

IDS 2935: Biological Factors Affecting Food Justice

Quest 2

I. General Information

Class Meetings

- Fall 2024
- Periods 3 and 4 (9:35 am – 11:30 am) on Tuesdays in the Mechanical & Aerospace Engineering Building, Room 0211
- Period 3 (9:35-10:25 am) on Thursdays in McCarty Hall A, Room 2196

Instructor

- Dr. Kara Casy
- McCarty Hall B, Room 2089
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- 352-273-2215
- Office Hours: Mondays from 9-11 am and Fridays from 9-10 am

Teaching Assistant

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Course Description

How do we grow healthy crops and sustainable food systems that support the diversity of the local communities that they serve? Cultivating food crops requires a basic understanding of biological principles, and cultivating food justice requires a wider view of the societal context in which we grow. In this new Quest 2 course, students will analyze the biological phenomena and technological advances in urban and rural agricultural production and their impacts on food, the environment, and people. Reflecting on leadership from within marginalized and historically underserved communities throughout the semester, students will select research topics that analyze how these new technologies affect food production and diversity, equity, and resilience in the food system.

Quest and General Education Credit

- Quest 2
- Biological Sciences
- Diversity (D)

This course accomplishes the [Quest](#) and [General Education](#) objectives of the subject areas listed

above. A minimum grade of C is required for Quest and General Education credit. Courses intended to satisfy Quest and General Education requirements cannot be taken S-U.

Required Readings and Works*

Science and the Garden: The Scientific Basis of Horticultural Practice, edited by David S. Ingram, et al., John Wiley & Sons, Incorporated, 2015. ProQuest Ebook Central, <https://ebookcentral.proquest.com/lib/ufl/reader.action?docID=7104065>.*

Cultivating Food Justice: Race, Class, and Sustainability, edited by Alison Hope Alkon, and Julian Agyeman, MIT Press, 2011. ProQuest Ebook Central, <https://ebookcentral.proquest.com/lib/ufl/detail.action?docID=3339335>.*

*Both of these textbooks are **free** for students to read online through the University of Florida Library (ProQuest Ebook Central).

Materials and Supplies Fees: n/a

II. Graded Work

Description of Graded Work

Graded Activity	Points	Percentage of Grade
Participation in Discussions	50	6.6%
Reflections (5)	50	6.6%
Reading Quizzes (11)	110	14.5%
Exams (4)	300 (100 points each, lowest grade dropped)	39.4%
Research Project Topic	10	1.3%
Research Project Outline	50	6.6%
Research Project First Draft	70	9.2%
Research Project Final Draft	50	6.6%
Research Project Slides	20	2.6%
Research Project Presentation	50	6.6%
Total	760	100%

Participation in Discussions:

Participation in class will be graded based on a student's engagement in small group and whole class discussion activities. Students will arrive to class prepared to discuss the readings, and new small groups will be assigned at the beginning of each class. The rubric below will be used to determine your participation grade for each class period. Each week you will be given a grade for your participation, ranging from 7-0 points (Ex: 6/7=86%). If you have an excused absence, that day will not be included in

calculating your participation grade. The weekly participation grades will be used to calculate participation points out of 50 toward the final grade (Ex: 86%=86 points).

7 Points	6 Points	5-1 Points	0 Points
Excellent	Good	Insufficient	Unsatisfactory
You come to class fully prepared to discuss the materials. Your comments are relevant and reflect a thoughtful engagement in the materials.	You are almost fully prepared to discuss the materials, but your comments do not include references to the materials.	You are not contributing to the discussion or referencing the materials.	You have an unexcused absence from the class meeting.

Reflections:

Eight reflections on the readings and class discussions will be collected throughout the course of the semester.

Reading Quizzes:

Eleven reading quizzes will be given throughout the semester to review important concepts from the readings and to help prepare students for excellent participation in the class activities and discussions.

Exams:

Three progress exams and one final exam will be given throughout the semester to review important course concepts that we discuss in class. The final exam is cumulative, and the lowest exam grade will be dropped at the end of the semester.

Final Research Projects:

A research project (1,000-1,500 words) will be due in stages throughout the semester on a topic related to a biological discovery or a technological advancement that affects food production (fruits, vegetables, and/or grains), chosen by each student at the beginning of the semester. Students are encouraged to be creative and specific, focusing on a technology and crops that they have a personal interest in learning more about. Scaffolded progress reports in the form of outlines and drafts related to the research project will be due throughout the semester to encourage reflection and incorporation of key concepts that we explore in class together.

Grading Scale

For information on how UF assigns grade points, visit: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

A	94 – 100%		C	74 – 76%
A-	90 – 93%		C-	70 – 73%
B+	87 – 89%		D+	67 – 69%
B	84 – 86%		D	64 – 66%

B-	80 – 83%		D-	60 – 63%
C+	77 – 79%		E	<60

III. Annotated Weekly Schedule

Week	Topics, Homework, and Assignments
Week 1	<ul style="list-style-type: none"> • Topics: The Basics of Botany, Food Security, and Food Justice • Thursday: Discussion: What is the difference between food security and food justice? What do they have in common, and what has been historically overlooked? • Required Readings/Works: Read <i>Science and the Garden</i>, Chapter 1: Diversity in the plant world, pp 37-60 [24 pages] Read <i>Cultivating Food Justice</i>, Introduction, pp1-20 [21 pages] and A continuing Legacy, pp 23-46 [24 pages] • Assignments: Reading Quiz, Reflection
Week 2	<ul style="list-style-type: none"> • Topics: Plant Structure and the Agricultural Industry • Tuesday: Field Trip: Student Pantry at UF • Thursday: Discussion: How does farmland ownership affect the various stakeholders in the food system? How has the historical relationship between Black farmers and agricultural development in the American South affected who is involved in U.S. agricultural production today? • Required Readings/Works: Read <i>Science and the Garden</i>, Chapter 2: The plant body: structure and function, pp 61-104 [44 pages] Read <i>Cultivating Food Justice</i>, From the Past to the Present, pp 47-64 [18 pages] • Assignments: Reading Quiz, Reflection, Research Topic
Week 3	<ul style="list-style-type: none"> • Topics: From the Ground Up: Soil, Roots, and Agricultural Policy • Tuesday: Soil Texture Activity • Thursday: Discussion: What is meant by the term “concentration of the food system,” and what are its causes? Who is impacted by the concentration of the food system, and how does it support or undermine food security, food sovereignty? • Required Readings/Works: Read <i>Science and the Garden</i>, Chapter 6: Soils and roots, pp 169-185 [17 pages] Read <i>Cultivating Food Justice</i>, Race and Regulation, pp 65-86 [22 pages] • Assignments: Reading Quiz, Reflection
Week 4	<ul style="list-style-type: none"> • Topics: Food Production Systems and Food Deserts

Week	Topics, Homework, and Assignments
	<ul style="list-style-type: none"> • Tuesday: Lecture: Cultivation Types; Cultivation Activity • Thursday: Food Desert Activity • Required Readings/Works: Read <i>Science and the Garden</i>, Chapter 7: Soil cultivation and fertility, pp 186-211 [26 pages] Read <i>Cultivating Food Justice</i> pages: From Industrial Garden to Food Desert, pp 89-120 [32 pages] • Assignments: Reading Quiz, Reflection, Research Outline
Week 5	<ul style="list-style-type: none"> • Topics: Vital Energy Resources: Light, Photosynthesis, and Food Security • Tuesday: Lecture: Turning Light into Food; Activity: Designing High and Low Light Growing Spaces • Thursday: Discuss: What impact do food assistance programs have on food security and food sovereignty? • Required Readings/Works: Read <i>Science and the Garden</i>, Chapter 8: The plant environment: light and water, pp 212-241 [30 pages] Read <i>Cultivating Food Justice</i>, Farmworker Food Insecurity and the Production of Hunger in California, pp 121-146 [26 pages] • Assignments: Reading Quiz, Reflection
Week 6	<ul style="list-style-type: none"> • Topics: Every Season: Growing Food and Justice • Tuesday: Field Trip: Field and Fork • Thursday: Discussion Activity: How can sustainable food production systems help support a more just food system? • Required Readings/Works: Read <i>Science and the Garden</i> Chapter 9: Plants and the seasons, pp 242-273 [32 pages] Read <i>Cultivating Food Justice</i>, Growing Food and Justice, pp 149-176 [28 pages] • Assignments: Reading Quiz, Reflection, One Page Summary of Research Project
Week 7	<ul style="list-style-type: none"> • Topics: Growing Together: Planting Seeds and Community • Tuesday: Exam; Seed Starting Activity • Thursday: Discuss: What is the difference between community food security, food security, and food sovereignty? Student debate activity on the benefits and implications of genetically engineered seeds and CRISPR/Cas9 technology related to community food security. • Required Readings/Works: Read <i>Science and the Garden</i> Chapter 10: Growing plants from seed, pp 274-288 [15 pages] Read <i>Cultivating Food Justice</i>, Community Food Security “For Us, By Us,” pp 177-196 [19 pages] • Assignments: Reading Quiz, Reflection, Exam
Week 8	<ul style="list-style-type: none"> • Topics: Growing Legacy: Environmental Justice and Vegetative Propagation • Tuesday: Lecture: Types of Vegetative Propagation; Vegetative Propagation Activity

Week	Topics, Homework, and Assignments
	<ul style="list-style-type: none"> • Thursday: Discuss: How are food justice and environmental justice similar, and how are they different? How may both be community based (or not)? • Required Readings/Works: Read <i>Science and the Garden</i>, Chapter 11: Vegetative propagation, pp 289-313 [25 pages] Read <i>Cultivating Food Justice</i>, pages: Environmental and Food Justice, pp 197-220 [24 pages] • Assignments: Reading Quiz, Reflection
Week 9	<ul style="list-style-type: none"> • Topics: The Impacts of Changing Climates • Tuesday: Lecture: Growing Region Specificity of Crops; Activity: Carbon Footprint of Our Chosen Diets • Thursday: Discuss: How does racialized embodiment affect community and individual food justice? • Required Readings/Works: Read <i>Science and the Garden</i>, Chapter 14: Climate and weather, pp 358-381 [24 pages] and Chapter 15: Climate and other environmental changes, pp 382-392 [11 pages] Read <i>Cultivating Food Justice</i>, pages: Vegans of Color, pp 221-238 [18 pages] • Assignments: Reading Quiz, Reflection, First Draft of Research Project
Week 10	<ul style="list-style-type: none"> • Topics: Alternative Production Systems and Rural Food Justice • Tuesday: Lecture: Hydroponic, Aeroponic, and Greenhouse Production; Peer Review of Draft Papers • Thursday: Discuss: How does the work toward rural food justice look different from urban food justice? What are the shared indicators of success for rural and urban community-based agriculture? When do they diverge? • Required Readings/Works: Read <i>Science and the Garden</i>, Chapter 16: Protected cultivation, pp 393-430 [38 pages] Read <i>Cultivating Food Justice</i>, Realizing Rural Food Justice, pp 239-260 [22 pages] • Assignments: Reading Quiz, Reflection, Research Project Peer Review
Week 11	<ul style="list-style-type: none"> • Topics: Production Goals: Preventing Plant Disease and Gentrification • Tuesday: Exam; Integrated Pest Management Activity • Thursday: Discuss: Why is it important that communities own urban agricultural initiatives? Does urban agriculture lead to gentrification? What are the key indicators of gentrifying neighborhoods? • Required Readings/Works: Read <i>Science and the Garden</i>, Chapter 17: The diversity of the undesirables, pp 431-454 [24 pages] Read <i>Cultivating Food Justice</i>, If They Only Knew, pp 263-282 [20 pages] • Assignments: Reading Quiz, Reflection, Exam
Week 12	<ul style="list-style-type: none"> • Topics: Production Goals: Sustaining Healthy Plant and Community Growth

Week	Topics, Homework, and Assignments
	<ul style="list-style-type: none"> • Tuesday: Lecture: Offense and Defense of Plant Health; Small Farm Management Plan Activity • Thursday: Discuss: How are justice and food justice connected? What happens when we support one and not the other? • Required Readings/Works: Read <i>Science and the Garden</i>, Chapter 18: Controlling the undesirables, pp 455-476 [22 pages] Read <i>Cultivating Food Justice</i>, Just Food?, pp 283-308 [26 pages] • Assignments: Reading Quiz, Reflection
Week 13	<ul style="list-style-type: none"> • Topics: Sustainable Post-Harvest Distribution and Food Sovereignty • Tuesday: Lecture: Plant Physiology after Harvest; Fruit and Vegetable Waste Activity • Thursday: Discuss: In seven words, how do we cultivate food justice? • Required Readings/Works: Read <i>Science and the Garden</i>, Chapter 19: Maturation, ripening and storage, pp 477-500 [24 pages] Read <i>Cultivating Food Justice</i>, Food Security, Food Justice, or Food Sovereignty?, pp 309-330 [22 pages] • Assignments: Reading Quiz, Reflection, Final Draft of Research Project
Week 14	<ul style="list-style-type: none"> • Topics: The Future of Food Security and Food Justice • Tuesday: Lecture: Low-Input Production • Thursday: Activity: Slides Review • Required Readings/Works: Read <i>Science and the Garden</i>, Chapter 22: Low-input and low-impact gardening, pp 532-544 [13 pages] and Chapter 23: Health, well-being and socio-cultural benefits, pp 545-565 [21 pages] Read <i>Cultivating Food Justice</i>, Conclusion, pp 331-347 [17 pages] • Assignments: Reading Quiz, Reflection, 5 Slides on Research Project
Week 15	<ul style="list-style-type: none"> • Tuesday: Exam • Thursday: Final Research Project Presentations • Assignments: Exam
Week 16	<ul style="list-style-type: none"> • Tuesday: Final Research Project Presentations • Thursday: Reading Day • Assignments: Final Presentations

IV. Student Learning Outcomes (SLOs)

At the end of this course, students will be expected to have achieved the [Quest](#) and [General Education](#) learning outcomes as follows:

Content: *Students demonstrate competence in the terminology, concepts, theories and methodologies used within the discipline(s).*

- Distinguish the basic biological principles and technological advances that support high-yielding crop growth, sustainable food production, and soil conservation, and how they impact the resilience and diversity of local food systems and community food security (B, D). Assessment: Quizzes, Exams, Reflections, Class Discussions, Final Research Project.
- Identify, describe, and explain the cross-disciplinary biological and social dimensions of sustainable local food production and the disproportionate representation and inequitable access of various communities to healthy, affordable fresh fruits and vegetables that support nutritious, culturally appropriate diets and regenerative agricultural conservation (Quest 2, B, D). Assessment: Quizzes, Exams, Reflections, Class Discussions, Final Research Project.
- Identify the social and economic determinants of food security, food sovereignty, and food justice (Quest 2, D). Assessment: Quizzes, Exams, Reflections, Class Discussions.

Critical Thinking: *Students carefully and logically analyze information from multiple perspectives and develop reasoned solutions to problems within the discipline(s).*

- Critically analyze quantitative and qualitative data appropriate for assessing new agricultural technologies that address important agricultural food production issues or challenges, and compare how these new technologies disproportionately affect different communities in the food system and society (Quest 2, B, D). Assessment: Quizzes, Exams, Reflections, Final Research Project.
- Evaluate the interconnectedness of crop growth, the environment, and people and synthesize the meaning of equity in the context of a sustainable food system (Quest 2, B, D). Assessment: Quizzes, Exams, Reflections, Class Discussions.

Communication: *Students communicate knowledge, ideas and reasoning clearly and effectively in written and oral forms appropriate to the discipline(s).*

- Develop and present, in terms accessible to an educated public, clear and effective responses to proposed agricultural practices and technological advances that affect the capacity of communities to grow food locally and sustainably and analyze issues or challenges related to supporting diversity in the local food system (Quest 2, B, D). Assessment: Quizzes, Exams, Reflections.
- Propose practices for increasing food production and food justice, and evaluate unintentional or structural barriers to environmentally sustainable food production, agricultural development, and food security in various communities (B, D). Assessment: Reflections, Quizzes, Exams, Final Research Project.

Connection: *Students connect course content with meaningful critical reflection on their intellectual, personal, and professional development at UF and beyond.*

- Reflect on how you, as an individual, and you, as a part of a community, can personally contribute now and in your career to supporting sustainable food production, agricultural technological innovation, and the resilience of diverse food systems (Quest 2, B, D). Assessment: Reflections, Exams, Final Research Project.

V. Quest Learning Experiences

1. Details of Experiential Learning Component

- **Final Research Projects:** At the beginning of the semester students will select research topics that explore a topic related to a biological discovery or a technological advancement that affects

food production (fruits, vegetables, and/or grains). Students are encouraged to be creative and specific, focusing on an area that they have a personal interest in learning more about. Students will incrementally add to their research projects with each week's lesson.

- **On-Campus Field Trips:** During two class periods students will complete activities at the Field & Fork Student Farm and at the UF Student Pantry to learn more about the resources on campus and their roles in growing food and creating more sustainable food access for UF students. Students will describe the benefits and challenges of producing food on campus and apply the principles they discuss in class to design their own campus garden and vegetable distribution hub that's fully accessible to the UF community.

2. Details of Self-Reflection Component

Each week students will be required to submit a personal reflection on the assigned reading and class discussion. Students are encouraged to be creative and examine why they think what they think, how these thoughts may affect themselves, and how their thoughts may affect others. In 300-500 words, students will discuss the following three questions in their weekly reflections:

- What do you think about this situation and why?
- How will you explain to friends or family members the importance of this situation?
- How will you use this information in your future career and personal life?

VI. Required Policies

Attendance Policy

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Students Requiring Accommodation

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

UF Evaluations Process

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

University Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Counseling and Wellness Center

Contact information for the Counseling and Wellness Center: <http://www.counseling.ufl.edu/>, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

The Writing Studio

The writing studio is committed to helping University of Florida students meet their academic and professional goals by becoming better writers. Visit the writing studio online at <http://writing.ufl.edu/writing-studio/> or in 2215 Turlington Hall for one-on-one consultations and workshops.

In-Class Recordings

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the

publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.