Yale SCHOOL OF MANAGEMENT

MGT 872: Managing Sustainable Operations (Spring-2 2027)

Class meetings	Tuesdays and Thursdays Section G1: 2:35–3:55 p.m. (room TBD) Section 01: 4:10–5:30 p.m. (room TBD)
Instructor	Jerry Anunrojwong (jerry.anunrojwong@yale.edu)
Office Hours	Appointments upon request
Teaching Assistants	FirstName1 LastName1 (first1.last1@yale.edu) FirstName2 LastName2 (first2.last2@yale.edu)

COURSE DESCRIPTION

How businesses produce and deliver goods and services has consequences for the environment and for people throughout the supply chain. Managers influence these outcomes when they design products, invest in capacity, and choose suppliers. Some choices reduce both costs and environmental harm. Others require one firm to bear a cost while the benefits go to its customers, its suppliers, or the public. We will examine how firms can build a viable business around a more sustainable way of producing or delivering goods and services. Who would pay for it, why would customers choose it, and what would make it worthwhile for suppliers and other partners to participate?

Through case discussions and quantitative modeling, you will evaluate these decisions. You will compare investments in clean energy, examine when reuse or recycling reduces a product's environmental impact, and assess what a buyer can do about working conditions in its supply chain. You will learn to defend a recommendation and identify what would change your mind.

MAIN TOPICS COVERED

1. Carbon accounting and emissions targets
2. Energy procurement and power-system capacity planning
3. Capital budgeting for emissions reductions
4. Product design, reuse and recycling
5. Business models for sustainable operations
6. Responsible sourcing and environmental claims

COURSE OBJECTIVES

- Measure the environmental impact of operations across a product's life cycle.
- Compare operating and investment decisions using costs, emissions and uncertainty.
- Evaluate how business models and sourcing practices affect firms, workers and the environment.

TEXTBOOKS AND RECOMMENDED/REQUIRED READINGS

Required readings. No textbook is required. Before each class, complete the preparation listed in the schedule. Bring the case exhibits and your calculations to class. Use Canvas to access assigned readings, assignments and announcements. Case titles link to publisher pages. Bring a laptop to session 12.

COURSE REQUIREMENTS AND GRADING POLICY

Course requirement	Weight
Class participation	50%
Three team assignments (10% each)	30%
Individual final project	20%

DESCRIPTIONS OF ASSIGNMENTS/PROJECTS

Class participation. Come prepared to explain what you would do and why. Which facts from the case, calculations, or relevant experiences shaped your judgment? A question that helps a classmate explain their reasoning can be as valuable as offering your own recommendation. Participation also includes the Fishbanks simulation.

Canvas discussions. Before the Thai Union and Delta classes, post a response to the case question on Canvas. For each case, write two or three sentences and use a detail from the reading to explain your reasoning. I may ask you to expand on your post in class.

Simulated stakeholder interviews. For the Vytal class, you'll prepare by interviewing simulated stakeholders in place of reading the case PDF. Read the short brief, decide whom to interview, and ask your own questions. Come ready to explain whether your restaurant should adopt Vytal and what you learned that shaped your decision.

Team assignments. Work in the same team of two or three for all three assignments. Submit one model and one memo per team before the class listed in the schedule.

1. Corporate emissions inventory. Use three years of records from Optimus Auto Components to calculate direct and purchased-electricity emissions. Add the available value-chain categories for the final year. Reconcile the plant's sources of electricity and recommend a measurable target. Due before session 4.

2. Abatement and capital budgeting. Rank the St. Charles Medical Center projects by cost per metric ton of CO_2e avoided. Choose a portfolio of projects for each of the four budget levels. Compare divisible and indivisible investments and test how a carbon price changes the decision. Due before session 7.

3. Powering AI data centers. Use the Southern Company case exhibits to compare the annual costs of three generation technologies. Recommend what type of generating capacity Georgia Power should build and what commitments it should seek from data-center customers. Due before session 10.

INDIVIDUAL FINAL PROJECT

Choose an organization outside the assigned cases and team assignments. Research an operating decision it faces or propose a change to how it delivers a product or service. Write to the person who could act on your recommendation.

For session 8, bring a one-paragraph proposal that identifies the decision you plan to study and one source you've found. In session 13, present the decision you studied, your recommendation, and the evidence behind it. Be prepared to answer questions from classmates. The presentation and memo together count for 20% of your course grade. Submit an individual four- to five-page decision memo one week after the last class. You may include exhibits, such as a table or chart, if they support your recommendation.

Address these questions in the memo:

- What do you recommend, and how does it compare with current practice or another feasible option?
- How would your proposal affect operations, costs and environmental outcomes? Who would bear the costs and who would benefit?
- Which course concept helps explain your recommendation? Support your reasoning with evidence, such as operating data, a published study or findings from a comparable program.
- What uncertainty matters most? If a key number is unavailable, explain what range of values is plausible and whether your recommendation changes across that range. If the decision turns on a qualitative factor, such as worker safety or supplier cooperation, explain how it affects your choice and what evidence informs your judgment.
- What should the organization do first?

YALE SOM POLICIES

Academic integrity and AI. You may use generative AI to review course concepts, work through practice examples, and prepare for class discussion. Come ready to explain your reasoning and support it with evidence from the case.

Do not use generative AI to complete the three team assignments. As a team, you must build your own spreadsheets, perform the calculations, make your own recommendations, and write each submission. Working through the models yourselves builds the judgment you'll need to recognize when AI-generated analysis or a recommendation misses something important or rests on a questionable assumption.

You may use generative AI at any stage of the individual final project. For example, you may use it to explore topics, develop your analysis, create charts or tables, and draft or revise your memo. You are responsible for checking the calculations, verifying claims against the original sources, and citing the data you use. Make your own recommendation and be prepared to explain how the evidence supports it.

If you use generative AI to review concepts before a team assignment or at any stage of your final project, add a brief note at the end of the submission explaining how you used it.

Attendance. Attendance is required at every class. Case discussions depend on you and your classmates coming prepared to discuss the case and respond to one another. Class participation counts for 50% of your grade. If you must miss class, please let me know as early as possible.

Accommodations. To request an accommodation, contact Yale Student Accessibility Services. If you already have an approved accommodation, I'm happy to discuss how it will work in this course.

CLASS SCHEDULE AND ASSIGNMENTS

Session	Date	Topic, preparation, and deadlines
1	Tue, Mar 23	**Fleet investment and electrification** Read: *Hurtigruten: Sea Zero*
2	Thu, Mar 25	**Carbon accounting and targets** Read: *Carbon Commitments: Designing a Global Greenhouse Gas Emissions Reduction Plan for INSEAD Business School*
3	Tue, Mar 30	**Renewable electricity procurement** Read: *Rewa Solar India: PPP Innovation Unleashed*
4	Thu, Apr 1	**Green buildings and retrofit investment** Read: *Decarbonizing the Real Estate Sector: One Building at a Time* **Due before class:** Team assignment 1, Optimus emissions inventory.
5	Tue, Apr 6	**Powering AI data centers** Read: *Southern Company: Powering the Future*
6	Thu, Apr 8	**Design for the environment** Read: *The LEGO Group: Material Hurdles in the Quest for Sustainable Bricks*
7	Tue, Apr 13	**Selling a service** Prepare: Read the Vytal brief and interview the simulated stakeholders you choose. **Due before class:** Team assignment 2, St. Charles abatement and capital budgeting.
8	Thu, Apr 15	**Reverse logistics** Read: *Easier Together: Zirq Solutions' Ecosystem Approach to Recycling Insulin Pens* **Bring:** A one-paragraph project proposal naming your decision and one source.
9	Tue, Apr 20	**Supplier oversight and NGOs** Read: *Clean and Green? – Thai Union's Supply Chain Transformation* **Due before class:** Post your Thai Union response in Canvas Discussions.
10	Thu, Apr 22	**Supply chain resilience in the energy transition** Read: *Maruti Suzuki: Supply Chain Risk Impacting EV Launch* **Due before class:** Team assignment 3, Southern Company capacity planning.
11	Tue, Apr 27	**Offsets and green claims** Read: *Delta Air Lines Battles Carbon-Offset Credibility Allegations* **Due before class:** Post your Delta response in Canvas Discussions.
12	Thu, Apr 29	**Governance of common resources** Read: *Introduction to Fishbanks* **Bring:** Your laptop for the Fishbanks simulation.
13	Tue, May 4	**Final project presentations** **Present:** Your operating decision, recommendation, and supporting evidence.

Tuesday, May 11 — Submit your individual project memo.