AGRICULTURE AND FOOD SYSTEMS MAJOR (B.S.)

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

Description

Building on a strong foundation in the biological sciences, the Agriculture and Food Systems B.S. offers a highly flexible curriculum to students interested in cultivating expertise in a wide variety of topics including modern agricultural practices, the science and management of working landscapes, local and regional food systems, value-added agricultural products, and the promotion of healthy eating through sustainable food production and policies. An interdisciplinary field comprising the social, physical, and life sciences and beyond, agriculture and food systems lie at the center of many of the major challenges facing the world, such as producing food to meet the needs of an ever-growing population while conserving natural resources and promoting human wellness.

Our students get hands-on experience in applied coursework and are actively encouraged to conduct impactful research alongside faculty. Our graduates 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

Degree Requirements

Minimum Credit Requirement: 128 credits

Minimum Residency Requirement: 32 credits must be taken at UNH

Minimum GPA: 2.0 required for conferral*

Core Curriculum Required: Discovery & Writing Program Requirements

Foreign Language Requirement: No

All Major, Option and Elective Requirements as indicated.
**Major GPA requirements as indicated.*

Major Requirements

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

Foundation courses include 49 credits, which satisfy at least 6 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 AGFS program committee for approval prior to the start of their 7th semester.

Elective courses include 16 credits, chosen from the *List of Approved Program Elective* courses.

A **Capstone** experience must take place during senior year. There are two capstone course options below. The 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.

Code	Title	Credits
Foundation Courses (B.S.)		
AGFS 405	Sustainable Agriculture and Food Production	4
AGFS 421	Introductory Horticulture	4
AGFS 502	Agroecology	4
AGFS 602	Emphasis Development and Professional Pathways in Sustainable Agriculture and Food Systems	1
AGFS 620	Food Systems & Community Resilience	4
ANSC 421	Introduction to Animal Science	4
BIOL 411	Introductory Biology: Molecular and Cellular	4
BIOL 412	Introductory Biology: Evolution, Biodiversity and Ecology	4
BIOL 528	Applied Biostatistics I	4
or NR 525	Statistical Methods and Applications	
AGFS 690	Agricultural and Food Policy	4
or NR 411	Environmental and Resource Economics Perspectives	
or ECON 402	Principles of Economics (Micro)	
CHEM 403	General Chemistry I [1]	4
or CHEM 411	Introductory Chemistry for Life Sciences	
CHEM 404	General Chemistry II	4
or BMCB 501	Biological Chemistry	
or BIOL 541W	Ecology	
NR 501	Studio Soils	4
Student-Designed Emphasis Area		
At least 20 credits, proposed using the emphasis area declaration form (see your advisor) at least 2 semesters prior to planned graduation date.		20
Electives		
Select 16 credits from the approved electives list below.		16
Capstone		
AGFS 733W	Advanced Topics in Agriculture and Food Systems	4
or ANSC 750	Collaborative Farm Design and Development	
Total Credits		**89**

[1] Some courses (e.g. genetics, microbiology) require CHEM 403 General Chemistry I and CHEM 404 General Chemistry II as a prerequisite. If you intend to take these courses, you should take CHEM 403 General Chemistry I rather than CHEM 411 Introductory Chemistry for Life Sciences.

Code	Title	Credits
Approved Electives		
AAS 421	Large Animal Behavior and Handling Techniques	2
AAS 423	Dairy Selection	2
AAS 425	Introduction to Dairy Herd Management	4
AAS 432	Introduction to Forage and Grassland Management	3
AAS 434	Equipment and Facilities Management	3
AAS 439	Fundamentals of Animal Health	2
AGFS 410	A Taste of the Tropics	4
AGFS 415	Introduction to Brewing Art and Science	4
AGFS 515	Technical Brewing	4
AGFS 601	Fruit Crop Production	4
AGFS 632	Urban Agriculture	4
AGFS 651	Plant Pathology	4
AGFS 670	Systems Thinking: Land Use Capability and Sustainability in Aotearoa New Zealand	4
AGFS 671	Agroecology and Sustainable Land Management in Aotearoa New Zealand	4
AGFS 672	Pathways to Sustainable Agriculture and Food Systems in Aotearoa New Zealand	4

AGFS 673	Agricultural Production and Business Practice in Aotearoa New Zealand	4
AGFS 679	Food Production Field Experience I	4
AGFS 680	Food Production Field Experience II	4
AGFS 689W	Greenhouse Management and Operation	4
AGFS 733W	Advanced Topics in Agriculture and Food Systems	4
AGFS 750	Food System Solutions; Increasing Sustainability and Equity	4
AGFS 760W	Integrated Pest Management	4
AGFS 795	Investigations	1
AGFS 795W	Investigations	1
ANSC 548	Agricultural Business Management	4
ANSC 600	Field Experience	1-4
ANSC 602	Animal Rights and Societal Issues	4
ANSC 603	Introduction to Livestock Management	4
ANSC 605	Poultry Production and Health Management	4
ANSC 609	Principles of Animal Nutrition	4
ANSC 612	Genetics of Animals	4
ANSC 625	Animal Diseases	4
ANSC 650	Dairy Industry Travel Course	1
ANSC 690	Livestock and Wildlife in Namibia: Challenges, Opportunities and Geography	4
ANSC 698	Cooperative for Real Education in Agricultural Management (CREAM)	4
ANSC 701	Physiology of Reproduction	4
ANSC 710	Dairy Nutrition	4
ANSC 715	Physiology of Lactation	4
ANSC 724	Reproductive Management and Artificial Insemination	4
ANSC 727	Advanced Dairy Management I	4
ANSC 728	Advanced Dairy Management II	4
ANSC 750	Collaborative Farm Design and Development	4
ANSC 795	Investigations	1-4
BIOL 409	Green Life: Introducing the Botanical Sciences	4
BIOL 510	Mushrooms, Molds, and Mildews: Introduction to the Fungal Kingdom	4
BIOL 541W	Ecology	4
BIOL 566	Systematic Botany	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	3
BMS 504	General Microbiology Laboratory	2
CEP 415	Community Development Perspectives	4
CHBE 410	Energy and Environment	4
ECOG 401	Introduction to Ecogastronomy	4
AGFS 690	Agricultural and Food Policy	4
NR 579	Wildland Fire Ecology and Management	4
GEN 604	Principles of Genetics	4
GEN 772	Evolutionary Genetics of Plants	4
GEOG 670	Climate and Society	4
HMGT 570	International Food and Culture	4
MGT 520	Topics in Management	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 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 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 720	Community Nutrition	4
NUTR 730	From Seed to Sea: Examining Sustainable Food Systems	4
NUTR 795	Investigations	1-4
RMP 724	Research, Evaluation, and Data-Driven Decisions	4
MEFB 772	Fisheries Biology: Conservation and Management	4
ZOOL 555	Introduction to Entomology	4
ZOOL 610	Principles of Aquaculture	4

University Requirements

In addition to meeting the AGFS 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.

Student Learning Outcomes

Program 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 systems 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.