OPRE 3370/ITSS 3370 Course Syllabus

Course Information

Course Number/Section	OPRE 3370/ITSS 3370
Course Title	Managing Sustainable Operations
Term	Fall 2023
Time/Location	Thursday JSOM 2.107, 4 -6.45 PM

Professor Contact Information

Professor	Dr. Ramesh Subramoniam
Office Phone	972 883 4773
Communication	Use eLearning messages for communication
Office Location	JSOM 2.410
Office Hours	2 – 3 PM, Thursday JSOM 2.410

TA Contact Information

TA	Trushil Joshi
Communication	Use eLearning messages for communication
TA Office Hours	TBD
TA Office Location	TBD

Course Pre-requisites, Co-requisites, and/or Other Restrictions

Minimum Sophomore standing

Course Description

OPRE 3370 explores initiatives that enable a company to reduce its environmental impact. We will study the initiatives based on where the impact occurs in the supply chain: within the four walls of the company, at extended suppliers, in logistics, and at customer or use-phase. We will start with making a business case for sustainability, learning about the complex structure of supply chains, and different ways to assess environmental impact. We also will look at a product life cycle approach and use of digital technologies as enablers in decision making. In addition, we will cover food waste, sustainable agriculture, green product design, eco-labeling, sustainable business models, and supply chain risk management.

Student Learning Objectives/Outcomes

Upon completion of this course, students will learn:

- Supply chain management with an environmental, social lens along with economics.
- To develop a variety of initiatives that enable companies to reduce environmental impact including eco-efficiency initiatives that reduce cost, effective sourcing and supplier management, product design for recycling and remanufacturing, and supply chain design to reduce carbon footprint.
- To properly evaluate the sustainability initiatives of a company by its sustainability report.
- To assess the environmental impact of a product.
- About ideas that can inform starting a responsible company.

- About different organizations and their roles in sustainability such as certification organizations, auditing firms, different NGOs with varying missions, industry associations and coalitions.

Students will understand the role operations management plays in business processes.

Required Textbooks and Materials
Required Texts

Sustainable Operations Management Key Practices and Cases
Breno Nunes, Luciano Batista, Donato Masi and David Bennett
Routledge Taylor & Francis Group

As of July 2023, it is $51.95 at the Publisher's site (ebook is $46.75):
https://www.routledge.com/Sustainable-Operations-Management-Key-Practices-and-Cases/Nunes-Batista-Masi-Bennett/p/book/9780367443832

Reference Text book

Sheffi, Y., 2018. *Balancing Green: When to Embrace Sustainability in a Business (and when not to)*. MIT Press.
As of July 2023, it is $28.15 at Amazon:
https://www.amazon.com/Balancing-Green-Embrace-Sustainability-Business/dp/0262037726/

Required Materials
Harvard Business Review Course pack

Class participation (individual)
This course is primarily based on cases and open-ended discussions. Therefore, in order to get the most benefit and enjoyment from this class, it is crucial that you are well prepared for each session and participate to the best of your ability. Every session, myself and TA (whenever TA is available) will be in charge of tracking class participation. Your participation grade will be a blend of my assessment and his assessment.

A second way of collecting participation points is by submitting written comments (not more than half a page) about the suggested readings every week to Blackboard (under Assignments section) prior to start of each session. Your comments can include a summary, key points, your learnings, or your reaction. Your comments will be graded based on their quality, similar to assessments of in-class discussions. In terms of its weight for your participation grade, submitting a write up is no different from raising your hand to participate in a class discussion.

Sustainability report analysis (group)
You will pick two companies within the same industry that are close competitors and analyze their latest sustainability report. You will evaluate and compare their sustainability performance. This is a group assignment with a maximum of 2 people per group. You may present your analysis in class (maximum of 10 slides). Will decide on the presentation part after the semester starts.

By the end of the second week, you need to submit your top 3 choices of company pairs from 3 different industries as well as your choice of the week you wish to present.

Company pairs will be assigned both considering your choice and also to offer representation from a variety of industries.

Term project (group)
You have two options for the term project. The first option is a research project. Here are two examples to possible research projects.
Example 1: For a cosmetic product of your choice (e.g., shampoo), investigate the natural ingredients market and the environmental benefits of them. Possible issues/questions to explore:

- Comparison of different natural versus chemical ingredients and their environmental impact.
- How does the market look like for these ingredients? Are there supply issues?
- Palm oil and its alternatives need separate evaluation.

Example 2: Investigate the impact of China's 2017 waste import ban on the recycling industry in the US and the recyled materials market.

- How did the ban change recycling market in the US? (number of recycling firms/ facilities, volume of recycled products, etc.)
- How did recycled materials price and demand have changed?

The second option is to read two books (from the below list) and write a report about it. The report should include a discussion of the areas of agreement and disagreement, a reconciliation of these issues and a final recommendation by the team.
Books:

- Silent Spring (Carson)
- Ecology of Commerce (Hawken)
- In Earth's Company (Frankel)
- Enviro-Capitalist: Doing Good While Doing Well (Anderson and Leal)
- Capitalism at the Crossroads (Hart)
- Mid-course Correction and Confessions of a Radical Environmentalist (Anderson)
- Green to Gold (Esty and Winston)
- The Fortune at the Bottom of the Pyramid (Prahalad)
- Hot, Flat and Crowded (Friedman)
- Cradle to Cradle (McDonough and Braungart)
- Natural Capitalism: Creating the Next Industrial Revolution (Hawken, Lovins, Little)
- The Travels of a T-Shirt in the Global Economy: An Economist Examines the Markets, Power, and Politics of World Trade (Rivoli)
- American Wasteland: How America Throws Away Nearly Half of Its Food -- and What We Can Do About It (Bloom)
- Overdressed: The Shockingly High Cost of Cheap Fashion (Cline)
- Omnivore's Dilemma (Pollan)
- Force of Nature: The Unlikely Story of Wal-Mart's Green Revolution (Humes)

This assignment gives you an opportunity to explore a subject in the sustainability space that you are interested to learn in depth (e.g., environmental impact of fast fashion, raw material market for a sustainable product you wish to launch, a topic you are intellectually curious about). If you choose to do a research project, you are in charge of shaping the content of it, as each topic is

unique. It is helpful for you to seek the feedback of the instructor by sharing your outline earlier during the project.

Groups will be formed by the instructor and each group will include a maximum of 2 people. You will write a report (maximum 10 pages) and make a presentation at the end of the semester (using maximum 10 slides). By the end of the second week, you need to submit two proposals directly to me in the course learning messages.

Daily Assignments

Session 1: Introduction

Content:

Syllabus, self-introduction, survey, introduction to sustainability

Assignment:

Read the HBR article "Becoming a Better Corporate Citizen (HBR)" and prepare for its discussion.

https://hbr.org/2020/03/becoming-a-better-corporate-citizen

Discussion questions:

1. What is *Performance with Purpose* (PwP)? How is it different from Corporate Social Responsibility?
2. What motivated Indra Nooyi to develop PwP?
3. What kind of obstacles (organizational and operational) did Indra Nooyi face when implementing PwP?
4. What enabled PepsiCo to achieve superior financial performance with PwP?
5. What role does the operations function play in executing a firm's sustainability strategy?

Suggested reading: *Module 1– Instructor Bio & Introduction to Sustainability (Lecture Slides Deck from elearning)*

HBR article "Indians force Coca-Cola bottling facility in Plachimada to shut down, 2001-2006"

https://nvdatabase.swarthmore.edu/content/indians-force-coca-cola-bottling-facility-plachimada-shut-down-2001-2006

Supplemental material:

Why the world's recycling system stopped working; Financial Times, October 2018

https://www.ft.com/content/360e2524-d71a-11e8-a854-33d6f82e62f8

China's New Recycling Policy Could Give U.S. An Opportunity To Rethink Its Process; NPR Planet Money, August 2019 (4 min version)

https://www.npr.org/2019/08/01/747368598/chinas-new-recycling-policy-could-give-u-s-an-opportunity-to-rethink-its-process

Recycling And The Mob; NPR, August 2019 (5 min version)

https://www.npr.org/2019/08/01/747170708/recycling-and-the-mob

Biden to place environmental justice at center of sweeping climate plan; Washington Post, January 2020

https://www.washingtonpost.com/climate-environment/2021/01/26/biden-environmental-justice-climate/

'Forever chemicals' pollute water from Alaska to Florida; The Guardian, December 2020
https://www.theguardian.com/us-news/2020/dec/22/forever-chemicals-pollute-water-dozens-of-sites-in-every-us-state

About Business Roundtable
https://en.wikipedia.org/wiki/Business_Roundtable

George Serafeim: Reimagining Capitalism - performance, purpose, and ESG issues
https://www.youtube.com/watch?time_continue=334&v=0fsuvgv6ehk&feature=emb_logo

Bill Gates: The 2021 60 Minutes interview about climate change
https://www.youtube.com/watch?v=bNKdlnoAqIs

Session 2: Business case for sustainability
Content:
Eco-efficiency, eco-risk, eco-segmentation, pressure from NGOs and activists, regulatory restrictions, changing consumer preferences

Assignment:
Read "FIJI Water: Carbon Negative? (HBS Case 9-611-049)" and prepare for its discussion.
Discussion questions:

1. What is greenwashing, and why do companies engage in greenwashing? How do you know when a claim is greenwashing?
2. What is additionality? Do the tests for additionality make sense?
3. In light of the lawsuit, what should FIJI Water do? Should it amend its carbon negative strategy?

Suggested reading: *Module 2 – Chapter 1 – Intro to Sustainable Operations Management (Nunes)*
Chapter 1 (Growing Pressures) from Sheffi

Supplemental material:
A Brief History of: The Love Canal (Short Documentary, ~11 min)
https://www.youtube.com/watch?v=FSVzUTSzwrE

A Move to Rein In Cancer-Causing 'Forever Chemicals', NYTimes, October 2021
https://www.nytimes.com/2021/10/18/climate/biden-pfas-forever-chemicals.html

Greenpeace - kitkat - Ask Nestlé CEO to stop buying palm oil from destroyed rainforest (1 minute)
https://www.youtube.com/watch?v=1BCA8dQfGi0

How Lynda Resnick and The Wonderful Company Supports Farmers (33 minutes)
https://www.youtube.com/watch?v=Az6OXDOaB0k

Fiji Water: Spin the Bottle
https://www.motherjones.com/politics/2009/08/fiji-spin-bottle/

https://www.wonderfulinnovation.com/

Session 3: Nature of supply chains

Content:

Supply chain basics: bill-of-materials, multi-tier supplier networks, complexity, specialization, location selection, SCOR model, environmental impact of supply chain decisions

Discussion Questions:

1. What makes supply chains so complex?
2. How can this complexity be managed?

Suggested reading:

- *Module 3 – Chapter 2 – Towards a Circular Economy (Nunes) 4 to 5.15 PM*
- *Module 3A – Manufacturing Enablers and Barriers*
- Chapter 2 (The structure of supply chains) from Sheffi
- Bringing Manufacturing Back to the U.S. Is Easier Said Than Done (Willy Shih, HBR)
- Why the Supply Chain Crisis Could Screw up Your Holiday Shopping (Arzum Akkas, 2021)

https://www.bu.edu/articles/2021/supply-chain-crisis-holiday-shipping-delays-2021/

Supplemental material:

Resilinc by Bindiya Vakil (2 minutes)
https://www.youtube.com/watch?v=RAUVoj0ZcC4

About Bindiya Vakil
https://www.linkedin.com/in/bindiya-vakil-a5ba61/

How Toyota Steered Clear of the Chip Shortage Mess (April 2021)
https://www.bloomberg.com/news/articles/2021-04-07/how-toyota-s-supply-chain-helped-it-weather-the-chip-shortage

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Session 4: Environmental impact assessment & Financial impact assessment

Content:

Life cycle analysis, footprint assessment
Fundamentals of finance to evaluate investments: net present value, payback, internal rate of return

Assignment:

- Read "Carbon Footprints: Methods and Calculations (HBS Case 9-611-075)"
- Returning to Fiji case:

Calculate the carbon footprint of shipping a metric tonne of FIJI Water to where you are (using the "Carbon Footprints: Methods and Calculations" note).
How would you estimate the carbon footprint of a liter of tap water?

Suggested reading:

Module 4 - Chapter 3 – Sustainable Operations Strategy
Chapter 3 (Impact assessment) from Sheffi

Supplemental material:
Turning Used Banana Stems Into Hair Extensions And Fabric, Business Insider, February 2021 (~ 5 min)
https://www.youtube.com/watch?v=Ust6Bh1D3GY

FIJI Water Becomes First Bottled Water Company to Release Carbon Footprint of Its Products
https://www.csrwire.com/press_releases/15107-FIJI-Water-Becomes-First-Bottled-Water-Company-to-Release-Carbon-Footprint-of-Its-Products

Refresher on Net Present Value
https://hbr.org/2014/11/a-refresher-on-net-present-value

Refresher on Internal Rate of Return
https://hbr.org/2016/03/a-refresher-on-internal-rate-of-return

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Session 5: Managing the internal supply chain
Content:
Reducing inputs (energy, water, and materials) and outputs (toxins, solid waste), carbon offsetting, 3Rs (reduce, reuse, recycle), waste-to-energy

Assignment:
Read "Building Sustainable Distribution at Walmart Canada (Ivey Case 8B13D010)" and prepare for its discussion.
Discussion Questions:

1. How would you define 'sustainable business'? How would you characterize "the most sustainable distribution centre" in the world?
2. Given Walmart's strategy for operations, how critical is the firm's environmental approach? How is Walmart doing (Exhibit 1)?
3. What is your evaluation of the three options being considered? Which options are attractive financially? What major challenges and risks do you foresee with each?
4. How do these options fit with other initiatives in Canada and globally? Which option(s), if any, would you implement?
5. How would you measure success? Are there any other actions that you would recommend?

Suggested reading:
Module 5 - Chapter 4 – Sustainable Facilities (Nunes)

Chapter 4 (Making with less taking) from Sheffi

Supplemental material:
How big brands can help save biodiversity? By Jason Clay from WWF, TED talk, 2010
https://www.youtube.com/watch?v=jcp5vvxtEaU&t=37s

Hyper-degradation: a new concept in waterless cleaning | Santiago McCausland | TEDx, 2018

https://www.youtube.com/watch?v=GC8gxNQh9u4&t=6s

Session 6: Managing extended supply chains

Content:

Identifying weak links in the supply chain, sourcing, managing suppliers (code of conduct, auditing, collaboration, training), industry coalitions

Assignment:

Read "Sustainability at IKEA Group (HBS Case 9-515-033)" and prepare for its discussion.
Discussion Questions:

1. How would assess IKEA Group's People and Planet Positive sustainability plan? Is the plan likely to help the company transform its business? Are the plan's targets too limited, appropriate, or too ambitious?
2. How do you feel about the progress IKEA Group has made implementing this plan?
3. How does IKEA's sustainability strategy align with its business model? What are the overlaps? What are the conflicts?
4. Which option(s) should IKEA Group pursue to address IKEA's Wood Supply Chain sustainability? Which has the highest leverage for IKEA?

Suggested reading:

Module 6 – Chapter 5 - Sustainable Supply Chains (Nunes)

Chapter 5 (The sorcery of sustainable sourcing) from Sheffi

Supplemental material:

Ikea's Race for the Last of Europe's Old-Growth Forest (The New Republic, February 2022)
https://newrepublic.com/article/165245/ikea-romania-europe-old-growth-forest

Romania: Rape of the Forest | People and Power (Al Jazeera, November 2020)
https://www.youtube.com/watch?app=desktop&v=oFQ3CxJrHKg&feature=youtu.be

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Session 7: Green logistics

Content:

Green practices of shippers (backhauling, consolidation, supply chain design) versus carriers (green vehicles, fuel choice), green ports

Suggested reading:

Module 6 – Chapter 5 - Sustainable Supply Chains (Nunes)

Module 7 – Chapter 6 - Sustainable Production (Nunes)

Chapter 6 (Moving more, emitting less) from Sheffi

Supplemental material:

Why Freight Transportation is a Carbon Disclosure Blind Spot
https://medium.com/mitsupplychain/why-freight-transportation-is-a-carbon-disclosure-blind-spot-7eb6ddc506b8

Session 8: Circular economy
Content:
Solid waste problem, e-waste, take back laws, extended producer responsibility (EPR), recycling and remanufacturing, closed loop supply chains, circular economy

Assignment:
Module 8 – Chapter 6 – Remanufacturing and Reverse Logistics (Elearning deck)

Read "John Deere Reman: Creating Value thru Reverse Logistics" from the HBS coursepack.

Suggested reading:
Chapter 7 (All's well that ends well) from Sheffi

Supplemental material:
The Dark Side of Solar Power (HBR, June 2021)
https://hbr.org/2021/06/the-dark-side-of-solar-power

Plastics: Last Session Tonight with John Oliver (HBO), March 2021 (~22 min)
https://www.youtube.com/watch?v=Fiu9GSOmt8E

Why The United States Is Turning To Recycling Robots, CNBC, July 2019 (~16 min)
https://www.youtube.com/watch?v=1mxaN_xqQh4

Here's what really happens to the items you return online; CNN, January 2021
https://www.cnn.com/2021/01/30/business/online-shopping-returns-liquidators/index.html

To Go Circular, First Go Vertical, 2018
https://www.uschamberfoundation.org/blog/post/go-circular-first-go-vertical

Food Waste During The Coronavirus Crisis (guests: Doug Rauch and Prof Arzum Akkas)
https://www.wgbh.org/news/national-news/2020/05/08/food-waste-during-the-coronavirus-crisis

Extended Producer Responsibility
https://en.wikipedia.org/wiki/Extended_producer_responsibility

Why clothes are so hard to recycle, BBC, 2020
https://www.bbc.com/future/article/20200710-why-clothes-are-so-hard-to-recycle

Can fashion ever be sustainable?
https://www.bbc.com/future/article/20200310-sustainable-fashion-how-to-buy-clothes-good-for-the-climate

The True Cost movie: a 2015 documentary film that focuses on fast fashion
https://truecostmovie.com/

Ever wonder what happens to appliances you get rid of? Take a visit to a facility where JACO "demanufactures" appliances
https://www.consumerreports.org/cro/news/2010/06/ever-wonder-what-happens-to-appliances-you-get-rid-of-take-a-visit-to-a-facility-where-jaco-demanufactures-appliances/index.htm

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Session 9: Food waste

Content:
Operational causes of food waste, solutions (source reduction versus diversion), food bank operations

Assignment:
Read "OzHarvest: Leading with Purpose and Driving Global Food Waste Reduction" for HBS case discussion in class.

Suggested reading:
Wasted: How America Is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill (Gunders, 2012)

Supplemental material:
John Oliver about food waste:
https://www.youtube.com/watch?v=i8xwLWb0lLY

Feeding America 2019 annual report:
https://www.feedingamerica.org/sites/default/files/2020-06/FA_2019_AnnReport_d8.pdf

5 Best Documentaries About Food Waste
https://foodhero.com/blogs/5-food-waste-documentaries

Session 10: Green product design and innovation
Content:
Material substitution and redesign, green packaging, lowering the impact of use phase, design for recycling and remanufacturing, leasing as a service model, sustainable agriculture

Suggested reading:
Module 9 - Chapter 8 - Sustainable design and product development (Nunes)

- Chapter 8 (Green by design) from Sheffi
- How sustainability fuels design innovation (SMR)

https://sloanreview.mit.edu/article/how-sustainability-fuels-design-innovation/

Supplemental material:
About Sonita Lontoh
https://www.linkedin.com/in/sonitalontoh/

Product design for sustainability at Xerox
http://bevideos.mhhe.com/business/video_library/0073278785/swf/Clip_02.html

Building sustainable cities with wooden skyscrapers, The Economist, February 2021
https://www.economist.com/science-and-technology/2021/02/13/building-sustainable-cities-with-wooden-skyscrapers

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Session 11: Process Technologies and Sustainable Operations
Content:
Process technologies such as blockchain, AI, automation that transforms operations
Assignment:
Module 10 - Chapter 7 - Process Technologies and Sustainable Operations (Nunes)

Read "Walmart's Blockchain Quest: Integrating New Technology into A Complex Supply Chain (HBS)"

1. Should Walmart try to scale blockchain technology and use it for more than improving food safety? If so, why and how?
2. Should Walmart try to scale blockchain technology for all of its food products? If so, whay and how?
3. How might Walmart ensure its suppliers adopt the practices necessary for blockchain to be successful?
4. For which stakeholders other than suppliers should Walmart demonstrate value via the blockchain project?
5. If blockchain technology reveals unethical or unsavory practices in Walmart's supply chain, how should the company react?

Suggested reading:
Chapter 9 (Talking the walk: Communicating sustainability) from Sheffi

Supplemental material:
Leaders Guide to AI 2023, White paper section of elearning

Polyface farm, USA Today, 2009 (4 minutes)
https://www.youtube.com/watch?v=KxTfQpv8xGA

Why are CAFOs (Concentrated Animal Feeding Operation) bad?
https://www.sierraclub.org/michigan/why-are-cafos-bad

Spy Drones Expose Smithfield Foods Factory Farms, 2014 (5 minutes)
https://www.youtube.com/watch?v=ayGJ1YSfDXs

See how a manure lagoon works and why farmers want to build even more of them, 2017 (4 minutes)
https://www.youtube.com/watch?v=oSEYfs1V1JY

Cows, Carbon and Climate, Joel Salatin, TEDxCharlottesville, 2016 (17 minutes)

https://www.youtube.com/watch?v=4Z75A_JMBx4

How a Vertical Farming Company Grows 80,000 Pounds of Produce per Session, February 2021
https://www.youtube.com/watch?v=gW-21CHDkIU&t=79s

AeroFarms raises $100m as investors rush to indoor farms, July 2019 (Financial Times)
https://www.ft.com/content/cac48190-9d8a-11e9-9c06-a4640c9feebb

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Session 12: Sustainable business models II
Content:
Selling to green customers, vertical integration of supply chains, transparency, products for green consumer segment (Patagonia, Seventh Generation, Dr Bronners), alternative incorporation for green companies, servicing as a business model

Assignment:
Read "Interface's Evergreen Services Agreement (HBS case 9-603-112)" and prepare for its discussion.
Discussion Questions:

1. What is rationale for "licensing products of service"? What are the organizational requirements to support such an offer?
2. What is Anderson's vision for the Evergreen Services Agreement? What is your assessment of the business model? Why are potential customers interested by this proposal?
3. Why is Interface finding it difficult to sell Evergreen Services Agreements? What is your assessment of the negotiations with University of Texas at Houston? Why did they break down? Under what circumstances might they succeed?
4. What do you think Hendrix should do?

Suggested reading:
Chapter 11 (Creating deep sustainability) from Sheffi

Supplemental material:
TED Talk by Ray Anderson, Interface (16 min)
https://www.youtube.com/watch?v=iP9QF_lBOyA

Session 13: Supply chain risk management
Content:
Supply chain disruption due to extreme weather events, supply chain risk management
Assignment:

Read "From Superstorms to Factory Fires: Managing Unpredictable Supply-Chain Disruptions (HBR)" and prepare for its discussion.
https://hbr.org/2014/01/from-superstorms-to-factory-fires-managing-unpredictable-supply-chain-disruptions

Discussion Questions:

1. How does climate change impact supply chains?
2. How supply chain disruptions can be mitigated?
3. What is supply chain resiliency?
4. How can an organization build resiliency into its supply chain?
5. How can resiliency be measured?

Suggested reading:

- Read "A Supply Chain View of the Resilient Enterprise (SMR)" https://sloanreview.mit.edu/article/a-supply-chain-view-of-the-resilient-enterprise/

Supplemental material:
Toyota article on their risk program
https://www.supplychaindive.com/news/toyota-semiconductor-shortage-earthquake-inventory-ihs-gartner-forecast-2022/600193/

https://www.bloomberg.com/news/articles/2021-04-07/how-toyota-s-supply-chain-helped-it-weather-the-chip-shortage

Toyota Takes #1 Position
https://www.cnbc.com/2022/01/04/toyota-dethrones-gm-to-become-americas-top-selling-automaker-in-2021.html

Auto Makers Retreat From 50 Years of 'Just in Time' Manufacturing
Pressured by pandemic, the hyperefficient supply-chain model pioneered by Toyota, is under assault
https://www.wsj.com/articles/auto-makers-retreat-from-50-years-of-just-in-time-manufacturing-11620051251?mod=hp_lead_pos5

Global Supply Chains in a Post-Pandemic World: Companies need to make their networks more resilient. Here's how. *Harvard Business Review*, Willy C. Shih, September 2020.
https://hbr.org/2020/09/global-supply-chains-in-a-post-pandemic-world

How Investors Are Sizing Up Climate Change's Risks—and Opportunities
https://hbswk.hbs.edu/item/how-investors-are-sizing-up-climate-changes-risks-and-opportunities

Supply Chain Risk vs. Resiliency Management (1.5 minutes)
https://www.youtube.com/watch?v=rtEWY5s9D38

Earth to CEO: Your Company Is Already at Risk From Climate Change
https://fortune.com/2019/09/03/climate-change-supply-chain-mckinsey/

Session 14: Wrap up and student presentations
Content:
Issues with scaling sustainable sourcing, student presentations

Suggested reading:
Chapter 12 (The travails of scale) from Sheffi

Discussion Questions:

1. What kind of supply chain issues companies run into when scaling sustainable sourcing?
2. How could these challenges be overcome?

Textbooks and some other bookstore materials can be ordered online or purchased at the UT Dallas Bookstore.

Technical Requirements
In addition to a confident level of computer and Internet literacy, certain minimum technical requirements must be met to enable a successful learning experience. Please review the important technical requirements on the Getting Started with eLearning webpage.

Course Access and Navigation
This course can be accessed using your UT Dallas NetID account on the eLearning website.

Please see the course access and navigation section of the Getting Started with eLearning webpage for more information.

To become familiar with the eLearning tool, please see the Student eLearning Tutorials webpage.

UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The eLearning Support Center includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service.

Communication
This course utilizes online tools for interaction and communication. Some external communication tools such as regular email and a web conferencing tool may also be used during the semester. For more details, please visit the Student eLearning Tutorials webpage for video demonstrations on eLearning tools.

Student emails and discussion board messages will be answered within 3 working days under normal circumstances.

Distance Learning Student Resources
Online students have access to resources including the McDermott Library, Academic Advising, The Office of Student AccessAbility, and many others. Please see the eLearning Current Students webpage for more information.

Server Unavailability or Other Technical Difficulties
The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the online eLearning Help Desk. The instructor and the eLearning Help Desk will work with the student to resolve any issues at the earliest possible time.

Session	Date	Topic	Readings / Guest Speakers
1	Aug 24	Introduction	*Module 1– Instructor Bio & Introduction to Sustainability (Lecture Deck from elearning) 4 to 5.15 PM* **Becoming a Better Corporate Citizen (HBR) 5.30 to 6.45 PM**
2	Aug 31	Intro to Sustainable Operations Management Business case for sustainability	*Module 2 – Chapter 1 – Intro to Sustainable Operations Management (Nunes) 4 to 5.15 PM* **Case study: Fiji Water (HBS) 5.30 to 6.45 PM**
3	Sep 7	Circular Economy Nature of supply chains	**Guest Speaker: Industry Sustainability Executive (IMPAK or CivilizedCycles) or Dr. Don Huisingh** *Module 3 – Chapter 2 – Towards a Circular Economy (Nunes) 4 to 5.15 PM* *Module 3A – Manufacturing Enablers and Barriers* **Case Study: Bringing Manufacturing Back to the U.S. is Easier Said Than Done (HBS) 5.30 to 6.45 PM**
4	Sep 14	Sustainable Operations Strategy Environmental impact assessment	*Module 4 - Chapter 3 – Sustainable Operations Strategy (Nunes)* **Carbon Footprints: Methods and Calculations (HBS)**
5	Sep 21	Sustainable Facilities Managing the internal supply chain & Fundamentals of finance	*Module 5 - Chapter 4 – Sustainable Facilities (Nunes)* **Case study: Walmart Canada (Ivey) (HBS)**
6*	Sep 28	Sustainable Supply Chains Managing extended supply chains	*Module 6 – Chapter 5 - Sustainable Supply Chains (Nunes)* **Case study: Ikea Group (HBS)**
7*	Oct 5	Sustainable Production Green logistics	*Module 7 – Chapter 6 - Sustainable Production (Nunes)* **Guest Speaker: IMPAK Retail or Anil Swami CivilizedCycles**
8*	Oct 12	Remanufacturing & Reverse Logistics Circular economy	*Module 8 – Chapter 6 – Remanufacturing and Reverse Logistics* *Digital Product Lifecycle Approach to Remanufacturing and Reverse Logistics*

			Case study: John Deere Reman (HBS)
9*	Oct 19	Food waste	**Wasted: How America Is Losing Up to 40 Percent of Its** **Food from Farm to Fork to Landfill (NRC) – Whitepaper section of elearning** **Case study: Healthcola (Questrom)**
10	Oct 26	Green product design and innovation	*Module 9 - Chapter 8 - Sustainable design and product development (Nunes)* **Why Sustainability is the key driver of Innovation (HBR)**
11	Nov 2	Process Technologies & Sustainable Operations	*Module 10 - Chapter 7 - Process Technologies and Sustainable Operations (Nunes)* **Case Study: Walmart's Blockchain Quest: Integrating New Technology into A Complex Supply Chain (HBS)"**
12	Nov 9	ESG Reporting Sustainability – A key driver of Innovation	*Module 11 – Top Sustainable Supply Chains* *ESG Deck* **Guest Speaker: Dhruv Raina (Consultant) or Jay or Ram** **Case study: Why Sustainability is now the key driver for Innovation (HBS)**
13	Nov 16	Supply chain risk management	**From Superstorms to Factory Fires: Managing Unpredictable Supply-Chain Disruptions (HBR)** **A Supply Chain View of the Resilient Enterprise (SMR)** **Guest Speaker: Dr. Surinder Singh, CEO, Relyion Energy**
14	Nov 23	**THANKSGIVING HOLIDAY**	
14	Nov 30	Wrap up and student presentations of research project or book reports	
15	Dec 7	Final Exam	

Academic Calendar

Grading Policy

Assignments/Exams	Points	Percentage
Sustainability Report Analysis (Group Project)	25	25%
Term Project (Group)	25	25%

Assignments/Exams	Points	Percentage
Individual Participation	25	25%
Final Exam	25	25%
Total	100	100%

Semester Average	Letter Equivalent
98-100	A+
90-97.9	A
88-89.9	B+
80-87.9	B
78-79.9	C+
70-77.9	C
60-69.9	D
Less than 60	F

Course Policies

Homework Assignments

All projects should be done in teams and presented. Group participation is required.

Late Work

All projects may be submitted within 24 hours of the due date. However, a 15% reduction in grade will be assessed. After the 24 hour grace period there is no opportunity to submit assignments and the student will receive a zero grade.

Individual Participation

The cases will be discussed in class and graded based on participation in the class.

Assignment submission instructions

Students are expected to submit the case reviews (Teams) and assignments on time as defined in the syllabus. Locate the assignment in your eLearning course. You will submit your assignments in the required file format with a simple file name and a file extension.

To submit your assignment

- Click the assignment name link and follow the on-screen instructions
- Upload (attach) your file(s).
- Click the Submit button. (**NOTE: IF YOU DO NOT CLICK SUBMIT YOU HAVE NOT SUBMITTED YOUR ASSIGNMENT).**

You must click the SUBMIT button for your assignment to be submitted. For additional information on how to submit assignments, view the Submitting An Assignment video tutorial.

Please Note: Each assignment link will be deactivated after the assignment due time. After your submission is graded, you may go to My Grades on the course menu and click the score link to check the results and feedback. Your homework should be graded on a scale of 0-100 points.

Comet Creed
This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

"As a Comet, I pledge honesty, integrity, and service in all that I do."

UT Dallas Syllabus Policies and Procedures
The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Class Materials

The instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Classroom Conduct Requirements Related to Public Health Measures

UT Dallas will follow the public health and safety guidelines put forth by the Centers for Disease Control and Prevention (CDC), the Texas Department of State Health Services (DSHS), and local public health agencies that are in effect at that time during the Fall 2021 semester.

Class Attendance

The University's attendance policy requirement is that individual faculty set their course attendance requirements. Regular and punctual class attendance is expected. Students who fail to attend class regularly are inviting scholastic difficulty. In some courses, instructors may have special attendance requirements; these should be made known to students during the first week of classes.

Class Participation

Regular class participation is expected. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Class participation is documented by faculty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Class Recordings

Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

NOTE: if the instructor records any part of the course, then the instructor will need to add the following syllabus statement:

The instructor may record meetings of this course. These recordings will be made available to all students registered for this class if the intent is to supplement the classroom experience. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law.

Off-campus Instruction and Course Activities

(Below is a description of any travel and/or risk-related activity associated with this course.)

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Academic Support Resources

The information contained in the following link lists the University's academic support resources for all students.

Please see http://go.utdallas.edu/academic-support-resources.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please review the catalog sections regarding the credit/no credit or pass/fail grading option and withdrawal from class.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.