

Agroecology & Sustainable Food Systems (BS): Community Food Systems Concentration

To see more about what you will learn in this program, visit the Learning Outcomes website (<https://apps.oirp.ncsu.edu/pgas/>)!

The Bachelor of Science in Agroecology and Sustainable Food Systems is offered jointly through the Departments of Crop and Soil Sciences and Horticultural Science. This multidisciplinary major offers students diverse courses, hands-on learning, community engagement opportunities, internships, and research experiences to address the grand challenges of agriculture and food systems. Students can choose from three career path concentrations – Agroecology Research and Production, Community Food Systems, and Urban Horticulture.

The Agroecology Research and Production (<http://catalog.ncsu.edu/undergraduate/agriculture-life-sciences/crop-soil-sciences/agroecology-sustainable-food-systems-bs-agroecology-research-production-concentration/>) concentration is for students interested in the deeper science of sustainable agriculture production practices, research, and graduate school opportunities in agriculture, entomology, horticulture, soil sciences and related sciences. Students will have the opportunity to learn from a wide diversity of faculty leading cutting edge sustainable agriculture research, many at the Center for Environmental Farming Systems (CEFS), a national recognized sustainable agriculture research, education and extension facility.

Community Food Systems is a broad concentration for students interested in connecting production with issues in the greater food system, such as food security, policy, community education or extension. Students can also participate in social science, agricultural economics, agriculture education research and others with food system with researchers at CEFS and NC State that support this concentration.

The Urban Horticulture (<http://catalog.ncsu.edu/undergraduate/agriculture-life-sciences/horticultural-science/agroecology-sustainable-food-systems-bs-urban-horticulture-concentration/>) concentration integrates horticulture production and agriculture business education for students interested in starting or managing their own sustainable horticultural farm, working with community gardens, and more. There are many focused horticulture classes, research and internship opportunities as well for this concentration.

Program Highlights:

- Students in our program gain valuable hands-on experience in sustainable and organic production in our hands-on Agroecology Education Farm, a student farm near campus where all the food produced goes back into NC State Dining cafeterias and the food pantry on campus.
- Students interested in Agroecology can also join the Agroecology Student Club at NC State who organize various sustainable agriculture and food system activities each semester.

- As a required part of the curriculum, students will complete either an internship program or research experience to gain practical and professional development experience. Students will have no problems finding an opportunity with the numerous sustainable agriculture researchers and community stakeholders that collaborate with NC State focused in sustainable agriculture and food systems.
- Seniors will complete a Senior Capstone Project through which they draw on both their major courses and their concentration to address a problem or issue that they identify.
- Agroecology and Sustainable Food System students have the opportunity to student abroad with the various global food and sustainable agriculture focused study abroad programs in Ireland, Scotland, England, Mexico and others.

Contact Person

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For more information about our program, visit our website (<https://cals.ncsu.edu/crop-and-soil-sciences/agroecology-and-sustainable-agriculture/>).

Plan Requirements

Code	Title	Hours	Counts towards
Orientation			
ALS 103	Freshman Transitions and Diversity in Agriculture & Life Sciences	1	
or ALS 303	Transfer Transitions and Diversity in Agriculture & Life Sciences		
CSSC 290	Professional Development in Crop & Soil Sciences	1	
Mathematics & Natural Sciences			
Select one of the following:		3	
MA 121	Elements of Calculus		
MA 131	Calculus for Life and Management Sciences A		
MA 141	Calculus I		
ST 311	Introduction to Statistics	3	
BIO 181	Introductory Biology: Ecology, Evolution, and Biodiversity	4	
BIO 183	Introductory Biology: Cellular and Molecular Biology	4	

or PB 200	Plant Life	
CH 101 & CH 102	Chemistry - A Molecular Science and General Chemistry Laboratory	4
AEC 360 or PB 360	Ecology	4
PY 131	Conceptual Physics	4
Communication/Advanced Writing		
COM 110 or COM 112	Public Speaking Interpersonal Communication	3
Select one of the following:		3
AEE 311	Communication Methods and Media	
ENG 331	Communication for Engineering and Technology	
ENG 332	Communication for Business and Management	
ENG 333	Communication for Science and Research	
Major Requirements		
ARE 201	Introduction to Agricultural & Resource Economics	3
CS 230	Introduction to Agroecology ¹	3
CS/HS 410	Community Food Systems	3
CS 415	Integrated Pest Management	3
CS 430	Advanced Agroecology	4
CS/HS 480	Sustainable Food Production (capstone)	1
FS/NTR 301	Introduction to Human Nutrition	3
SOC 202	Principles of Sociology	3
SOC 350	Food and Society	3
SSC 200	Soil Science ¹	3
SSC 201	Soil Science Laboratory	1
SSC 427	Biological Approaches to Sustainable Soil Systems	3

SSC 428	Service-Learning in Urban Agriculture Systems	1
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Experiential Learning 3

Select one of the following:

CSSC 492	Professional Internship Experience in Crop and Soil Sciences	
CSSC 493	Research Experience in Crop and Soil Sciences	
ALS 494	International Learning Experience in Agriculture and Life Sciences	
HS 494	Teaching Experience in Horticultural Science	

Concentration Electives

Foundational Elective	3
Agricultural Sciences Electives	9
Economics, Education and Policy Electives	9
Advanced Economics, Education and Policy Electives	9

GEP Courses

ENG 101	Academic Writing and Research ¹	4
GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/)		6
GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)		2
GEP US Diversity, Equity, and Inclusion (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-usdei/)		3
GEP Global Knowledge (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-global-knowledge/) (verify requirement)		
Foreign Language Proficiency (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/foreign-language-proficiency/) (verify requirement)		

Free Electives

Free Electives (12 Hr S/U Lmt)	4
Total Hours	120

¹ A grade of C- or higher is required.

² Students should consult their academic advisors to determine which courses fill this requirement.

Foundational Electives

Code	Title	Hours	Counts towards
CS 224	Seeds, Biotechnology and Societies	3	
ES 200	Climate Change and Sustainability	3	
FW 221	Conservation of Natural Resources	3	
IDS 203	Humans and the Environment	3	
SSC 185	Land and Life	3	
STS 323	World Population and Food Prospects	3	

Agricultural Sciences Electives

Code	Title	Hours	Counts towards
AEC 203	An Introduction to the Honey Bee and Beekeeping	3	
AEC 400	Applied Ecology	3	
CS 213	Crop Science	3	
CS 214	Crop Science Laboratory	1	
CS 216	Southern Row Crop Production - Cotton, Peanuts, and Tobacco	3	
CS 218	Southern Row Crop Production - Corn, Small Grains and Soybeans	3	
CS 251	Production of Forage Crops	3	
CS 411	Crop Ecology	3	
CS 424	Seed Physiology	3	
ENT 401	Honey Bee Biology and Management	3	
ENT 425	General Entomology	3	
ENT 526	Organic Agriculture: Principles and Practices	3	

HS 205	Home Food Production	3
HS 431	Vegetable Production	4
HS 432	Introduction to Permaculture	3
HS 451	Plant Nutrition	3
HS 462	Postharvest Physiology	3
HS 476	Crop Physiology and Production in Controlled Environments	3
PB 215	Medicinal Plants	3
PB 250	Plant Biology	4
PB 321	Introduction to Whole Plant Physiology	3
PB 345	Economic Botany	3
PB 346	Economic Botany Lab	1
PP 315	Principles of Plant Pathology	4
PB 450	Plant Ecology	3
SSC 332	Environmental Soil Microbiology	3
SSC 455	Soils, Environmental Quality and Global Challenges	3

Economics, Education and Policy Elective

Code	Title	Hours	Counts towards
AEE 206	Introduction to Teaching Agriculture	3	
AEE 230	Introduction to Cooperative Extension	3	
AEE 311	Communication Methods and Media	3	
AEE 323	Leadership Development in Agriculture and Life Sciences	3	
AEE 325	Planning and Delivering Non-Formal Education	3	
AEE 326	Teaching Diverse Learners in AED	3	
ARE 215	Small Business Accounting	3	
ARE 306	Agricultural Law	3	

ARE 309	Environmental Law & Economic Policy	3
ARE 311	Agricultural Markets	3
ARE 336	Introduction to Resource and Environmental Economics	3
COM 289	Science Communication and Public Engagement	3
GPH 201	Fundamentals of Global Public Health	3
NPS 340	Fundamentals of Grant Development for Nonprofits	3
IDS 201	Environmental Ethics	3
IDS 211	Eating through American History	3
NTR 210	Introduction to Community Food Security	3
NTR 310	Food Insecurity and Federal Nutrition Programs	3
NTR 330	Public Health Nutrition	3
IDS 203	Humans and the Environment	3

Advanced Economics, Education and Policy Elective

Code	Title	Hours	Counts towards
AEE 433	Leadership and Management of Volunteers in Agricultural and Extension Education	3	
AEE 435	Professional Presentations in Agricultural Organizations	3	
AEE 460	Organizational Leadership Development in Agriculture and Life Sciences	3	
AEE 450	Transformative Leadership in Agricultural and Life Sciences	3	

AEE 478	Advanced Issues in Extension Education	3
ARE 433	U.S. Agricultural Policy	3
ARE 448	International Agricultural Trade	3
NPS 340	Fundamentals of Grant Development for Nonprofits	3
PS 320	U.S. Environmental Law and Politics	3
SOC 311	Community Relationships	3
SOC 342	International Development	3

Semester Sequence

First Year

Fall Semester	Hours	
ALS 103 or ALS 303	Freshman Transitions and Diversity in Agriculture & Life Sciences or Transfer Transitions and Diversity in Agriculture & Life Sciences	1
CSSC 290	Professional Development in Crop & Soil Sciences	1
BIO 181	Introductory Biology: Ecology, Evolution, and Biodiversity	4
ENG 101	Academic Writing and Research	4
Select one of the following:		3
MA 121	Elements of Calculus	
MA 131	Calculus for Life and Management Sciences A	
MA 141	Calculus I	
Foundation Elective		3

Hours 16

Spring Semester

BIO 183 or PB 200	Introductory Biology: Cellular and Molecular Biology or Plant Life	4
COM 110 or COM 112	Public Speaking or Interpersonal Communication	3
GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/)		3
GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)		1
Agricultural Sciences Elective		3

Hours 14

Second Year

Fall Semester

CH 101	Chemistry - A Molecular Science	3
CH 102	General Chemistry Laboratory	1

CS 230	Introduction to Agroecology	3
AEC 360 or PB 360	Ecology or Ecology	4
GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/)		3
GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)		1
Hours		15

Spring Semester

ARE 201	Introduction to Agricultural & Resource Economics	3
SSC 200	Soil Science	3
SSC 201	Soil Science Laboratory	1
NTR/FS 301	Introduction to Human Nutrition	3
Economics, Education and Policy Elective		3
Agricultural Sciences Elective		3
Hours		16

Third Year

Fall Semester

SOC 202	Principles of Sociology	3
SSC 427	Biological Approaches to Sustainable Soil Systems	3
SSC 428	Service-Learning in Urban Agriculture Systems	1
CS/HS 410	Community Food Systems	3
Select one of the following:		3
AEE 311	Communication Methods and Media	
ENG 331	Communication for Engineering and Technology	
ENG 332	Communication for Business and Management	
ENG 333	Communication for Science and Research	
Economics, Education and Policy Elective		3
Hours		16

Spring Semester

CS 430	Advanced Agroecology	4
SOC 350	Food and Society	3
ST 311	Introduction to Statistics	3
Agricultural Sciences Elective		3
Economics, Education and Policy Elective		3
Hours		16

Fourth Year

Fall Semester

CS/HS 480	Sustainable Food Production (capstone)	1
PY 131	Conceptual Physics	4
Advanced Economics, Education and Policy Elective		3
Advanced Economics, Education and Policy Elective		3
Select one of the following:		3
CSSC 492	Professional Internship Experience in Crop and Soil Sciences	
CSSC 493	Research Experience in Crop and Soil Sciences	

ALS 494	International Learning Experience in Agriculture and Life Sciences	
Hours		14
Spring Semester		
CS 415	Integrated Pest Management	3
GEP US Diversity, Equity, and Inclusion (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-usdei/)		3
Advanced Economics, Education and Policy Elective		3
Free Electives		4
Hours		13
Total Hours		120

Career Opportunities

Interested in food policy and education, nutrition, food security, community impacts, and graduate school opportunities in sociology, economics, education and other disciplines related to food? Then Community Food Systems is for you. Career tracks include:

- Agricultural Educator
- Agriculture Extension Agent
- Community Education Specialist
- Community Garden Manager
- Local Food Procurement Professional
- Food Policy Specialist
- Food Security Professional
- Food Educator
- Community Garden Director
- Farmer/farm worker advocacy professional