Instructor:
Anthony Kingsley, Local & Sustainable Product Lead, US Foods
Email: anthony.kingsley@northwestern.edu
https://isen.northwestern.edu/anthony-kingsley
Office Hours: Thursdays 5pm – 6pm by Zoom (alternate times available, please contact)

NU Faculty Sponsor:
Nyree Zerega (WCAS)
https://www.plantbiology.northwestern.edu/people/faculty/nyree-zerega.html

Class Room: Zoom; and Tech L211; https://www.northwestern.edu/fm/campus/classroom-catalog/tech-l211.html
Class Timing: Tuesday, Thursday, 6 – 7:30pm (Sept 17th – October 21st, First 5 weeks of quarter)

Course Synopsis: This class will cover the main sustainability topics related to growing, commercializing, transporting and consumption of food. It will focus on tangible methods to promote sustainability in the food industry such as regenerative agriculture techniques, reducing GHG emissions throughout the supply chain and reduced food waste. It will provide a broad overview of the economic, technological and policy considerations in implementing sustainable food solutions, with a focus on the private sector.

Course Goals: Students will develop a broad foundation in:

- **Consumer-Oriented Analysis**: Students will use behavioral data to understand the role of consumers in promoting sustainable food. Including a discussion on consumer trends and how 3rd party certifications play a role in consumer choice.
- **Agricultural Methods**: Students will learn about different agricultural methods such as organic agricultural practices, silvopasture, intercropping, GMO, etc. to understand the opportunity for agricultural change in promoting food sustainability.
- **Food Waste, Processing & Packaging**: Students will learn about the various methods to reduce foods waste including how of food processing and packaging strategies reduce waste.
- **Policy Considerations**: Students will learn about the various incentives, stakeholders and policymakers involved in sustainable food through the help of cases.
- **Environmental Impact Analysis**: Using metrics such as GHG intensity, students will apply their ability to analyze environmental impact to the food industry, assessing the environmental pros and cons of solutions also applying standard financial cost-benefit analyses to the food industry.
- **Distribution and Transportation**: Along with a focus on production/processing and the end consumer, students will also go over food distribution as an environmental challenge. This will apply concepts from transportation sustainability, traceability, etc. to the food industry.

This course will require some technical and quantitative competency but in general there are no prerequisites. As many students will not have deep knowledge of food systems and sustainability topics, the reading list is significant. Students are expected to complete readings prior to class. Please refer to the reading list for primary
texts that will be used for the class. There will also be supplemental readings, including articles and essays, that will be provided by the instructor.

As part of the class, we will have a series of guest lectures by business professionals from a variety of stakeholders that work in the sustainability field. Particular focus will be placed on the practical reality of how to assess and implement solutions in the food industry.

**Grading/Assessment:**

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<tr>
<th>Component</th>
<th>Weight</th>
<th>Details</th>
<th>Due</th>
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<tbody>
<tr>
<td>Case Write Ups</td>
<td>60%</td>
<td>Three write-ups 800-1200 words on key questions from case studies. Students will submit their write-ups before the class discussion session.</td>
<td>Week #2, #3, #4</td>
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<tr>
<td>Final Case</td>
<td>30%</td>
<td>Final paper 3,000-3,500 words that includes an analysis of a particular food industry. Focus on commercialization of a specific industry, for example, a student may choose to analyze the beef jerky industry. The student would have to consider practical measures the industry could implement in order to promote sustainability, analyzing the consumer-end, distribution and basic production/processing. Alongside this, the student would have to consider the financial and environmental cost-benefits of their solutions. This incorporates most of the analytical tools used in class. Although the paper is due at the end of week 5, students must have spoken to their instructor and selected an industry to focus on by the end of week 4.</td>
<td>Week #5, intermediate deadline at Week #4</td>
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<tr>
<td>Preparation, Participation and Effort</td>
<td>10%</td>
<td>Based on attendance and instructor assessment of preparation and participation in class on a weekly basis. There may be unannounced quizzes on the readings which students should be prepared for.</td>
<td>Ongoing</td>
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**Grading Policy:** Grades will be assigned based on all the work you have completed during the semester following the traditional practice of A=90-100, B=80-89, C=70-79, D=60-69, F<60.

- *It is expected that all work submitted for this class is original work of the student submitting.* All suspected violations will be reported to the McCormick College of Engineering’s Dean’s Office in accordance with the NU Academic Integrity Policy.
- *Late assignments will be accepted with extenuating circumstances, you must receive approval from the instructor prior to the submission due date.*
# CLASS OUTLINE (subject to change)

Class will be conducted through Canvas [https://canvas.northwestern.edu](https://canvas.northwestern.edu)

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<tr>
<th>Weekly Topic</th>
<th>Description</th>
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| **1: Introduction to Food Systems and Impacts of Sustainable Food** | - This module will introduce the class to the current agricultural methods of food production, and their environmental impacts  
- Discuss how the industry and society define sustainable food, and how we've arrived at that definition  
- Consider the complexities of the food system discussing the various stakeholder groups to be aligned and engaged as well as high level solutions proposed by these groups  
- Discussion on mapping the food supply chain |
| **Readings:** | - FAO. 2018. Sustainable Food Systems: Concept and Framework. [LINK](https://www.fao.org)  
- Hoey, L. and Sponseller, A. 2018. It's hard to be strategic when your hair is on fire. Agriculture & Human Values, 35(3), p.595-609 |
| **2: Sustainable Agriculture** | - Explore current sustainable food production solutions:  
  - Organic  
  - GMO  
  - Regenerative Agriculture – intercropping, no till, etc.  
  - Silvopasture  
- This module will have a policy/economic focus – discussing how the organic and Non-GMO standards are created and how they are being defined.  
- Discuss the definition and importance of Biodiversity in agriculture  
- Consider how consumers view Organic, Non-GMO, Regenerative Agriculture and motivation for purchasing and consumption |

**CASE STUDY A:** Silvopasture in Colombia, and Regenerative Agriculture by General Mills case study both Ranked by Project Drawdown as #9 and #11 solutions to combat climate change. In your opinion, are either silvopasture or regenerative agriculture approaches feasible environmentally and/or financially for businesses? What are barriers and/or benefits of these approaches? Discuss the different approaches and support your argument with evidence from the case studies, and from outside sources if necessary.  
**Due Date:** September 28, 2020 at 11:59pm
### Readings:

- GMO... OMG, SCIENCE VS podcast. 2017. Gimlet Media. [LINK](#)

### 3: Sustainable Production and Waste

*Guest Speaker*

- Discuss food waste from a systems level, talk through the value chain determining barriers and solutions to food waste – financial and social externalities
- Discuss how food waste strategies are being commercialized
- Consider how packaging reduces food waste, how compostable packaging is impacting the industry
- Discuss the impact of legislative restrictions, and EPA’s approach to reduce food waste

**CASE STUDY B:** Analyze the business models and effectiveness of a company that rescues and sells ‘ugly produce’ such as (Choose one): Imperfect Foods, Intermarche, or Bon Appetit. Based on your assessment, do these models have positive externalities in profit, environment and the community, or are these standard profit-based models? Discuss and support your argument leveraging outside sources as necessary.

**Due Date:** October 5, 2020 at 11:59pm

### Readings:

- Environmental Protection Agency, Food Recovery Hierarchy. [LINK](#)
- E. 2010. Are mushrooms the new plastic? TED Talk, [LINK](#)

### 4: Local Foods, Technology and Transparency

*Guest Speaker*

- Discuss local food systems and discuss financial, environmental and social externalities
- Consider how corporates and consumers view local foods and motivation for purchase and consumption
- Discuss traceability and transparency in the food system – consider current technology use and its financial, social and environmental impacts
- Discuss the complexities of distribution and inherent challenges of how product is delivered through technology advancement in transportation.

**CASE STUDY C:** Consider the meaning of ‘local foods’ and analyze the benefits or disadvantages of local food systems versus industrial food systems, financially and environmentally. Does technology, transparency or traceability play a role? Consider the [University of Michigan](#) case study. Discuss and support your argument with evidence from the case study, and from outside sources if necessary.  
Due Date: October 12, 2020 at 11:59pm

**Select case for final submission by first class of week. Inform the instructor for feedback**

**Readings:**
- Berry, W. 2001. The idea of a local economy. Orion Magazine
- Grunert, K. et al. 2014. Sustainability Labels on Food Products. Food Policy 44 p.177–189

**5: Impact Analysis of Sustainable Food**
- This week will focus on impact analysis for solutions. It will assess environmental and financial impacts using metrics such as GHG intensity.
- Consider how the consumer or diner views sustainability on the plate or in the store – what are the underlying motivations to purchase sustainable food; how does cost impact choice?
- How does communication and greenwashing impact food companies and consumers – how 3rd party certifications promote trust and understanding
- Impact analysis will be linked to incentives—this module will discuss how incentives can be effectively used to promote change

**FINAL IN CLASS DISCUSSION:** students will be asked to bring in examples of products they’ve identified for discussion and tasting with the class. Have a viewpoint on production, certifications, packaging, format and consumer demand.

**FINAL CASE STUDY DUE:** Discuss industry of choice.  
Due Date: October 25th, 11:59pm
Readings:

- Blanco, Craig, Sheffi. A Supply Chain View of Product Carbon Footprints: Results from the Banana Supply Chain

There will be no final exam for this class, there is a final case study.

Throughout the quarter, students will be required to view videos outside of class time. Videos are available online. Instructor may also assign a number of industry news services to discuss timely/current updates in markets design and regulation that are illustrative of core course topics.

Additional Optional Readings:

- U.S. Department of Agriculture, Know Your Farmers, Know Your Compass: The what and why of local and regional foods, p.5-16
- Dunn, Robert. 2017. Never Out of Season: How having the food we want when we want it threatens our food supply and our future

Northwestern University Policies & Resources
Academic Integrity
Academic integrity is taken very seriously at Northwestern. Students are responsible for reading and understanding Northwestern’s Academic Integrity policies. All suspected violations will be reported to the McCormick College of Engineering’s Dean’s Office. These include: cheating, plagiarism, fabrication, unfair advantage, unauthorized collaboration, and aiding and abetting of academic dishonesty. Students found in violation of academic integrity may receive a zero on the assignment or a failing grade for the course and may be suspended or permanently expelled from the University.

See Academic Integrity: A Basic Guide for more information.

AccessibleNU and Disability Accommodations
Northwestern University is committed to providing the most accessible learning environment as possible for students with disabilities. Should you anticipate or experience disability-related barriers in the academic setting, please contact AccessibleNU to move forward with the university’s established accommodation process (e: accessiblenu@northwestern.edu; p: 847-467-5530). If you already have established accommodations with AccessibleNU, please let me know as soon as possible, preferably within the first two weeks of the term, so we can work together to implement your disability accommodations. Disability information, including academic accommodations, is confidential under the Family Educational Rights and Privacy Act. See the AccessibleNU website for more information.

Illness and Medical Leave of Absence
Review the University’s policy on missing academic work due to illness. Your instructor cannot waive an assignment missed due to illness unless she can verify your illness with Health Services.

Discrimination and Sexual Harassment
Northwestern’s Policies on Discrimination, Harassment, and Sexual Harassment apply to all members of the University community, including students, staff, faculty, and third parties. Any student, staff, faculty member, or third party who believes that they have been discriminated against or harassed on the basis of their race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, pregnancy, parental status, marital status, age, disability, citizenship, veteran status, genetic information or any other classification protected by law, should contact the Office of Equity at (847) 467-6571. Additional information about the University’s discrimination and harassment policies, including the campus resources available to assist individuals with discrimination or harassment concerns, is available online on the Office of Equity Website. Students, staff, and faculty who report harassment, discrimination, or sexual misconduct are also protected under the University’s Policy on Non-Retaliation.

Sexual Misconduct and Reporting
Northwestern University is committed to fostering an environment where students are safe and free from sexual misconduct. Confidential resources are available to those who have experienced sexual misconduct. Faculty and instructors are not confidential resources and are required to report incidents of sexual misconduct, whether discussed in your assignments or in person, to the Office of Equity, which can provide information about resources and options. We encourage students who have experienced sexual misconduct to talk with someone to get support. For more information, including how to request interim protective measures and academic accommodations or file a complaint, see the Get Help page.

Recording of Synchronous Remote Class Sessions
This class or portions of this class will be recorded by the instructor for educational purposes. These recordings will be shared only with students enrolled in the course and will be deleted at the end of the Spring Quarter. Your instructor will communicate how you can access the recordings.

Unauthorized student recording of classroom or other academic activities (including advising sessions or office hours) is prohibited. Unauthorized recording is unethical and may also be a violation of University policy and state law. Students requesting the use of assistive technology as an accommodation should contact AccessibleNU. Unauthorized use of classroom recordings — including distributing or posting them — is also prohibited. Under the University’s Copyright Policy, faculty own the copyright to instructional materials — including those resources created specifically for the purposes of instruction, such as syllabi, lectures and lecture notes, and presentations. Students cannot copy, reproduce, display or distribute these materials. Students who engage in unauthorized recording, unauthorized use of a recording or unauthorized distribution of instructional materials will be referred to the appropriate University office for follow-up.

Statement on Fall 2020 COVID-19 Classroom Requirements

Students, faculty, and staff must comply with University expectations regarding appropriate classroom behavior, including those outlined below and in the COVID-19 Code of Conduct. With respect to classroom procedures, this includes:

- Students, faculty, and staff are required to wear a face covering in all public and shared environments on campus, including during class sessions when others are present.
- Students, faculty, and staff are expected to observe the rules of social distancing, which require that you are no closer than six feet from other individuals.
- No food is allowed inside classrooms. Drinks are permitted, but please keep your face covering on and use a straw.
- Chairs and tables in classrooms are set to maintain a six foot distance between individuals. Do not move chairs from their place in the room.
- There will be assigned seating in every class. Instructors may be asked to provide seating information to aid in contact tracing if a student tests positive for COVID-19.
- Class dismissals will start with the seat/row closest to the exit door and be managed by the instructor so as to minimize congestion near the exit.
- Students and faculty will allow those occupying rooms to fully exit before they enter the room.

In the event that a student fails to comply with the COVID-19 Code of Conduct or other University expectations related to COVID-19, the instructor may ask the student to leave the class. The instructor is asked to report the incident to the Office of Community Standards for additional follow-up.

Other Resources

Students can find useful resources for safety and security, academic support, and mental and physical health and well-being at the NUhelp website.