



UNIVERSITY OF
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University Council

October 12, 2018

UNIVERSITY CURRICULUM COMMITTEE – 2018-2019

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Undergraduate Student Representative – Ali Elyaman

Graduate Student Representative – TBD

Dear Colleagues:

The attached proposal from the College of Agricultural and Environmental Sciences for a new Graduate Certificate in Sustainable Food Systems will be an agenda item for the October 19, 2018, Full University Curriculum Committee meeting.

Sincerely,

John Maerz, Chair

University Curriculum Committee

cc: Interim Provost Libby Morris
Dr. Rahul Shrivastav

Proposal for an Interdisciplinary Graduate Certificate in Sustainable Food Systems

I. Basic Information

- 1. Institution:** University of Georgia **Date:** August 30, 2017
- 2. School/College:** College of Agricultural and Environmental Sciences
- 3. Department:** Crop and Soil Sciences
- 4. Level:** Graduate
- 5. Proposed starting date for program:** Spring 2019

Abstract of the program for the University Council's agenda:

The pressing challenge of sustainably feeding the world calls for interdisciplinary integration of research, outreach, and education. Advances in agricultural and environmental sustainability, public health and nutrition, and economic and social well-being call for systemic and interdisciplinary research, which in turn require mechanisms for developing partnerships and collaboration. In response to these needs, we propose to launch an interdisciplinary graduate certificate program in Sustainable Food Systems (SFS) to expand opportunities for graduate training and faculty collaboration across several related units across campus. With strong and established academic and research programs in public health, agriculture, nutrition, anthropology, geography, landscape architecture, planning, engineering, ecology, business, law, pharmacy, education and social work, UGA is uniquely positioned to expand graduate training in this increasingly important area.

The proposed Interdisciplinary Graduate Certificate in Sustainable Food Systems (SFS) is designed to recruit, train, and mentor an increasingly diverse cohort of interdisciplinary agricultural researchers equipped to find innovative solutions to the challenges and need for sustainable food production, access, and utilization.

Response for Criteria for All Programs:

1. Purpose and Learning Outcomes

The proposed Interdisciplinary Graduate Certificate in Sustainable Food Systems (SFS) is designed to recruit, train, and mentor an increasingly diverse cohort of interdisciplinary agricultural researchers equipped to find innovative solutions to the challenges and need for sustainable food production, access, and utilization.

The learning outcomes for the certificate include:

- Developing an ability to identify, describe, and operationalize systems complexity as it relates to global and local food systems.
- Increasing understanding of the interdisciplinary nature of sustainability and how that can impact food systems.
- Gaining practical experience through interdisciplinary research and service-learning, which will enhance graduate degrees,
- Strengthening written and oral communication skills through interdisciplinary opportunities via professional development and outreach.

At the core of this certificate program is a two-tiered mentoring plan to meet the outcomes:

- (1) Students pursuing an SFS Certificate will work with Sustainable Food System Initiative (SFSI) affiliated faculty from different departments in order to explore both system approaches and interdisciplinary approaches to problem solving;
- (2) As new students are recruited, they will be paired with senior students in the program to encourage peer mentoring and to develop an esprit de corps among students. Development of research teams of students with faculty advisors will enhance the effectiveness of our mentoring.

Students participating in the certificate will be required to complete a minimum of 13 graduate credits consisting of three core courses in SFS and two SFS electives outside their home discipline (see section 4).

2. Need for Program

The pressing challenge of sustainably feeding the world calls for interdisciplinary integration of research, outreach, and education. Advances in agricultural and environmental sustainability, public health and nutrition, and economic and social well-being call for systemic and interdisciplinary research, which in turn require mechanisms for developing partnerships and collaboration. In response to these needs, we propose to launch an interdisciplinary graduate certificate program in Sustainable Food Systems (SFS) to expand opportunities for graduate training and faculty collaboration across several related units across campus. With strong and established academic and research programs in public health, agriculture, nutrition, anthropology, geography, landscape architecture and planning, engineering, ecology, business, law, pharmacy, education and social work, UGA is uniquely positioned to expand graduate training in this increasingly important area.

A food system is the network of activities that connect the production of food to the consumption of food. Food systems include production, distribution, and consumption components, which are connected through complex social, ecological and economic relationships. Students participating in the Graduate Certificate in Sustainable Food Systems will explore areas such as food security, resiliency and sustainability of the food system through interdisciplinary training.

Recent strategic planning and visioning exercises at UGA have emphasized the need to further enhance interdisciplinarity in graduate education. The 2010 university-wide Strategic Plan (UGA 2010) lists the goal to "integrate faculty, course work, research programs and seminars to create a truly interdisciplinary experience for the student" as one of five Strategic Priorities in the area of graduate and professional education. The 2020 Strategic Plan of the UGA Graduate School includes "enhance the culture of innovation and interdisciplinarity in graduate 5 education" as one of three major goals (UGA 2010). As of spring 2015, there were approximately 250 graduate students enrolled in interdisciplinary graduate degree programs. Further, the 2012 strategic plan of the UGA's College of Agricultural and Environmental Sciences (CAES) highlights "food, health and wellness" and "sustainable food production systems" as two of four specific Focus Areas that need to be addressed through interdisciplinary teaching, research, and extension programming (UGA CAES 2013).

Additional Information:

- Semester/Year of Program Initiation: Spring 2019
- Semester/Year Full Implementation of Program: Spring 2019
- Semester/Year First Certificates will be awarded: Spring 2019

- Annual Number of Graduates expected (once the program is established): 5
- Projected Future Trends for number of students enrolled in the program: 20

3. Evidence of student demand

We believe that, once established, a reasonable level of enrollment in this program is a minimum of 5 new students per year, with upper bounds of 20 students in subsequent years. The paragraphs below detail the substantial evidence we have found that student interest and demand for the program will be sufficient to sustain this number.

1. An immediate group of students interested in the program will be those participating in research, outreach, and academic programs of the faculty leading the efforts for this interdisciplinary certificate, as well as other colleagues working on sustainable food systems and related endeavors. Many of these students now are engaged in interdisciplinary research. The curriculum and the collaborations with faculty and peers in other departments participating in the certificate would enrich their program of study, enhance their learning, and expand their experience with other disciplines, better representing the type of work they are doing and have shown interest in. In fact, many students working with the faculty leading this effort were recruited into graduate school precisely because of the interdisciplinary nature of the research they were going to do. Additional faculty have shown interest in participation in this program by submitting project proposals for student fellowship funding under our USDA-NIFA National Needs Fellowship (NNF) grant. We have three applications to every one fellowship awarded.
2. Interest in sustainability among UGA students is evident through campus extracurricular activities, student demand for internships at the UGA Office of Sustainability, the overwhelming support of students for the green fee, and participation in related academic programs (e.g., Integrative Conservation PhD, Graduate Certificate in Sustainability). The certificate is complementary to other existing certificates, including one at the undergraduate level on local food systems, and one at the graduate and undergraduate levels on sustainability. Rather than compete against the existing programs, this new distinct certificate can be a recruitment tool. It will provide breadth, depth, and further specialization on food systems to students interested in sustainability, and provide a new interdisciplinary perspective on sustainability to students interested in food systems. Additionally, it offers students the opportunity to integrate the academic opportunities in the existing certificates to collaborative and transdisciplinary research and outreach efforts. Ample student interest in the existing programs is additional evidence of the potential for student demand for this certificate. For example, the certificate in sustainability for undergraduate students has 114 students enrolled just after one year, and the local food systems certificate has 25 students enrolled at present. It is important to note that units in charge of these two certificates are supportive and have encouraged the SFS certificate proposal (see letters).
3. One strength of this program is the service-learning component. Further evidence of potential student demand is the strong interest among students (graduate and undergraduate) in service learning related to food systems. The success of UGArden and Campus Kitchen are two examples. From Aug 2015 to July 2016 UGArden was used extensively by nine courses (275 students), with other courses using it to varying degrees, nine students conducted research projects, and students provided 7,412 volunteer hours at the garden. Additionally, around 400 UGA students and Athenians volunteer at Campus Kitchen each year, and 48 service-learning courses have partnered with it since fall 2012.

4. In September 2016, the Office of Sustainability conducted a survey among 64 graduate students to determine interest on sustainability among graduate students. With their permission, we are highlighting one of their results as evidence of student demand for our proposed program: In answer to the question "If UGA were to offer a Graduate Certificate in Sustainability, how likely are you to enroll?" Thirty-one students of the 57 who provided a response to the question indicated that they would be 75%-100% likely to enroll in a graduate certificate in sustainability.
5. In preparation for this proposal, we informally surveyed Masters students/graduates of the College of Agricultural and Environmental Sciences about whether they thought the certificate would have enough student demand. Most of those who responded had a positive response, provided that their department allows for the additional hours in the program of study. Some of the responses included the following: "I think many Extension Agents would be very much interested in a sustainability courses and certificate"; "I think food sustainability is a popular topic at the moment and would be something that students would be interested in"; "I would ... be interested in a specifically sustainable food systems certificate." "I do think a minimum of 10 students can be reached, particularly in the college of ag, where sustainability is often touched upon in other classes." "I can see horticulture students, ag econ and maybe even food science students being interested in the program. I think a lot of the hort/plant science students are interested in topics regarding sustainability and would love the certificate"; "The incentive for me to participate in certificate programs was that I was getting to essentially customize my degree.... certificates also allow you to show your interest and even personal values by obtaining them... and they potentially differentiate me from others who may also be pursuing similar job opportunities"; "My interest would be high IF I was able to get a unique experience through it... like community engagement, hands-on learning"; "The incentive to participate in certificate programs was the ability to tailor my graduate studies to my precise needs and career goals. Having completed two certificate programs while at UGA, I am positive that they both greatly impacted my career options and decisions going forward.... Based on the interests of incoming students I think this program would be extremely attractive to both graduate and undergraduate students."

Minority student enrollment

We believe that underrepresented student enrollment will be equivalent to or higher than the proportion of minority students in the total CAES student body. The intent of the Sustainable Food Systems Initiative team is to attract currently enrolled students at UGA from a wide variety of disciplines on campus, but also to attract students into our departments using the certificate and its interdisciplinary focus as a recruitment tool. In that sense, we have a recruitment effort focused on students underrepresented in STEM disciplines, as a commitment made in our current NNF grant. We believe that the values associated with the certificate may attract students who under different circumstances might be reluctant to enroll in seemingly traditional agriculture programs.

4. The design and curriculum of the program must be consistent with appropriate disciplinary standards and accepted practice.

Provide the following information:

A. Present a detailed curriculum outline of the program listing specific course requirements (to include programs of study, course prefix, number, and title).

Students participating in the certificate will be required to complete a minimum of 13 graduate credits consisting of three core courses in SFS, two SFS electives outside their home discipline, and a directed-learning capstone project.

Course structure:

Core courses (7 credits):

- (3 credits) AESC 8310 – Food Systems Sustainability, Security and Resilience)

Course Description: Food systems are defined as a set of activities ranging from production through to consumption. They are embedded within a complexity of social, economic, environmental, and political systems, which makes the goal of resilient, sustainable and secure systems the ultimate wicked problem. This course will use a systems approach to understand the current state of food system, and address the present and future sustainability, security and resiliency of the food system. Students will be introduced to the concept of the food system as a complex adaptive system and explore additional concepts of scale, resiliency, connectivity, and interaction of the various parts of the system. The course will explore how different lenses and perspectives from different disciplines come together in solving problems and the importance of transdisciplinary approaches needed to solve these complex problems. Finally, the course will explore how mental and mathematical modeling approaches are used facilitate holistic approaches to problem solving.

- (3 credits) Food systems service-learning practicum (Choose one of the two courses; the alternate course can be used as an elective). Both courses aim to help students develop awareness of key food system issues in the local community and engage student in efforts to increase the sustainability of the local food system.
 - GEOG 6890 – Athens Urban Food Collective (AUGC) Service Learning (3 hours) – Through cooperative agreement with local non-governmental agencies targeting hunger relief, this course provides students with service-learning experience growing produce for local consumption. Lectures, readings, and critical writing assignments address different aspects of the industrial food system, the nascent local food system, problems of hunger and poverty, and related issues.
 - CRSS 6020S (Spring) – Social Sustainability in Agricultural and Food Systems (3 hours) – What is social sustainability? Why should we care? How can we develop agricultural and food systems that are socially, as well as environmentally and economically, sustainable? How can we support ag/food systems that are healthy and equitable for producers and consumers? This course explores these questions through coursework and service- learning.
- (1 credit) Professional development course
 - ALDR 7100 (Fall) – Directed Study in Agricultural Leadership (Borron) - Integrating Teaching, Research, and Outreach in Sustainable Food Systems in which students will work with stakeholders to design, implement, and evaluate SFS educational programs for different audiences (higher education, K- 12 and 4-H, public), and develop their skills in science communication, leadership, cultural sensitivity, and management Practical experience is essential for scientists to understand the implications and social context of their work. While the main goal of our program is quality research and training, we

recognize the need for students to address real-world problems and to communicate their understanding of food system processes to diverse audiences.

Electives (a minimum of 6 credits): A minimum of two courses in topic areas outside of student's home discipline (initial list of course; may be amended). A faculty committee will be established to review and revise elective courses once a year.

Course prefix & number	Course Title	Credit Hours
AAEC 6640	Food Marketing and Merchandising	3
ALDR 6600	The Global Seminar - Global Issues in Agriculture and the Environment	3
ALDR(AFST)(LACS) 6710	International Agriculture Development	3
ANTH 8515	Institutional Dimensions of Sustainability	3
CRSS 6010	Principles of Sustainable Management	3
CRSS 6020S	Social Sustainability in Agricultural and Food Systems	3
CRSS 6030-6030L	Sensors in Precision Agriculture	3
CRSS 6050	Improving Nutrient and Energy Efficiency with Geographic Information Systems	4
CRSS 6060-6060L	Advanced Topics in Precision Agriculture	3
CRSS(HORT) 6400	Agro-Ecology	3
CRSS(HORT)(ECOL) 6590	Soil Fertility and Plant Nutrition	3
CRSS 6740	Integrated Pest Management	3
CRSS(HORT)(ANTH)(ECOL)(GEOG) 6931	Agroecology of Tropical America Field Trip	3-6
CRSS 8410	Advanced Topics in Sustainable Agriculture Management	3
ENVM 6650	Environmental Economics	3
ENVM 6800	Water Resource Economics and Management	3
FANR 6020	Sustainable Development	3
FANR(AAEC) 7860	Natural Resource and Environmental Economics I	3
FDST 7180E	Marketing of Value-Added Foods	3
FDNS 6600E	Food and Nutrition Policy	3
FDNS 6640E	Food Sanitation and Safety	3
FISH(ECOL)(MARS)(WILD) 6550-6550L	Sustainable Aquaculture	4
GEOG 6810	Conservation Ecology and Resource Management	3
GEOG 6860	The Industrial Agro-Food System and Its Alternatives	3
GEOG 6890	Athens Urban Food Collective (AUFC) Service Learning	3
HORT 6030S	Sustainable Community Food Production	3

HORT 6050	Greenhouse Management I	3
HORT(CRSS)(ENTO) (PATH) 6125	Organic Agricultural Systems	4
HORT(CRSS) 6440-6440L	Environmental Physiology	4
HORT 6990	Environmental Issues in Horticulture	1
HPAM 7050	Health Policy and Obesity	3

B. Identify which aspects of the proposed curriculum already exist and which constitute new courses.

AESC 8310 is the only new course created for this program. All other courses currently exist.

C. Identify model programs, accepted disciplinary standards, and accepted curricular practices against which the proposed program could be judged. Evaluate the extent to which the proposed curriculum is consistent with these external points of reference and provide a rationale for significant inconsistencies and differences that may exist.

A recent review of current literature related to university-level food systems education finds that "effective food systems program approaches include emphasizing interdisciplinarity and a systems approach and balancing experience, theory, and practical skills acquisition" (Hilimire et al. 2014, p. 722). These findings, along with a number of model programs, guides the structure of this certificate. Key components of all of these programs include several core courses that emphasize interdisciplinarity and a systems approach to understanding food systems, as well as a requirement that students select from approved elective courses in areas outside their home discipline/department.

Similar programs at Land Grant Universities:

Iowa State University – Sustainable Ag MSc & PhD, and minor (Minor is 12-13 credits)
Interdisciplinary curriculum include biological, social, and economic elements

<https://susag.iastate.edu/>

- Agroecosystems Analysis (SUSAG 509) – 4 credits **OR** Foundations of Sustainable Agricultures (SUSAG 610) – 3 credits
- Sustainable Agriculture Colloquium (SUSAG 600) – 3 credits
- Courses must be taken from *two* cross-disciplinary areas – 6 credits (cross disciplinary areas are defined)

Michigan State University – Ecological Food & Farming Systems Specialization (13 credits)

<http://www.effs.msu.edu/requirements.html>

- Interdisciplinary committee, with at least one faculty member from biogeochemical sciences and one from the social/economic sciences
- Core course (7 credits)
- Elective course (6 credits) – at least one biological science and one social science course, selected from an approved list

Washington State University – Graduate certificate in Sustainable Agriculture (9 credits)

<http://css.wsu.edu/graduate-studies/graduate-certificate-in-sustainable-agriculture/>

- 2 core courses (Current Research in Organic and Sustainable Agriculture AND Field Analysis of Sustainable Food Systems)
- One course in a discipline other than the student’s home discipline.

Several other Land Grant universities offer graduate degrees in areas related to sustainable food systems (e.g. University of Vermont, University of Wisconsin-Madison. See <https://sustainableaged.org/projects/degree-programs/>)

Other Certificate programs in non-Land Grant Institutions

Portland State University – Graduate Certificate in Sustainable Food Systems (18 credits)
<https://www.pdx.edu/food-certificate/>

Students take one course for each of the certificates 6 learning outcomes:

- Describe/define multiple perspectives on sustainable food systems
- Explain systems of power and privilege in food systems
- Apply learning in a community based setting
- Examine interdisciplinary and cross-sector nature of contemporary food systems
- Relate food systems issues to broader graduate program, professional, or personal experiences
- Evaluate strategies to address food system challenges

University of Michigan Sustainable Food Systems Initiative – Graduate Certificate in Sustainable Food Systems (15 credits)

<http://sites.lsa.umich.edu/sustainablefoodsystems/academic-programs/graduatelevelfoodsystemscourses/>

- 6 credits in Sustainability Knowledge Fundamentals
- 6 credits in Skill Set Development
- 3 credit Experiential Learning Capstone Experience (internship or other)

D. If program accreditation is available, provide an analysis of the ability of the program to satisfy the curricular standards of such specialized accreditation.

N/A

5. Faculty resources must be adequate to support an effective program.

An Executive committee has been established that will support advisory activities for the program. In addition, there are 40 faculty members actively involved with the UGA Sustainable Food Systems Initiative (SFSI) and are providing opportunities for faculty mentors. Dr. Elizabeth Kramer is currently teaching the new core course. No additional faculty will be needed to support the program.

Key Faculty members directly involved in this program:

Name	Position	Department	Activity
Elizabeth Kramer	Public Service Associate	Agriculture and Applied Economics	Certificate coordinator, Core Course Instructor
Jennifer Thompson	Assistant Research Scientist	Crop and Soil Sciences	Executive Committee Member, Core Course Instructor

Abigail Borron	Assistant Professor	Agricultural Education, Leadership and Communications	Executive Committee Member, Core Course Instructor
Hilda Kurtz	Professor	Geography	Executive Committee Member, Core Course Instructor
Maria Navarro	Professor Associate Director	Agricultural Education, Leadership, and Communication UGA Honors Program	Executive Committee Member
Harald Scherm	Professor – Department Head	Plant Pathology	Executive Committee Member
Janani Thapa	Assistant Professor	Health Policy	Executive Committee Member
David Knauft	Professor (Emeritus)	Horticulture	Executive Committee Member
Judy Harrison	Associate Professor	Food and Nutrition	Executive Committee Member
Jessica Holt	Assistant Professor	Agricultural Education, Leadership and Communications	Executive Committee Member

6. Library, computer, and other instructional resources needed

A. Library Resources

UGA Libraries provides access to an array of subscription databases on topics relevant to SFS, such as agriculture, food science, health, and nutrition. These include CAB Abstracts, Agricola, Food Science Source, PubMed, Web of Science, Science Direct, and other subject databases.

These indexes comprise over 20,000 journals, many in full-text, related to SFS. In addition, UGA Libraries provides access to over 6,000 print items and ebooks suitable for students in the SFS Certificate program. UGA Libraries also provides a number of direct research support to students and faculty. The libraries' current CAES liaison teaches library instruction sessions, conducts one-on-one consultations with students and faculty, and regularly serves as the point-of-contact for various access issues, including book purchases, Gil-Express and Interlibrary Loans, article requests, and database content and connectivity.

B. Computer and instructional resources.

There is no need for additional equipment.

7. Physical facilities necessary to fully implement the program.

SFS Certificate students will have access to a wide range of physical facilities and resources, including the J. Phil Campbell Sr. Research and Education Center in Watkinsville (a 1,050-acre facility focused on sustainable agricultural production and soil/water protection), UGArden (a student-run community garden), the Natural Resource Spatial Analysis Laboratory (conducting public service and outreach, training and research in the application of geospatial technology to natural resource management), and the ASPIRE Clinic (helping individuals and families improve health through better nutrition), among others. There is no need for additional facilities.

8. The expense to the institution (including personnel, operating, equipment, facilities, library, etc.) required to fully implement the program must be identified.

The College of Agricultural and Environmental Sciences currently supports a half-time administrative position for the SFSI. This person will assist the program director with the administration of the program. The staff administrator resides in the Department of Crop and Soil Sciences. Currently Liz Kramer, in the Department of Agricultural and Applied Economics, will direct the certificate program and teach the new course, AESC 8310. All core courses and electives will be taught by existing faculty, so no new faculty will be necessary.

SFSI is currently funded by USDA NIFA National Needs Fellowship program. We have 6 fellowships available to support master students for 2017-2021. In addition, the University of Georgia was selected for a fellowship program with the US Army War College. Students are active military earning PhDs, and the fellowships provide opportunities to explore an area of specialization. SFSI was chosen to support student's program of study in the area of Food Security and Agro-terrorism.

9. Commitment of financial support needed to initiate and fully develop the program must be secured.

- A. Identify the sources of additional funds needed to support the program and the probability of their availability.

We are currently exploring alternative funding from the USDA NIFA Higher Education Challenge Grants program and other opportunities from NSF and NIH to continue funding a small core cohort of graduate students.

- B. It is particularly important to include in this response the long-range plans for additional or expanded facilities necessary to support an effective program. Evaluate the timing and likelihood of such capital funding.

We do not anticipate the need for capital funding.

10. Provisions must be made for appropriate administration of the program within the institution and for the admission to and retention of students in the program in keeping with accepted practice.

Describe and evaluate the structure for the administration of the program. Explain the degree to which that structure is in keeping with good practice and accepted standards. Similarly, explain how and by what criteria students will be admitted to and retained in the program, and how these procedures are consistent with accepted standards for effective and successful programs.

The program will be administered through the Department of Crop and Soil Sciences, with oversight from the Sustainable Food Systems Initiative. The executive board is made up of faculty from College of Agricultural and Environmental Sciences, Family and Consumer Sciences, School of Public Health and Franklin College. This executive board will serve as the certificate steering committee. The committee is chaired by Dr. Elizabeth Kramer, from the Department of Agricultural and Applied Economics, and members include, Dr. Jennifer Thompson, Department of Crop and Soil Sciences; Dr. Maria Navarro, Dr. Abigail Borron, and Dr. Jessica Holt, Department of Agricultural Leadership, Education, and Communication; Dr. David Knauff, Department of Horticulture; Dr. Harald Scherm, Department of Plant Pathology;

Dr. Judy Harrison, Department of Food and Nutrition; Dr. Janani Thapa, Department of Health Science Policy, and Dr. Hilda Kurtz, Department of Geography.

The steering committee, will meet at minimum once a semester to support the Graduate Certificate in Sustainable Food Systems. Responsibilities of this committee will include monitoring current certificate courses, evaluating new courses for inclusion, recruit students and faculty, assess student progress and develop capstone projects. Administrative support will be provided by the College of Agricultural and Environmental Sciences, through an administrative position housed in the Department of Crop and Soil Sciences.

Graduate students will be required to apply for admission for the SFS certificate at the beginning of each semester. These applications will be evaluated by the steering committee at beginning of each semester. Students must show that they are maintaining academic standing to continue in the program. Students will be required to report progress toward completion of the certificate each semester. Students will receive their certificate at the end of the semester they completed all of their requirements.

Appendix: Learning Outcomes and Measures

1. Learning Outcome

Developing an ability to identify, describe, and operationalize systems complexity as it relates to global and local food systems.

1.1 Measure

Course grade for required core course: AESC 8310, Food Systems Sustainability, Security and Resilience.

1.2 Threshold for Success

Students will receive a grade of B or higher in the course.

2. Learning Outcome

Increasing understanding of the interdisciplinary nature of sustainability and how that can impact food systems.

2.1 Measure

Course grades for students' two (2) elective courses (must be outside of their home discipline and selected from the approved list of electives for the certificate).

2.2 Threshold for Success

Students will receive a grade of B or higher in both selected courses.

3. Learning Outcome

Gaining practical experience through interdisciplinary research, and service-learning, which will enhance graduate degrees.

2.1 Measure

Course grade for required core course: either GEOG 6890, Athens Urban Food Collective (AUFC) Service Learning, or CRSS 6020S: Social Sustainability in Ag & Food Systems.

2.2 Threshold for Success

Students will receive a grade of B or higher in the selected course.

4. Learning Outcome

Strengthening written and oral communication skills through interdisciplinary opportunities via professional development and outreach

2.1 Measure

Course grade for required core course: ALDR 7100, Integrating Teaching, Research, and Outreach in Sustainable Food Systems.

2.2 Threshold for Success

Students will receive a grade of B or higher in the course.

Approvals on File

Proposal: Graduate Certificate in Sustainable Food Systems

College: College of Agricultural and Environmental Sciences

Proposed Effective Term: Spring 2019

School/College:

- Crop and Soil Sciences Department Head (Spring 2018 Department Head), Dr. Donn Shilling, 3/30/2018
- College of Agricultural and Environmental Sciences Associate Dean, Dr. Josef Broder, 3/30/2018
- College of Agricultural and Environmental Sciences Dean, Dr. Samuel Pardue, 3/29/2018

Graduate School:

- Graduate School Dean, Dr. Suzanne Barbour, 9/20/2018