SUSTAINABLE AGRICULTURE AND FOOD SYSTEMS MAJOR (B.A.)

https://colsa.unh.edu/agriculture-nutrition-food-systems/program/ba/sustainable-agriculture-food-systems-major

Description

The Sustainable Agriculture & Food Systems B.A. provides students with 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 advanced degrees in the agricultural sciences.

Requirements

The SAFS B.A. 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. 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 16 credits, chosen from the List of Approved Program Elective courses.

A Capstone experience must take place during the 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 NOT 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.

Approved Electives

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<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>
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<td>AAS 433</td>
<td>Dairy Selection</td>
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<tr>
<td>AAS 425</td>
<td>Introduction to Dairy Herd Management</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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<td>AAS 434</td>
<td>Equipment and Facilities Management</td>
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<td>AAS 439</td>
<td>Fundamentals of Animal Health</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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<td>ANSC 546</td>
<td>Animal Business Applications</td>
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<td>ANSC 548</td>
<td>Agricultural Business Management</td>
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<tr>
<td>ANSC 600</td>
<td>Field Experience</td>
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<tr>
<td>ANSC 602</td>
<td>Animal Rights and Societal Issues</td>
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<td>ANSC 603</td>
<td>Introduction to Livestock Management</td>
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<td>ANSC 605</td>
<td>Poultry Production and Health Management</td>
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<td>ANSC 609</td>
<td>Principles of Animal Nutrition</td>
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<tr>
<td>ANSC 612</td>
<td>Genetics of Animals</td>
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<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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<tr>
<td>ANSC 690</td>
<td>Livestock and Wildlife in Namibia: Challenges, Opportunities and Geography</td>
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<tr>
<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>
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<td>ANSC 708</td>
<td>Ruminant Nutritional Physiology</td>
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<td>ANSC 710</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</td>
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<td>ANSC 728</td>
<td>Advanced Dairy Management II</td>
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<td>ANSC 750</td>
<td>Collaborative Farm Design and Development</td>
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<td>ANSC 795</td>
<td>Investigations</td>
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<tr>
<td>BIOL 409</td>
<td>Green Life: Introducing the Botanical Sciences</td>
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<tr>
<td>BIOL 510</td>
<td>Mushrooms, Molds, and Mildews: Introduction to the Fungal Kingdom</td>
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<tr>
<td>BIOL 541</td>
<td>Ecology</td>
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<tr>
<td>BIOL 566</td>
<td>Systematic Botany</td>
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<tr>
<td>BIOL 701</td>
<td>Plant Physiology</td>
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<td>BIOL 704</td>
<td>Plant-Microbe Interactions</td>
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<td>BIOL 709</td>
<td>Plant Stress Physiology</td>
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<td>BIOL 720</td>
<td>Plant-Animal Interactions</td>
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<td>BIOL 752</td>
<td>New England Mushrooms: a Field and Lab Exploration</td>
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<td>BIOM 503</td>
<td>General Microbiology</td>
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<td>BIOM 504</td>
<td>General Microbiology Laboratory</td>
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<tr>
<td>CEP 415</td>
<td>Community Development Perspectives</td>
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<tr>
<td>CHE 410</td>
<td>Energy and Environment</td>
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</tbody>
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1 Some courses (e.g. genetics, microbiology) require CHEM 403 and CHEM 404 as a prerequisite. If you intend to take these courses, you should take CHEM 403 rather than CHEM 411.
### Sustainable Agriculture and Food Systems Major (B.A.)

**Course List**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECOG 401</td>
<td>Introduction to Ecogastronomy</td>
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<td>EREC 460</td>
<td>Field Experience</td>
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<td>EREC 681</td>
<td>Agribusiness Economics and Management</td>
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<td>EREC 680</td>
<td>Agricultural and Food Policy</td>
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<td>FORT 564</td>
<td>Arboriculture</td>
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<tr>
<td>FORT 576</td>
<td>Forest Products and Wood Science</td>
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<td>FORT 577</td>
<td>Forest Harvesting Systems</td>
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<tr>
<td>FORT 579</td>
<td>Wildland Fire Ecology and Management</td>
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<tr>
<td>GEN 604</td>
<td>Principles of Genetics</td>
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<tr>
<td>GEN 772</td>
<td>Evolutionary Genetics of Plants</td>
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<td>GEN 774</td>
<td>Techniques in Plant Genetic Engineering and Biotechnology</td>
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<td>GEOG 670</td>
<td>Climate and Society</td>
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<tr>
<td>HKMT 403</td>
<td>Introduction to Food Management</td>
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<td>HKMT 570</td>
<td>International Food and Culture</td>
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<td>MGT 520</td>
<td>Topics in Management</td>
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<td>MKTO 530</td>
<td>Survey of Marketing</td>
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<td>NR 425</td>
<td>Field Oenology</td>
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<td>NR 435</td>
<td>Contemporary Conservation Issues and Environmental Awareness</td>
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<td>NR 504</td>
<td>Freshwater Resources</td>
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<td>NR 506</td>
<td>Forest Entomology</td>
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<td>NR 527</td>
<td>Forest Ecology</td>
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<td>NR 602</td>
<td>Natural Resources and Environmental Policy</td>
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<td>NR 643</td>
<td>Economics of Forestry</td>
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<td>NR 650</td>
<td>Principles of Conservation Biology</td>
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<td>NR 706</td>
<td>Soil Ecology</td>
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<td>NR 729</td>
<td>Silviculture</td>
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<td>NR 749</td>
<td>Forest Inventory and Modeling</td>
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<td>NR 760</td>
<td>Geographic Information Systems in Natural Resources</td>
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<td>NR 761</td>
<td>Environmental Soil Chemistry</td>
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<td>NR 765</td>
<td>Community Ecology</td>
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<td>NR 782</td>
<td>Forest Health in a Changing World</td>
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<td>NR 785</td>
<td>Systems Thinking for Sustainable Solutions</td>
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<tr>
<td>NUTR 400</td>
<td>Nutrition in Health and Well Being</td>
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<td>NUTR 405</td>
<td>Food and Society</td>
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<tr>
<td>NUTR 550</td>
<td>Food Science: Principle and Practice</td>
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<td>NUTR 600</td>
<td>Field Experience in Nutrition</td>
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<td>NUTR 720</td>
<td>Community Nutrition</td>
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<td>NUTR 730</td>
<td>From Seed to Sea: Examining Sustainable Food Systems</td>
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<td>NUTR 795</td>
<td>Investigations</td>
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<td>RMP 724</td>
<td>Research, Evaluation, and Data-Driven Decisions</td>
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<td>SAFS 410</td>
<td>A Taste of the Tropics</td>
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<td>SAFS 415</td>
<td>Introduction to Brewing Art and Science</td>
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<td>SAFS 510</td>
<td>Agriculture and Development in the Neotropics</td>
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<td>SAFS 515</td>
<td>Technical Brewing</td>
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<td>SAFS 517</td>
<td>Advanced Aspects of Brewing</td>
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<td>SAFS 661</td>
<td>Fruit Crop Production</td>
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<td>SAFS 632</td>
<td>Urban Agriculture</td>
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<td>SAFS 641</td>
<td>Plant Pathology</td>
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<td>SAFS 670</td>
<td>Systems Thinking: Land Use Capability and Sustainability in Aotearoa New Zealand</td>
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<tr>
<td>SAFS 671</td>
<td>Agroecology and Sustainable Land Management in Aotearoa New Zealand</td>
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<td>SAFS 672</td>
<td>Pathways to Sustainable Agriculture and Food Systems in Aotearoa New Zealand</td>
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<tr>
<td>SAFS 673</td>
<td>Agricultural Production and Business Practice in Aotearoa New Zealand</td>
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<td>SAFS 679</td>
<td>Food Production Field Experience I</td>
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<td>SAFS 680</td>
<td>Food Production Field Experience II</td>
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<tr>
<td>SAFS 689</td>
<td>Greenhouse Management and Operation</td>
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<td>SAFS 733</td>
<td>Advanced Topics in Sustainable Agriculture</td>
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<td>SAFS 760</td>
<td>Insect Pest Management</td>
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<td>SAFS 795</td>
<td>Investigations</td>
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<td>SAFS 799</td>
<td>Honors Senior Thesis</td>
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<td>ZDOL 610</td>
<td>Principles of Aquaculture</td>
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<tr>
<td>MEFB 772</td>
<td>Fisheries Biology Conservation and Management</td>
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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, the Discovery Program, and foreign language (only for B.A. students).

### Student Learning Outcomes

- Students will demonstrate a working understanding of the interdisciplinary nature of agriculture and food systems and the basic principles underpinning sustainability including: economic viability, environmental stewardship, social responsibility, and the trade-offs between competing metrics of sustainability.
- Students will demonstrate in-depth knowledge, critical thinking and analysis, and effective written communication in a self-declared area of emphasis within the program.
- Students will gain an applied understanding of agriculture and food system sustainability by engaging in an experiential education opportunity.
- Students will be able to independently interpret, evaluate, and engage with research in the agricultural sciences, including its biological, physical, social, and/or economic aspects.