

PRELIMINARY DRAFT



MGMT 7990: STRATEGY AND ENVIRONMENTAL SUSTAINABILITY

Fall 2022 (Q2)

v 6/20/22

SYLLABUS

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Environmental sustainability issues are one of the defining problems of our time. While governments and NGOs will have to play important roles, without active involvement of businesses it will be impossible to make sufficient progress on these issues. Globalization and Digitization have been two major disruptive developments that organizations have faced (and are still facing). ESG (Environmental, Social, and Governance) issues are the latest large-scale development that will shape companies' futures. This course will focus on the "E" of ESG. As with any large change, environmental sustainability poses significant business challenges but also tremendous opportunities. We will study these issues both from the perspective of incumbent firms that have to adapt their business practices and from firms (incumbents and new start-ups) that will take advantage of the new opportunities that are being created.

As this subject matter is changing rapidly, this course will have a large emphasis on "co-creation" of knowledge. Students will be engaged not only in absorbing knowledge about the topic of environmental sustainability, but also in actively gathering and disseminating knowledge to the class. In particular, each student will be part of a small team and each team will give a short presentation on a particular topic at the beginning of a specific class.

Your grade will be composed of an individual final paper (50%), a team presentation (15%) and class participation (35%). In order to pass this class, you have to make a good-faith effort with respect to class attendance, participation and the paper.

Please note that this syllabus is subject to change with prior announcements. All slides will be posted after each class on Canvas. Students with excused absences (see: <https://mba-inside.wharton.upenn.edu/academic-performance/excused-absence-policy/>) will be provided access to class recordings.

The TAs for this class are Samantha Darnell (sdarnell@wharton.upenn.edu) and Emily Ulrich (emulrich@wharton.upenn.edu).

PRELIMINARY DRAFT

Individual final paper (Due 12/16 at noon)

Select a firm that has engaged in a significant initiative around environmental sustainability. The “significant initiative” might be a new product or service offering, or a major modification of internal processes. It could also be the entire firm, if it is a start-up. The main idea is to analyze this initiative from a strategic perspective. To address the following questions use whatever tools and frameworks we discussed in class that will help you make your point:

1. Briefly describe the strategic initiative.
2. What is the overarching strategy of the firm?
3. What is the effect of the initiative on WTP of the firm’s customers? What specific drivers of WTP are involved? For which customer segments would we expect the biggest impact?
4. What is the effect of the initiative on cost?
5. What is the environmental benefit of this initiative?
6. Does this initiative help the firm create a competitive advantage?
7. How sustainable is this advantage?
8. What are the risks of this initiative?

Please keep the maximum of the paper to 10 pages of text (plus 2-3 pages of exhibits if needed). Please use double spacing and 12 point font.

PRELIMINARY DRAFT

Team presentations:

At the beginning of the semester, you will sign up (first-come-first-serve) to be a part of a team (up to 4 students) to work on one of the following topics. Each team will present at the beginning of a particular class for about 10 minutes. The presentation should start with a short overview of the environmental “problem” in the particular sector. Then, you can provide short examples of incumbent or new firms innovating with respect to sustainability in that space. Each team will also create an annotated reading list so that others can dig deeper into this topic if they would like to.

1. Highlights from the latest IPCC reports (Session 3)
2. Existing and upcoming E(SG) regulations (Session 3)
3. Innovations in wind energy (Session 4)
4. Innovations in trucks/buses/logistics (Session 4)
5. Plant and cell-based meat/dairy innovations (Session 5)
6. Innovations in solar energy (Session 5)
7. Electric cars and battery innovations (Session 6)
8. Innovations around the electric grid/smart meters (Session 6)
9. Innovations around plastics (Session 7)
10. Innovations in packaging (Session 7)
11. Innovations in cooling (buildings/servers) (Session 8)
12. Innovations around carbon sequestration (Session 8)
13. Innovations around steel (Session 9)
14. Innovations with respect to sharing economy/extending product use (Session 9)
15. Innovations around concrete (Session 10)
16. Innovations in urban design/green cities (Session 10)
17. Innovation in cargo ships/cruise boats (Session 11)
18. Overview of ESG ratings (Session 11)
19. Overview ESG financing (Session 12)
20. Innovations in aviation (Session 12)

PRELIMINARY DRAFT

A short note on proper citations

To most of you this will be probably self-evident, but I want to make sure that we all understand: Copying paragraphs from sources (magazine, newspaper articles, analyst reports etc.) without properly citing them is a SERIOUS offense! Properly citing means: if you copy word-by-word, you have to mark this by enclosing the copied text with quotation marks “ “ and citing the source. Even if you don’t copy word-by-word, but you take someone else’s idea, you have to indicate in a citation the source of that idea. This citation has to follow directly the idea (attach a footnote or an endnote). At the end of the paper, you should then list all sources that you have cited in the text.

Let me re-iterate: Non-proper citing is a very serious academic offense that in other courses has led professors to fail students and bring these students to the attention of the academic review board of the University. I think all of us want to avoid any such incident – and it is really easy to avoid such problems. Simply be careful in your papers that you attribute ideas/frameworks etc. that you use to their respective sources.

PRELIMINARY DRAFT

10/25 Session 1: Course Logistics, Strategy Fundamentals

Michael Porter and Forest Reinhardt. 2007. "A Strategic Approach to Climate," *Harvard Business Review*, October.

Rebecca Henderson, 2020. "Climate Change in 2020: Implications for Business" 9-320-087

Optional:

Michael Porter and Class van der Linde. 1995. "Green and Competitive: Ending the Stalemate," *Harvard Business Review*, September-October.

Ioannis Ioannou and George Serafeim. 2021. "Corporate Sustainability: A Strategy?" working paper.

10/27 Session 2: Connected Strategy and Sustainability

Michael Porter and Mark Kramer. 2011. "Creating Shared Value." *Harvard Business Review*, January-February.

Nicolaj Siggelkow and Christian Terwiesch. 2019. "The Age of Continuous Connection." *Harvard Business Review*, May-June.

11/1 Session 3: Sustainability along the Supply Chain

Team presentations:

1. Highlights from the latest IPCC reports
2. Existing and upcoming E(SG) regulations

Toffel & van Sice. 2013. "Carbon Footprints: Methods and Calculations" (9-611-075)

Case: Sustainable Tea at Unilever, 9-712-438

PRELIMINARY DRAFT

11/3 Session 4: Domains of Action

Team presentations:

1. Innovations in wind energy
2. Innovations in trucks/buses/logistics

Serafeim. 2020. "Social-Impact Efforts that Create Real Value," Harvard Business Review, September-October.

Case: Sustainability at IKEA Group, 9-515-033

11/8 Session 5: Connected Strategy and Sustainability applied

Team presentations:

1. Plant and cell-based meat/dairy innovations
2. Innovations in solar energy

Case: Indigo Agriculture: Harnessing Nature, 9-620-024

11/10 Session 6: Consumer Behavior

Team presentations:

1. Electric cars and battery (life-cycle) innovations
2. Innovations around the electric grid/smart meters

Delmas & Colgani. "What Sustainability has Come to Mean" and "The Green Bundle," Chapters 1 & 2 in: *The Green Bundle*, Stanford University Press, Stanford, 2018.

Case: Allbirds: Decarbonizing Fashion, 9-622-024

PRELIMINARY DRAFT

11/15 Session 7: Open Innovation

Team presentations:

1. Innovations around plastics
2. Innovations in packaging

Case: Sustainability Through Open Innovation: Carlsberg and the Green Fiber Bottle (Berkeley: B5922)

11/17 Session 8: Innovation in High Tech and Collaborations

Team presentations:

1. Innovations around carbon sequestration
2. Innovations in cooling (buildings/servers)

Lacy, Long & Spindler. "The Circular Business Models," Chapter 2 in: *The Circular Economy Handbook*, Palgrave: London, UK, 2020.

Guest Speaker: Marina Rakhlin (WG11) Strategic Partnerships, Climate & Sustainability at IBM Research

Optional:

Anders Adrae and Tomas Edler. 2015. "On Global Electricity Usage of Communication Technology: Trends to 2030." *Challenges*, 6 117-157.

11/29 Session 9: Recycling and Circular Economy

Team presentations:

1. Innovations with respect to sharing economy/extending product use
2. Innovations around steel

Pullman & Sauter. "Sustainable Product End-of-Life Management," Chapter 5 in: *Sustainability Delivered: Designing Socially and Environmentally Responsible Supply Chains*, Business Expert Press, New York, 2012.

Case: First Solar: The Solar Module Recycling Opportunity (Ivey: 9B16M042)

PRELIMINARY DRAFT

12/1 Session 10: Life Cycle Analysis and Sustainable Buildings

Team presentations:

1. Innovations around concrete
2. Innovations in urban design/green cities

Buxel, Esenduran, Griffin. 2015. "Strategic sustainability: Creating business value with life cycle analysis." *Business Horizons*, 58, 109-122.

Case: Process Innovation for Efficiency and Environmental Sustainability in the Building Industry (Stanford OIT-113)

Optional: Ramesh, Prakash, Shukla. 2010. "Life cycle energy analysis of buildings: An overview" *Energy and Buildings* 42, 1592-1600.

12/6 Session 11: Materiality

Team presentations:

1. Overview of ESG ratings
2. Innovation in cargo ships/cruise boats (Session 11)

MacMahon. 2020. "The Challenge of Rating ESG Performance" *Harvard Business Review*, September-October

"Sustainability Materiality Matrices Explained" 2019. NYU Center for Sustainable Business.

Case: Sustainable Product Management at Solvay, 9-120-081

Optional: Serafeim & Grewal. 2019 "ESG Metrics: Reshaping Capitalism?" (9-116-037)

12/8 Session 12: & Wrap-Up

Team presentations:

1. Overview of ESG financing
2. Innovations in aviation (Session 12)

PRELIMINARY DRAFT

Final Paper Due 12/16 at noon!