Nicholas School of the Environment  
ENV 811, Business and the Environment  
Fall, 2019  
Course Syllabus

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Course Description

This three-module course introduces students to 1) systems thinking in a sustainable business context, 2) business organization and management practices and 3) business motivations for engaging in sustainable practices. Students will engage in real-world situations and learn practical skills. In the first module students will apply systems analysis tools to consider the global context for sustainability and to evaluate business value chains. Students will examine the ways in which businesses operate within an environmental, social and economic context to address global problems such as climate change, degradation of water, land and air, overconsumption, and the unsustainable use of natural resources. In the second module, students will gain fluency with the core functions of business—i.e., finance, accounting, strategy, operations, and marketing—and will build their capacity for leadership, teamwork, and using the tools of business to advance environmental sustainability goals. In the third module students will probe stakeholder, regulatory and financial drivers for business sustainability and tie concepts from the three modules together in a capstone project.

Active learning is a core value of our course. Students will learn through case study cases, class discussions and applied team projects. Exceptional communication is also a core value. Students will engage in lively and respectful classroom discussions, complete written assignments, such as memos and briefs, work with team mates and deliver presentations on assigned topics.
Our goal is for students to develop a holistic view of business interactions with the environment so that they can be prepared to develop managerially, financially and technically sustainable solutions to problems in private sector, corporate, NGO, and public agency settings.

Course Materials:
1. Readings and cases provided electronically on Sakai and in Coursepack

Summary of graded work:

Module 1: (Gallagher)
- Presentation: Student teams will deliver a presentation, which uses systems analysis to confront a sector-based sustainability challenge. (10%)
- Participation: Students are expected to attend class and participate in class discussions (5%)

For Module 2: (Hee)
- Decision Memo (TNT case study) – September 16th, 3pm (10%)
- Financial Statement Review—entries on Google sheet by Sept. 25th, 3pm (5%)
- Informational Memo (Non-Financial Reporting) —October 2nd, 3pm (10%)
- Everest Simulation—October 18th, Midnight (11:59am) (10%)
- Decision Memo (Green Marketing – Method/LUSH Cosmetics)—October 23rd, 3pm (10%)
- Participation: Students are expected to attend class and participate in class discussions (5%)

Module 3: (Gallagher)
- Case Analysis: Student teams will apply the Learning Through Cases framework to consider issues in two cases, Mining in Madagascar and First Solar (5% each)
- Memo: Students will write a decision memo and summary e-mail recommending a course of action to decision makers at Clorox (10%)
- Presentation: Student teams will deliver a presentation on “sustainability as strategy” (15%)
- Participation: Students are expected to attend class and participate in class discussions (5%)

A Note on Late Assignments If you have a good reason for not being able to turn in an assignment on time, it will be considered, if you speak to Deb or Carol beforehand. Otherwise, your grade will be adjusted downward appropriately for each day late.
Honor Code

TO UPHOLD THE DUKE COMMUNITY STANDARD:
- I will not lie, cheat, or steal in my academic endeavors;
- I will conduct myself responsibly in all my endeavors; and
- I will act if the Standard is compromised.

Module I: What is sustainability and why should businesses care? [Deb Gallagher]
A three-week module that introduces systems thinking and strategy as frames for how businesses approach sustainability, covering the following topics:
1. Communication
2. Sustainability as a Strategic Objective
3. Systems Thinking and Sustainability

I-1. August 26. Introduction to Course, Learning through Cases
Read:
- The Comprehensive Case for Sustainability
- Sustainability Lessons from the Front Lines
Watch:
- Learning With Cases: An Interactive Study Guide
Assignments:
- Familiarize yourself with syllabus, course Sakai site
- Purchase Course Pack

I-2. August 28. Strategy and Systems, Communicating: Memos, E-mails, Presentations, Team Introductions. Discussion and In-Class Exercise
Read
- Strategic Perspectives of Corporate Sustainability Management
- The Dawn of Systems Leadership
- Baumgartner and Rauter, 2017. Strategic Perspectives of Sustainability
- Memo Writing Supplemental Resources
- How to write e-mails that pass the 10-second test
Watch:
- Video 1: How to Write a Memo [Nicki Cagle, Director of the Writing Studio]
In-class assignment:
- The 10-second e-mail

I-3. September 2. Sketching Systems for Change 1 (Business Level), Discussion and In-Class Exercise
Read
- Whole Systems Design: Introduction to Lifecycle Thinking
- Introduction to Systems Thinking
• Guidelines for Drawing Causal Loop Diagrams

Watch
• Got a Wicked Problem? First Tell Me How to Make Toast, https://www.ted.com/talks/tom_wujec_got_a_wicked_problem_first_tell_me_how_you_make_toast

In-Class Assignment
• Introduction to Team Assignment, Sketching a Value Chain

I-4. September 4. Sketching Systems for Change 2 (Planetary Level), Discussion and In-Class Exercise
Read:
• Steward, T. 2012 A Brief Introduction to the Multi-Level Perspective (MLP)
Watch:
• What is MLP? Multi-Level Perspective https://vimeo.com/54338623
• Sally Uren on System Change for Sustainability (GreenBiz 2019) https://www.youtube.com/watch?v=70zdK0eb7mU

In-Class Assignment:
• Multi-Level Perspective applied to your organization

Read:
• Building a Sustainable Company: The Story of Eileen Fisher
Consider:
• What measures did Eileen Fisher take to reduce its environmental footprint? Did the company go far enough?
• How did the company promote sustainability?
• Consider the fashion industry sector from a system perspective. What are the benefits of upcycling? How can Eileen Fisher promote systems change?

Assignment (ungraded, but checked)
• Complete the Learning Through Cases Analysis for Eileen Fisher (individually)

In-Class Assignment:
• Work on Team Presentations (as time permits)

Assignment: Team Presentations
Module II: Business Management – How Do Businesses Work and Why Should We Care?  
[Carol Hee]

Through this course module, students will gain familiarity with the core functions of business. An understanding of the basic tenants of finance, accounting, strategic management, operations, and marketing will enable students to leverage their knowledge of environmental sustainability issues in engagements with organizational leaders and with diverse stakeholders so that environmental concerns are addressed in at all levels of decision-making.

II-1. September 18.  Introduction to Business Leadership and the Everest Simulation — “Never doubt that a small group of thoughtful, committed, citizens can change the world. Indeed, it is the only thing that ever has.” (Margaret Mead)

Web Assignment:
- Read and reflect on your results, paying particular attention to the following sections: Introduction, Strengths & Weaknesses, Career paths, and Workplace Habits. (See assignment description below.)

Read:

Written Assignments:
A. 2 page Decision Memo
In 2010, TNT separated Mail and Express; TNT Mail became TNT Post; and in 2016, FedEx purchased TNT Express. Place yourself in 2016, at the time of this transition. David Bronczek, President and CEO, FedEx, and Tex Gunning, CEO of TNT Express have asked your advice about the future of TNT programs Moving the World and Planet Me. **Write a 2-page double-spaced, 12 point font memo to Mr. Bronczek and Mr. Gunning addressing their question about the future of these programs.** Be sure to consider the leadership approach of Mr. Peter Bakker in light of the insights from the Darden readings. Were there strategies Bakker applied that are worth emulating? What were keys to Bakker’s success
that would be helpful to the leaders of the newly merged company considering the many changes Bakker helped TNT navigate?

B. Preparing to Climb Mt. Everest

Prepare a few personal notes in advance of your first Everest team meeting to facilitate a discussion focused on team dynamics and leadership styles.

Your notes should equip you to explain to your teammates which of the 16 personalities the site calculated you are; what about the assessment results resonated with you; what you think the assessment may have missed; AND most importantly, what insights the assessment gave you into your working style that would be useful for your teammates to understand.

In addition, include and share notes about your strengths and weaknesses in light of the Darden articles. Were their insights that particularly resonated with you? Did parts of the “Leadership and Intelligence” article remind you of yourself or a work interaction you have experienced? Is there a component of making the transition from being the “smart one in the room” to being a leader that provokes emotions in you (excitement, nervousness, concern, or empowerment)?

During your first team meeting focused on the Everest assignment, discuss what from the Darden leadership articles might be most helpful for your team as a whole. Try to put into practice what you have learned and discussed when you climb the mountain!

II-2. September 25. Finance: “Money Makes the World Go Around” — “Show Me the Money”

Read:

- “How to Prepare and Analyze a Balance Sheet” by Zions Bank in Business Builder 2.
- “How to Prepare a Profit and Loss Statement” by Zions Bank in Business Builder 3.
- “How to Prepare a Cash Flow Statement” by Zions Bank in Business Builder 4. ***Read to the top of page 6 and page 16***

To Prepare for Class:

- As you are reading these assignments, make note of any terms that are unclear to you or that you would like more details about. You should be prepared to define the key terms in clear language to your classmates if asked.
- If you have done the optional readings (see below):
What your stance on “stranded assets” and whether Duke University should divest from fossil fuel holdings? Would you include fossil fuel companies in your personal investment portfolio?

How do the technical definitions of “good will” and “intangible assets” differ from how these terms are used in everyday language?

Assignment:
Follow the instructions below and record your answers for questions #3-8 in the Google sheet available at https://docs.google.com/spreadsheets/d/1-P5R8tJodbfcJE_kSMZvSYcYjdfPJURxud7tMaFVJU/edit?usp=sharing

1. Select a publically traded company (all publically traded companies by law publish their financial statements)—Select carefully. I suggest choosing a company you are interested in because of its industry, because you have worked there or would like to work there, because you like their products, or another good reason. You will refer to this same company next week as well.

2. Download the company’s most recent year-end financial statement and make a note of or tag the pages have each of the 3 most important statements: Balance Sheet, P&L, and Cash Flow Statement. Upload the year-end financial statement to their folder on Sakai. [HINT: You will generally find the financial statements through the “About Us” or “Information for Investors” web page.]

3. Of all of the company’s assets, what category of assets is the largest? Which is the largest category of liabilities?

4. Calculate and record working capital and the debt/worth ratio.

5. Record the pre-tax profit margin for the most recent year and compare it to the previous year. Did it go up or down?

6. What were the net sales for the year? What percentage of the income from these sales went to the sum of the cost of goods sold (COGS) and selling and administrative expenses?

7. Calculate and record the current ratio and the quick ratio. What your answer tell you about this company’s likelihood of running short of cash within the next year?

8. Does your company get most of its cash flow from operations, investing, or financing? What percentage of overall cash flow does this largest category account for?

Optional Readings:
- “What is an Intangible Asset?” https://www.investopedia.com/terms/i/intangibleasset.asp
• “What Are Stranded Assets?” http://www.lse.ac.uk/GranthamInstitute/faqs/what-are-stranded-assets/
• Fossil Fuels on Their Way Out Study Says https://thinkprogress.org/fossil-fuels-on-their-way-out-study-says-16511fee1715/
• The issue at Duke University:

II-3. October 2. **Accounting for the Environment: “What are We Counting Any Way?” “What about the Environment?” “Can We at Least be Honest about Risk and Count Carbon!”**

Read:
• “PUMA: Leading the Pack with an Environmental Profit and Loss Statement” by Carol Hee and Nikita Uday Godbole. UNC Kenan-Flagler Business School. Fall 2014.
• “Climate Changes Your Business.” KPMG. 2008. **Focus especially on page 11 and 25-42.**

To Prepare for Class:
- What are the pros and cons of placing a monetary value on nature?
- Why did PUMA CEO, Jochen Zeitz, initiate the Environmental P&L?
- What are the strengths and weaknesses of PUMA’s method for assigning costs to its environmental impacts? How would you recommend these methods be improved?
- How did the outcomes of the E P&L compare with what you expected?
- What, if any, are the competitive advantages of PPR brands conducting E P&L assessments?
- What are the main drivers behind companies reporting climate risk?
- Besides providing information to investors, how can companies benefit internally by measuring (and pricing) their carbon emissions?

Written Assignment: 2 page Informational Memo
The Chief Financial Officer of the company whose financial statements you analyzed for 25-September’s assignment has asked you to provide them with a 2-page double-spaced, 12 point font informational memo assessing the company’s reporting about environmental issues of significance to the company. They want to know whether sufficient information about the company’s environmental impacts included in the financial reports, on the company website, and/or in a separate report? Does the company make a connection between environmental impacts and financial performance in its financial statements or only in separate “sustainability-focused” pages or in a sustainability report?

You should also scan the company’s 10-K for mention of any climate-change-related risk. Based on insights from the assigned readings, what is your assessment of the company’s transparency specifically as it concerns climate change? Are there risks the company should be reporting that it is not? Does the company report the financial implications of any other environmental impacts or risks besides climate change? As far as you can tell, does the company impose an internal carbon tax? Based on the course readings, what recommendations about measuring and reporting would you make to the company’s leadership?

Additional Resource:

Read:
  **Access via Duke e-Library if you have used all of your free articles for the month.**

Watch:
- Bill McDonough’s TED Talk at https://www.ted.com/talks/william_mcdonough_on_cradle_to_cradle_design?language=en

To Prepare for Class:
- Based on the Holiday article and Fisher video, what distinct business models have been at the heart of DuPont since its founding?
- Hannah Jones argues that creating green products is “not going to get us there” when talking about the changes we need to create a sustainable economy. Do you agree or disagree? What business models are more sustainable? What changes, other than to business models, do we need? What role can/should corporations play in these transformations?
- What examples of circularity are you personally familiar with?
- What do you believe are the largest impediments to a circular economy?
- What product or business types do you think most need to become more circular? For which would the change be easiest? hardest? most popular with consumers?

II-5. October 16.
Part 1: Internal Operations—“So HOW Exactly Are We Supposed to Do This?”

Read:
- The following web pages about Lean and Six Sigma:


Listen to Case Study:
- “Nummi” from This American Life. (https://www.thisamericanlife.org/radio-archives/episode/561/nummi-2015. (Transcript is available on website.)

To Prepare for Class:
- In what ways is “green a new twist on the old game of continuous improvement”?
- In what ways would defining environmental strategy as quality management be limiting?
- How would you describe the GM plant in Fredmont, California, before the NUMMI experiment?
- How would you describe the changes that took place as a result of the on-the-ground training GM employees experienced in Japan?
- Picture yourself talking to a classmate not enrolled in this class about the NUMMI podcast. How would you explain the selection of a case that seems to have such a strong employee focus in a class that's supposed to be focused on the environment?

Part 2: External / Supply Operations—“We’re All in This Together”
Watch:
- “What is Supply Chain Management?” from W.P. Carey School of Business at Arizona State University. https://www.youtube.com/watch?v=Mi1QBxVjZAw **Note: This video may come across as a bit simplistic in tone, but it is concise and easy to understand.**
- CDP’s overview of GHG emissions in supply chains: https://www.cdp.net/en/supply-chain

Read:
To Prepare for Class:

- Create a list of the actions a company committed to improving its supply chain sustainability should take in a Google Sheet.
- Come to class with 1-3 names of companies whose supply chain sustainability practices you believe would be interesting to examine.

Additional Resources:

- UN Global Compact – Sustainable Supply Chains https://www.unglobalcompact.org/what-is-gc/our-work/supply-chain

**Reminder: Simulation must be completed by October 18th, Midnight (11:59am))!!**

II-6. October 23.

Part 1: Marketing — “Now that We’re in Business, How Do We Get Customers?”

Watch:


Read:


  o Alternatively, you can watch a video presentation about this report at [https://nbs.net/p/how-to-drive-social-change-webinar-bc5f85cd-8860-4173-b3ce-5d89037f3e22](https://nbs.net/p/how-to-drive-social-change-webinar-bc5f85cd-8860-4173-b3ce-5d89037f3e22).

To prepare for class:

- What is the relationship between sustainability and marketing? between sustainability and product design?
- What lessons would Amy Lockwood like you to remember about marketing products that are good for people’s health? How is the approach advocated by Method similar to that taken by Lockwood?
- Method co-founder Lowry described Method as “green clean for the mainstream, which wouldn’t happen if it wasn’t cool.” To which market segment is Method appealing? What factors contribute to Method’s “cool” factor? What strategies beyond being “cool” are critical to Method’s success and to its appeal beyond the dark green consumer?
- Which consumer behaviors do you believe are the most important for companies to address? Which company/ies are best suited to take on this challenge?

**Assignment:** 2 page *Decision Memo – LUSH Cosmetics*

Place yourself in the shoes of an expert sustainability marketing consultant who is very familiar with the success Method has achieved. The Chief Marketing Officer of LUSH ([https://www.lushusa.com/](https://www.lushusa.com/)) has asked you for advice about how to expand their marketing strategy in order to capture new customers. Using your knowledge of Method, the article “The Seven Questions of Marketing Strategy” as a guide, and informed by the other readings’ insights about the “green” consumer, **write a 2-page double-spaced, 12 point font memo addressing the CMO’s question.** Your answer should have details about the ideal market segment(s) to target; how to position the LUSH brand relative to competitors’ products; and what customer desires LUSH aims to fill.

**Additional Resources:**


Part 2. Everest Debriefing — “We Made it to the Top of the Mountain. What Have We Learned?”

**Reminder: Simulation must be completed by October 18th, Midnight (11:59am)!!**

To Prepare for Class:

- Reflect on your experience completing the Everest simulation.
- Questions to consider:
  - Did insights from the personality assessment provide value to you and/or your team?
  - How did your team deal with conflicts or differences of opinion?
  - With the advantage of hindsight, what would you do differently?
  - What was the most interesting or rewarding part of this exercise?
Module III: Why do businesses engage in sustainability? [Deb Gallagher]

A four–week module that introduces sustainability as a driving force in business decisions, covering these motivations for sustainability:

1. Stakeholders
2. Governments
3. Markets

The module will culminate in an integrative assignment which student teams will present, in Pecha Kucha form, a leading company’s motivation for practicing sustainability.

III-1 October 28. Stakeholder Activism, Introduction to Team presentation

Read:
- Engaging with Stakeholders: 12 Pitfalls to Avoid on the Path to Managing Reputational Risks
- Guidelines for Pecha Kucha

Watch:
- Pecha Kucha on Pecha Kucha [https://www.youtube.com/watch?v=L31SwpN1dAc](https://www.youtube.com/watch?v=L31SwpN1dAc)

In-Class Assignment:
- Brands Taking Stands (live case)

III-2 October 30. Mining in Madagascar

Read:
- Mining in Madagascar (case)

Consider these questions as you read the case:
- What are the positions of the representatives of the three main stakeholder groups regarding the Ambatovy project?
- How would you advise Paul to proceed to achieve a consensus approach going forward?

Assignment:
- Case Analysis Framework for Mining in Madagascar (teams)

III-3 November 4. Government regulation

Read:
- Profiting from Environmental Regulatory Uncertainty: Integrated Strategies for Competitive Advantage

Watch
In-class Assignment:
- Response to new policy or regulation (live case)

III-4 November 6. First Solar
Read
- First Solar

Consider these questions as you read the case:
- How important is recycling to the solar energy industry? What are the regulatory incentives for entering the solar panel recycling market?
- What is the nature of the solar panel recycling market? What are the opportunities and threats?
- What is First Solar's business plan to recycle solar panel modules?
- Would you recommend that Alex Heard and Suhhwant Raju pursue solar module recycling as a profit center?

Assignment:
- Case Analysis Framework for First Solar (teams)

III-5 November 11. Markets and Finance
Read:
- Sustainability a CFO Can Love

Watch:

In-Class Assignment:
- Work on Final Presentations

III-6 November 13. The Clorox Company: Leveraging Green for Growth
Read:
- The Clorox Company: Leveraging Green for Growth (Case)

Consider these questions as you read the case and prepare the e-mail and memo:
- Does it make sense for the Clorox Company to continue to leverage “green” for growth?
- What would the financial implications on Clorox’s legacy brands be if the company built out the three sustainable brands (Brita, Burt’s Bees and Green Works)?

Assignment:
- Decision Memo recommending a course of action to Beth Springer, EVP and Officer, Eco Office, Clorox.

III-7 November 18. Team Presentations

III-8 November 20. Wrap Up, Course Evaluation and Celebration