ISEN 462
Sustainable Supply Chains
Winter 2021, Northwestern University

This syllabus is a preliminary version
All readings and case studies are subject to change, as is the course structure. You will receive instructions on purchasing any materials required for the class, and should wait until the beginning of the quarter to do so.

LOGISTICS

Instructor: Ian Olson, Senior Director, Global Sustainability at McDonald’s Corporation.
Email: ian.olson@northwestern.edu
Teaching Assistant: None
Office Hours: Wednesdays 5pm – 6pm by Zoom (alternate times available, please contact)

Class Type: 1.0 credit (10 week) elective for Master of Science in Energy & Sustainability; open to other graduate students including Kellogg students and McCormick School of Engineering graduate students.

Class Location: We will have a roughly 50/50 split of virtual and in-person meetings, with all guest lectures being conducted via Zoom. All our Zoom meetings will be posted on Canvas, while all our in-person meetings will be held in Tech Room L361. Although not mandatory, I highly encourage that you have your camera on during our Zoom meetings—this helps create a more welcoming environment for discussion.

Class Timings: Winter Quarter 2021, January 4 – March 12, 2021; Final Presentations from March 15-19, 2021; Monday (in-person) & Wednesday (remote) from 3:30pm-5pm CT; 3 hours of instruction per week; first two weeks of class are remote due to mandatory quarantine; Other courses should be 50%+ in person (assuming COVID conditions allow)

Potential Guest Lectures
- Professor Achal Bassamboo, Charles E. Morrison Professor at Kellogg School of Management, Northwestern University
- Jay Paladugula, Global Head, Supply Chain Strategy & Transformation, Dover Corporation
- John Davies, Vice President and Senior Analyst, GreenBiz Group
- Michael Kobori, Chief Sustainability Officer, Starbucks Corporation
- Danielle Nkojo, Manager, Global Sustainable Products at Kontoor Brands, Inc. (Wrangler and Lee Jeans)
- Will Sarni, Founder and CEO, Water Foundry
COURSE DETAILS

Course Synopsis: This course will examine the intersection of sustainability and supply chains as an opportunity to develop more resilient and impactful integrated frameworks. These frameworks will provide a different “lens” for organizations to view existing strategies and identify new opportunities and risks. It will explore various industries and ‘big issues’ that affect supply chains in these industries. This will culminate in the development of a central ‘issue/industry matrix’ to guide assessment and decision-making in the future. Additionally, an examination of future trends and more conventional theory and supply-chain design principles will be touched on as part of the course.

The course will emphasize qualitative processes and metrics to evaluate; how to 1) evaluate situations from varying perspectives, 2) construct holistic integrated proposals and 3) how to influence and implement strategies. Students will have regular reading assignments outside of class, and should come to class prepared for discussion. As a part of the class, we will have a series of guest lectures from industry experts on various aspects of supply chains. Student presence is expected and active participation is encouraged at all times. Readings are liable to be added mid-quarter, especially for weeks containing guest lectures.

Course Goals:

- Foundational
  - Defining Sustainability - Develop an understanding of sustainability as a foundational concept and how it is being discussed in business and society.
  - Supply Chain Basics: Learn standard supply chain theory, organization and design practices in order to apply these to the supply chains of the future.
- Core Concepts
  - Supply Chains Are Not All Equal: Develop an understanding of supply chains in different industries to assess different characteristics and more effectively apply integrated sustainability methods and strategies.
  - The Big Issues: Gain and understanding of the pressing sustainability issues for supply chains and how they apply to different industries and different parts of the supply chain.
- Future Trends
  - Supply Chains Moving Forward: Students will learn about collaborative strategies, digitization and other future trends to be aware of in supply chains.
## Modes of Assessment

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<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Details</th>
<th>Due</th>
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<tbody>
<tr>
<td>Participation</td>
<td>15%</td>
<td>Based on attendance, in-class contribution to discussion and engagement outside the class via office hours. Valuable contributions are not limited to presenting original thoughts—you are expected to build on, clarify and question the thoughts of your peers. You are encouraged to use the Zoom chat and the ‘raise hand’ feature to this end.</td>
<td>N/A</td>
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<tr>
<td>Case Write-Ups (Individual)</td>
<td>20%</td>
<td>You will have to submit two 2-3 page case write-ups, responding to particular questions about the case study.</td>
<td>Week #3 Week #7</td>
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<tr>
<td>Final Report (Individual)</td>
<td>30%</td>
<td>You are expected to submit an executive summary position statement (no more than 10 sentences) and a 3-4 page report supporting the position statement by the end of the quarter. Imagine you are working for a publicly traded food/agricultural corporation, who are considering various measures to make their supply chain more sustainable. Without appealing to a simple sense of morality (i.e. “it’s just the right thing to do”) or specifically citing the broad concept of climate change, present a convincing business case in favor of investing in and integrating sustainability as part of the supply chain. What are the key components of the strategy, key tactics and overall approach? What would be the first step to launch the strategy? Quantitative metrics are valued, although not necessary.</td>
<td>Week #10</td>
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| Final Presentation      | 10% + 20% + 5% | The final presentation will be graded in three parts:  
  - 10% of your grade is based on a 2-page proposal your group submits at the end of Week 5.  
  - 20% of your grade is based on the group’s final presentation in Week 10.  
  - 5% of your grade is based on peer ratings from your group.  
The 2 to 3-page proposal will be the first step. | Groups assigned the end of Week 1 Proposal: Week #5 Presentation: Week #10 |
The presentation should analyze the supply chain of a large firm in any industry we discuss in class. Imagine yourselves as a group of outside consultants to the firm. Describe the supply chain, highlighting vulnerabilities, concerns and opportunities as you go along. Suggest solutions and present a convincing argument (economic/ethical) to justify your group's suggestions.

The presentation should be an expansion of the proposal with findings, outstanding issues, rationale for approach, priorities for the firm and recommendations to move forward.

**Grading Policy:** Grades will be based on all the modes of assessment listed above. Students will receive clear and consistent feedback on their work throughout the quarter, and improvements over the course of the quarter will be noted.

**Grading/Assessment**
All questions and problems regarding grades must be presented in writing within one week after the test, homework, or project has been returned. The grading scale is fixed, please do not wait until the end of the quarter if you are concerned about the direction of your grade. Grades will be assigned based on all the work you have completed during the semester using the following scale:

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<th>Grade</th>
<th>Minimum Score</th>
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<tr>
<td>A</td>
<td>93.333 to 100</td>
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<tr>
<td>A-</td>
<td>90.000 to 93.333</td>
</tr>
<tr>
<td>B+</td>
<td>86.666 to 90.000</td>
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<tr>
<td>B</td>
<td>83.333 to 86.666</td>
</tr>
<tr>
<td>B-</td>
<td>80.000 to 83.333</td>
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<tr>
<td>C</td>
<td>73.333 to 76.666</td>
</tr>
<tr>
<td>C-</td>
<td>70.000 to 73.333</td>
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<tr>
<td>D+</td>
<td>66.666 to 70.000</td>
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<tr>
<td>D</td>
<td>63.666 to 66.666</td>
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<tr>
<td>D-</td>
<td>60.000 to 63.333</td>
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<tr>
<td>F</td>
<td>&lt; 60.000</td>
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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.

- Submitting Assignments: Extensions will only be granted in extenuating circumstances. All assignments must be submitted by 11.59pm on the due date via the Canvas page for the course. In the unlikely event that Canvas fails, email your assignment directly to your instructor.

### COURSE OUTLINE AND READINGS (SUBJECT TO CHANGE)

<table>
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<tr>
<th>Week</th>
<th>Description</th>
<th>Assignments Due</th>
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| 1: Introductions and Defining Sustainability | • Introductions, expectations for the course, technology and syllabus read-through.  
• Central themes and the Industry/Issue matrix.  
• How do you define sustainability personally? Is there one widely accepted definition of sustainability?  
• Does the lack of one widely accepted definition help or hurt the ability to engage peers and integrate into organizations?  

**READING:**  
25 Years Ago I Coined the Phrase, Triple Bottom Line. Here’s Why It’s Time to Rethink It. (HBR)  
Business Case Study #1: Sustainability at IKEA Group  
Assign groups for final presentation on January 6th. |
| 2: Supply Chain Theory | • A brief history and overview of supply chains.  
• Components of a supply chain: logistics, operations, inventory, transportation, sourcing, risk, sales.  
• Building a strategic framework to analyze supply chains.  
• A practitioner perspective on evolving supply chains to incorporate sustainability.  

**READINGS:**  
Chopra and Meindl, Seven-Eleven Japan Case Study pg 61-67 (Not a case study for assignment)  
McKinsey - Starting at the Source: Sustainability in the Supply Chain  
HBR Article - A more Sustainable Supply Chain  
Submit top three companies for group project by Wed. January 13th at 11:59.  
Approval of company selections will be given to the teams by Friday, January 15th. |
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<th>3: State of the Sustainability Profession and Supply Chains</th>
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<td><strong>Note:</strong> MLK Day is observed this week.</td>
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<tr>
<td>- Overview and baseline of the Sustainability Profession.</td>
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<td>- How are companies discussing the issue of supply chain sustainability?</td>
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<td>- What are the emerging trends or concerns in the profession regarding supply chains?</td>
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**READINGS:**
- *GreenBiz State of the Profession Report* (pages 3-11 and 15-21)
- *GreenBiz Supply Chain Transparency Challenge 2018*

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<th>4: Not All Supply Chains Are Created Equal</th>
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<td>- Fundamental observation: not all supply chains are the same.</td>
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<tr>
<td>- Overview of supply chains in different industries: manufacturing, CPG, food service, technology, apparel/footwear.</td>
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<tr>
<td>- Characteristics, challenges, transparency and different analytical approaches.</td>
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<td>- A practitioners view of different supply chains and how they compare and contrast</td>
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**READINGS:**
- *GreenBiz Supply Chain Transparency Summit Report - 2020*
- *Starbucks Corporation: Building a Sustainable Supply Chain* (not for write up, reading only)

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<th>5: Big Issues: Climate, Energy and Social Equity</th>
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<td>- Climate as an issue to and opportunity for supply chains.</td>
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<tr>
<td>- Moving away from the politicization of climate to drive impact.</td>
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<tr>
<td>- What components of the supply chain influence climate and energy decisions?</td>
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<tr>
<td>- Social equity and the components of the supply chain.</td>
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**READINGS:**
- *MIT - Supply Chain Resilience in the Era of Climate Change*
- *McKinsey - Could climate become the weak link in your supply chain?*

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<th>6: Big Issues: Natural Resources and Water</th>
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<td>- The supply and demand for natural resources and water and how it can inform your approach.</td>
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<p>| Case Study #1 Due Wed. January 20th 11:59 pm (based on IKEA Case Study) | 2-page group presentation proposal due. Wed. Feb. 3rd, 11:59 pm |</p>
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<thead>
<tr>
<th>Topic</th>
<th>Notes</th>
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| 6: Supply Chain Components | • Which supply chain components influence these issues?  
• How does this issue connect to or impact the different types of supply chains?  
• Evolving from water stewardship, community implications of the supply chain.  
• The Water-Climate Nexus and the Real ‘Value’ of Water.  

READINGS:  
- Videos - Jason Clay, WWF How Big Brands Can Save Biodiversity, TED Talk  
- Case Study #2 Growing Better Together: General Mills Considers Pre-Competitive Collaboration to Advance Sustainable Supply Chains |
• Different approaches and the notion of ‘human capital’.  
• What supply chain functions can influence the issue?  
• How does this issue connect to or impact the different types of supply chains?  

READINGS:  
- HBR - Nike: Sustainability and Labor Practices 1998-2013 (not for write up assignment, reading only)  
- TBC Packaging Reading |
| 8: Designing Sustainability into the Supply Chain | • Making the case for a sustainable supply chain.  
• Introducing materiality analysis and benchmarking.  
• How do you identify and engage stakeholders?  
• Defining ‘total value’ and internalizing the externalities.  
• How do you influence action and integration? What is the role of leadership and governance?  
• Applying metrics and managing suppliers.  

READINGS:  
- BSR - Supply Chain Leadership Ladder  
- WBCSD - Sustainability and enterprise risk management: The first step towards integration |
| 9: Future Trends | • Resilience: Moving from supply chain |
sustainability to value-chain resiliency.
- Stakeholder collaborations, precompetitive collaborations, cross-industry collaborations.
- Waste and materials management.
- Public goals to aligned business frameworks.
- Impacts of digitization

READING:
Greening Global Supply Chains Report - The Sustainability Consortium
ERM Report - Building Business Resilience for the Decade of Action

| 10: Presentations and Conclusion | Group presentations followed by Q&A sessions.
|                                 | Wrapping up the course: key learnings, reviewing the industry/issue matrix.
|                                 | The power of shareholder proposals in shaping corporate agendas.
|                                 | The pressing need for multi-stakeholder collaboration and dialogue. |
| Final Reports and Final Presentations due by Sunday, March 7th at 11:59 pm |

POLICIES & RESOURCES

COVID-19 Implications
Students must follow all University policies and procedures surrounding COVID-19. This includes, but is not limited to:

- **Masks**: Northwestern requires community members to wear masks in all campus public and shared environments, including outdoor spaces and instructional spaces.
  - Disposable face masks will be available at identified building entrances in all campus buildings.
  - Clear face coverings may be worn to improve ability to read lips; if an accommodation is needed, please contact Accessible NU (students) or Office of Equity (faculty).
  - Face shields are no longer allowed as an alternative to a face mask, per guidance from the CDC and Northwestern Medicine. This includes instructional spaces regardless of social distancing.

- **Social Distancing**: Physical distancing of at least 6 feet must also be maintained where possible. Classroom occupancy has been adjusted and signage has been placed around buildings to facilitate social distancing.

- **Hand Washing**: Across the University, community members are expected to maintain responsible personal hygiene. Hands should be washed frequently, faces should be covered when sneezing or coughing, and individuals should not come to campus if they are sick. Limiting the touching of shared surfaces reduces the spread of the virus.

- **Seating Chart**: To facilitate contact tracing, should it occur, MSES will create a seating chart for each course and post it on the course Canvas page. Please be sure to sit in
Symptom Tracker: Completing your daily symptom check and staying home if you have any symptoms are important steps to fostering a healthy campus environment. Faculty, students, staff and visitors are expected to use the web app for daily health monitoring on days they come to campus.

COVID Testing: As noted below, ALL graduate students must receive a negative test during Wildcat Wellness and before starting in-person classes on January 19. Throughout the semester we expect MSES students to be tested weekly or bi-weekly. Please abide by the email reminders you receive from the testing center.

Wildcat Wellness: The University will again hold a Wildcat Wellness period from Jan 4 through January 17. During this time ALL graduate students must be tested for COVID-19 and ALL classes will be held remotely.

Review Student Expectations here.

It is also the policy of the MSES Program that all lectures will be recorded and offered in a synchronous, hybrid format. In Winter Quarter 2021 this means that students are expected to attend class in-person on Mondays and Tuesdays and that class will be held completely remote on Wednesdays and Thursdays. On in-person days there will always be a synchronous Zoom option for any students that feel ill or are uncomfortable coming to class. If the professor needs to alter this schedule, they will aim to announce the changes at least 24 hours in advance.

**Expectations for Class Participation**
Being prepared for class is about more than just showing up, it’s also about making sure you’ve completed the readings, homework, etc. so that you are able to make thoughtful contributions during class. Sitting silently and/or being unprepared can damage your participation grade. When in a virtual class, we expect students to keep their camera and mute on as much as possible. When in the classroom, we expect students to keep their phones off and put away.

**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 accommodations related to a disability or any other condition is required to register with AccessibleNU (847-467-5530) and provide professors with an accommodation 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 the illness can be verified (e.g., by University Health Services or other licensed health professionals).

**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](#).

**Class Recording**
This class or portions of this class will be recorded by the instructor for educational purposes and available to the class during the quarter. Your instructor will communicate how you can access the recordings. Portions of the course that contain images, questions or commentary/discussion by students will be edited out of any recordings that are saved beyond the current term.

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.