework, and we encourage our students to conduct research alongside faculty. Our students become practitioners and entrepreneurs of agricultural and food businesses, researchers and policy-makers at state/federal agencies and non-profit organizations, laboratory technicians, and agricultural educators. Some go on to obtain an advanced degree in the agricultural sciences.

Requirements

The SAFS B.S. program structure includes FOUR major components: foundation courses, courses in a student-designed emphasis area, program elective courses, and a capstone. You must earn a minimum grade of C- in all courses required for the major.

**Foundation** courses include 36 credits, which satisfy 5 of the University Discovery requirements.

**Student-Designed Emphasis** courses include 20 credits that make up a cohesive emphasis or focus area. Courses may be selected from the List of Approved Program Electives, but do not need to be on that list. An appropriate group of courses transferred from a completed 2-year program such as TSAS could serve as an emphasis area. Each student will define their emphasis area in consultation with their advisor and submit it to the SAFS program committee for approval prior to the start of their 6th semester.

**Program Elective** courses include 20 credits, chosen from the List of Approved Program Elective courses.

A **Capstone** experience must take place during senior year. There are two capstone options: SAFS 733 Advanced Topics in Sustainable Agriculture or ANSC 750 Collaborative Farm Design and Development. Your capstone MAY be counted towards elective or emphasis credits.

Of the Student-Designed Emphasis and Program Elective courses, at least 16 credits (not counting the capstone) must be earned at the 600-700 level.

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### Approved Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>AAS 421</td>
<td>Large Animal Behavior and Handling Techniques</td>
<td>2</td>
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<tr>
<td>AAS 423</td>
<td>Dairy Selection</td>
<td>2</td>
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<tr>
<td>AAS 425</td>
<td>Introduction to Dairy Herd Management</td>
<td>4</td>
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<tr>
<td>AAS 432</td>
<td>Introduction to Forage and Grassland Management</td>
<td>3</td>
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<tr>
<td>AAS 439</td>
<td>Fundamentals of Animal Health</td>
<td>2</td>
</tr>
<tr>
<td>AAS 574</td>
<td>Dairy Cattle Disease Seminar</td>
<td>2</td>
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<tr>
<td>ANSC 510</td>
<td>Integration of Culture and Agriculture in Ireland: Past, Present, and Future</td>
<td>2 or 4</td>
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<tr>
<td>ANSC 546</td>
<td>Animal Business Applications</td>
<td>4</td>
</tr>
<tr>
<td>ANSC 600</td>
<td>Field Experience</td>
<td>1-4</td>
</tr>
<tr>
<td>ANSC 602</td>
<td>Animal Rights and Societal Issues</td>
<td>4</td>
</tr>
<tr>
<td>ANSC 603</td>
<td>Introduction to Livestock Management</td>
<td>4</td>
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<tr>
<td>ANSC 605</td>
<td>Poultry Production and Health Management</td>
<td>4</td>
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<tr>
<td>ANSC 609</td>
<td>Principles of Animal Nutrition</td>
<td>4</td>
</tr>
<tr>
<td>ANSC 612</td>
<td>Genetics of Domestic Animals</td>
<td>4</td>
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<tr>
<td>ANSC 625</td>
<td>Animal Diseases</td>
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<td>ANSC 650</td>
<td>Dairy Industry Travel Course</td>
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<td>ANSC 698</td>
<td>Cooperative for Real Education in Agricultural Management (CREAM)</td>
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<tr>
<td>ANSC 701</td>
<td>Physiology of Reproduction</td>
<td>4</td>
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<td>ANSC 708</td>
<td>Ruminant Nutritional Physiology</td>
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<td>ANSC 719</td>
<td>Dairy Nutrition</td>
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<td>ANSC 715</td>
<td>Physiology of Lactation</td>
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<td>ANSC 724</td>
<td>Reproductive Management and Artificial Insemination</td>
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<td>ANSC 727</td>
<td>Advanced Dairy Management I</td>
<td>4</td>
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<td>ANSC 728</td>
<td>Advanced Dairy Management II</td>
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<tr>
<td>ANSC 750</td>
<td>Collaborative Farm Design and Development</td>
<td>4</td>
</tr>
<tr>
<td>ANSC 795</td>
<td>Investigations</td>
<td>1-4</td>
</tr>
</tbody>
</table>

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### University Requirements

In addition to meeting the SAFS major requirements, students must satisfy all University requirements including those that pertain to the minimum number of credits, grade-point average, writing-intensive courses, and the Discovery Program.
BIOL 409  Green Life: Introducing the Botanical Sciences  4
BIOL 510  Mushrooms, Molds, and Mildews: Introduction to the Fungal Kingdom  4
BIOL 541  Ecology  4
BIOL 566  Systematic Botany  4
BIOL 701  Plant Physiology  4
BIOL 704  Plant-Microbe Interactions  3
BIOL 720  Plant-Animal Interactions  4
BIOL 752  New England Mushrooms: a Field and Lab Exploration  4
BMS 503  General Microbiology Laboratory  2
CAN 407  Hospitality Sanitation and Safety  1
CEP 415  Community Development Perspectives  4
CHE 410  Energy and Environment  4
ECOG 401  Introduction to Ecogastronomy  4
EREC 600  Field Experience  1-4
EREC 601  Agribusiness Economics and Management  4
EREC 680  Agricultural and Food Policy  4
FORT 564  Arboriculture  3
FORT 576  Forest Products and Wood Science  4
FORT 577  Forest Harvesting Systems  4
FORT 579  Forest Fire Control and Use  2
GEN 772  Evolutionary Genetics of Plants  4
GEN 774  Techniques in Plant Genetic Engineering and Biotechnology  4
GEOG 670  Climate and Society  4
HMGT 403  Introduction to Food Management  4
HMGT 570  International Food and Culture  4
MKTG 530  Survey of Marketing  4
NR 425  Field Dendrology  4
NR 435  Contemporary Conservation Issues and Environmental Awareness  4
NR 504  Freshwater Resources  4
NR 506  Forest Entomology  4
NR 527  Forest Ecology  4
NR 602  Natural Resources and Environmental Policy  4
NR 643  Economics of Forestry  4
NR 650  Principles of Conservation Biology  4
NR 701  Ecological Sustainability and Values  4
NR 706  Soil Ecology  4
NR 729  Silviculture  4
NR 749  Forest Inventory and Modeling  4
NR 760  Geographic Information Systems in Natural Resources  4
NR 761  Environmental Soil Chemistry  4
NR 765  Community Ecology  4
NR 782  Forest Health in a Changing World  4
NR 785  Systems Thinking for Sustainable Solutions  4
NUTR 400  Nutrition in Health and Well Being  4
NUTR 405  Food and Society  4
NUTR 550  Food Science: Principle and Practice  4
NUTR 600  Field Experience in Nutrition  1-4
NUTR 720  Community Nutrition  4
NUTR 730  From Seed to Sea: Examining Sustainable Food Systems  4
NUTR 795  Investigations  1-4
RMP 724  Grantmanship, Evaluation, and Research  4
SAFS 517  Advanced Aspects of Brewing  4
SAFS 650  Field Experience  4
SAFS 651  Plant Pathology  4
SAFS 670  Systems Thinking, Land Use Capability and Sustainability in Aotearoa New Zealand  4
SAFS 671  Agroecology and Sustainable Land Management in Aotearoa New Zealand  4
SAFS 672  Pathways to Sustainable Agriculture and Food Systems in Aotearoa New Zealand  4
SAFS 673  Ecological Sustainability and Values  4
SAFS 680  Field Production Field Experience II  4
SAFS 689  Greenhouse Management and Operation  4
SAFS 700  Insect Pest Management  4
SAFS 701  Insect Pest Management  4
SAFS 709  Investigations  1-4
SAFS 795  Honors Senior Thesis  1-4
ZOOI 610  Principles of Aquaculture  4
MEFB 772  Fisheries Biology: Conservation and Management  3