Northwestern University

Instructor:
Anthony Kingsley, MA, MSc
Local & Sustainable Product Lead, US Foods
https://www.linkedin.com/in/anthonykingsley/
Office Hours: TBD – possibly Monday 5-6pm

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

Class Room: TBD
Class Timing: Monday, 6-9pm (Spring 2020, First 5 weeks of quarter)

Course Synopsis: This class will cover the main sustainability topics related to the production, transportation, processing 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.

Course Goals: Students will develop a broad foundation in:

- Consumer-Oriented Analysis: Students will be able to analyze food waste issues from the perspective of end consumers. They 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, multistrata agroforestry, silvopasture, intercropping, indoor growing, etc. to understand the opportunity for agricultural change in promoting food sustainability.
- Processing Methods & Packaging: Students will learn about the various methods of food processing and analyze their environmental impacts. They will evaluate various sustainable processing solutions, and how packaging impacts sustainability.
- Policy Considerations: Students will learn about the various incentives, stakeholders and policy-makers 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 Students will also apply 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 panels and 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:**

Grading will be based on the following rubric:

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<tr>
<th>Component</th>
<th>Weight</th>
<th>Details</th>
<th>Due</th>
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<tr>
<td>Case Write Ups</td>
<td>60%</td>
<td>Three 2-3 page write ups on key questions from case studies. Students will submit their write-ups before the class discussion session. Late assignments will be accepted with extenuating circumstances.</td>
<td>Week #2, #3, #4</td>
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<tr>
<td>Final Case</td>
<td>25%</td>
<td>Final paper (~8-10 pages) that includes an analysis of a particular food 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</td>
<td>Week #5, intermediate deadline at Week #4</td>
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their instructor and selected an industry to focus on by the end of week 4.

| Preparation, Participation and Effort | 15% | 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. | Ongoing |

**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.

**CLASS OUTLINE (subject to change)**

<table>
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<th>Weekly Topic</th>
<th>Description</th>
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| **1:** Introduction to Food Systems (Production and Distribution) Environmental Impact Analysis and the Context of Food within Climate Change | • This module will have a technological focus. It will discuss the current agricultural methods of food production, and their environmental impacts.  
• It will discuss the current methods of food processing with their impacts.  
• Briefly touch on distribution/transportation as a general concern, but not a main focus.  
• It will discuss consumer choice as a method of reducing food waste and in promoting dietary change.  
• Discuss where food fits in to the global conversation of climate change |
| **2:** Introduction to Food Systems (Consumers) Agricultural Practices Explore conventional growing and food safety, explore organic, GMO, waste in the field, soil health, worker safety. Understand the economics of the various methods. | • Focus on sustainable food production solutions such as silvopasture, intercropping, regenerative agriculture etc.  
• This module will have a policy/economic focus -- examples of how policy can impact food production (e.g. ethanol subsidies, GMO, Animal Care, etc)  
• Will also consider food waste from a production standpoint, and biomass on the farm |
### 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 these approaches feasible environmentally and financially? Discuss the different approaches and support your argument with evidence from the case study, and from outside sources if necessary.

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<th>3: Sustainability in Food Systems Processing Methods and Packaging</th>
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<td>• Continue the conversation on sustainable agricultural practices, and efficiency -- Sustainable Seafood practices and indoor/urban growing</td>
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<td>• This week will focus on the most impactful, practical solutions in production, distribution and consumptions</td>
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<td>• It will iterate through the parts of the food system, proposing solutions to the problems in production/processing, distribution and consumption</td>
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<td>• Consider how packaging reduces food waste, how compostable packaging is impacting the industry – impact on Chinese restriction on accepting waste, and how food is used to create packaging</td>
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<td>• Light touch on how plastic is impacting the environment</td>
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<td>• Discuss Food waste from a systems level, the importance of composting and its barriers</td>
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### CASE STUDY B: Policy and legislation as a tool for sustainable food: French government regulation (1) (2) to decrease food wastage on the retail front, or the Good Samaritan Act of 1996. In your opinion, is such legislation effective in addressing sustainable food systems? Discuss and support your argument with evidence from the case study, and from outside sources if necessary.

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<th>4: Sustainable Solutions in Food Systems Local Food systems, transparency, technology, and consumer perceptions</th>
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<td>• What are the policy considerations for the implementation of the last 4 weeks? How can they be financed? Who are the concerned stakeholders?</td>
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<td>• Review local food systems and how they aid or create challenges to sustainability – impact on communities; environmental justice</td>
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| • Traceability and transparency in the food system – how does Blockchain or traceability platforms improve or
enable and promote sustainable solutions for the food system

- Mention of distribution and inherent challenges of how product is delivered through technology advancement in transportation – Tesla Electric Truck, Alternative Fuels, Refrigeration, etc.
- Begin discussion on sustainable food trends in retail and foodservice

**CASE STUDY C: Analyze the business models and effectiveness of a company that rescues and sells ‘ugly produce’ such as: Imperfect Foods, (Produce Specifications) or Intermarche.**

Based on your assessment, do these models have positive externalities or are these standard profit-based models? Discuss and support your argument with evidence from the case study, and from outside sources if necessary.

**Select case for final submission by first class of week.**

**5: Impact Analysis of Sustainable Food**

- GHG emissions assessments, greenwashing, and class wrap-up

- 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 Case Due**

*Bring in examples of sustainable food products – assess viability of products (ask the class for any severe allergies)*

There will be no final exam for this class, but final case will be due on scheduled final exam date.

**Course Readings:**
Week 1
Required readings:

- 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

Case Study:
- No case study assignment

Week 2
Required readings:

- Stephanie Strom. 2012. Has 'organic' been oversized?. in New York Times

Case Study:
- Palmer, Lisa. 2014. In the Pastures of Colombia, Cows, Crops and Timber Coexist. Yale 360 online

Week 3
Required readings:


Case Study:

- French Food Waste & Donation Case Study: https://www.pbs.org/newshour/show/is-frances-groundbreaking-food-waste-law-working
Week 4
Required readings:
Case Study:
- Imperfect Produce
- Produce Specifications

Week 5
Required readings:
- Craig, Sheffi, Blanco. A Supply Chain View of Product Carbon Footprints: Results from the Banana Supply Chain
- The Insatiable Appetite Podcast. The Hartman Group. 'Why Product Narrative Matters.' May 17, 2019
Case Study:
- No case study assignment

Additional readings:
- Berry, W. 2001. The idea of a local economy. Orion Magazine
- Conkin, P. Agriculture and the environment. p.168-173 in A Revolution Down on the Farm
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.

“Waste: The story of food waste by Anthony Bourdain”
“The Biggest little Farm”

**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**
Any student requesting accomodations related to a disability or any other condition is required to register with AccessibleNU (847-467-5530) and provide professors with an accomodation notification from AccessibleNU, preferably within the first two weeks of class. All information will remain confidential. 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.

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.