



NYU

**ROBERT F. WAGNER GRADUATE
SCHOOL OF PUBLIC SERVICE**

PADM-GP 4467

Managing for Environmental Sustainability

Spring 2022

(PADM-GP.4467) 1.5 credits

Course Information

Instructor: Cassandra L. Thiel, clt5@nyu.edu

Office Location: Puck 3071

Office Hours (variable): by appointment (please email to schedule)

Administrative Assistant: Harry Boadu, hb1024@nyu.edu

Class Date: Tuesdays, 4:55-6:35pm (starting 25 January)

Class Location: BOBST, LL113 (70 Washington Square S)

Course Description and Objectives

This 7-week short course provides a general introduction to environmental sustainability and touches on the science, concepts, and strategies used to “green” businesses, organizations, and individuals’ lifestyles. Modern consumers are demanding sustainability from organizations where they utilize or buy goods and services and in which they invest. Modern management and policy leaders, then, need to know what environmental sustainability is and which tools are available to improve the footprint of their organizations and businesses.

By the end of this course, students will be able to think critically about the environmental, societal, and economic impacts of human activities and systems. Students will be familiar with emissions quantification methods and sustainability reporting tools, including certification programs for individuals and businesses. Students will also learn various strategies for service organizations to decrease their environmental footprint and to market those activities to meet the demands of an emerging consumer base.

This course will cover the following topics:

- 1) The Environmental Movement & the Services Provided by Nature
 - Water pollution
 - Waste
- 2) Specific Environmental Concerns of Today
 - Climate change
 - Air pollution
 - Human health
 - Diversity of life

- 3) Human Infrastructure Systems and their Impacts
- 4) Sustainability Measurement and Reporting Tools
 - ISO standards
 - Life Cycle Assessments and Environmental Product Declarations
 - Certification programs for your organization and you
- 5) Cross-Disciplinary Considerations
 - Environmental justice
 - Global supply chains
 - Misaligned/Misguided environmental policies
- 6) Strategies for embedding Environmental Sustainability in Organizations
- 7) Sustainability Policy

There are NO PREREQUISITE courses for this course.

Course Text and Materials

There is NO REQUIRED TEXTBOOK for this course. The required readings will come from the following two sources:

- **Brightspace** will be used to post readings and assignments throughout the semester. Students are encouraged to check it frequently. Many of the readings listed in this syllabus can be found online. In such cases, links can be found on Brightspace.

The course materials will be drawn from the following books, which are NOT REQUIRED but may be of interest to students who wish to dive further into specific topics:

- Thinking in Systems: A Primer. Meadows, D. 2008. Chelsea Green Publishing.
- The Sustainability Edge – how to drive top-line growth with triple-bottom-line thinking. Apte & Sheth. 2016. University of Toronto Press.
- Fostering Sustainable Behavior- an introduction to community-based social marketing. McKenzie-Mohr. 2015. New Society Publishers.
- The Responsible Company – what we've learned from Patagonia's first 40 years. Chouinard & Stanley. 2012. Patagonia Books.

Course Grading and Requirements

In this course, we will develop an understanding of environmental sustainability through lectures, readings, assignments, and case studies. Final grades are determined by the following course components:

- **Assignments (80%)** **Individual or Team**
There will be four assignments, each worth 20% of your grade. Each assignment will be submitted electronically through Brightspace either individually or as an assigned team (see details with each assignment). Regardless of submission requirements, students are encouraged to interact and consult with each other on assignments and readings.
- **Classroom Participation (20%)** **Individual**
Interaction with the material and your peers is crucial to engaging in the tough issues of sustainability. You are expected not only to attend class, but to be an **active** participant! This means completing the readings beforehand, being engaged, asking questions, bringing critical discussion, and enjoying it. 😊

Assignments Overview

Each assignment is worth 20% of your total grade. More detailed information on the assignments can be seen below.

Assignment 1: Your Moment in Nature

This individual assignment will help students connect their day-to-day lives with the natural world and ecosystem services, allowing students to critically reflect on the emotional and physical role the natural world plays in their lives. There is a larger reason to move towards sustainability that extends beyond the financial gains or customer loyalty. The Earth is crucial not only to our survival, but also to all of the things we utilize and take for granted in our daily lives. Without nature providing vital services (from providing raw materials for our goods to breaking down our waste products after consumption), none of us would exist. Assignment 1 will also prepare students for discussions later on, around consumption patterns and tools/strategies to address resource use in organizations.

Assignment 2: Environmental Emissions Infographic (Group Project)

In this team assignment, students will design and develop an infographic (targeted for release on social media platforms, ex: Twitter) on the science behind, and implications of, a certain type of environmental emission. There are no limits to the size of the infographic; it should use enough space to effectively express the purpose and content criteria. In general, infographics should be accurate (in terms of the science, etc.), succinct or brief (easy to understand), and interesting or eye-catching (fun!).

A grading rubric is provided on the assignment. Each component is graded as either exceeding expectations (5 points), meeting expectations (3 points), or needing more work (1 point). The categories and their weighting on the total grade are: Content (50%), Design & Mechanics (20%), Visual Appeal (20%), and Citations (10%).

Assignment 2 allows students to dig into the science behind environmental impact calculations. Though they will only be exploring one type of environmental emission, they will need to synthesize in-class lectures and reading resources into a meaningful infographic. Teaching is the best way to learn, and an infographic allows students to be creative without formal presentations (for which we do not have the time). This assignment helps students connect human activities with resulting environmental emissions, solidifying the “systems thinking” approach required for environmental sustainability.

Assignment 3: Quantification Techniques

Assignment 3 will allow students to practice some of the quantification techniques (material flow analysis and life cycle assessment) learned in class, while also critically thinking about a real-world example. This assignment will have students complete a basic material flow analysis of a simple system, run a very basic carbon footprint, and finally, critically assess the claims of a “carbon neutral” business.

Assignment 4: Sustainability Strategies (Group Project)

Finally, Assignment 4 is geared to give the students practice in tailoring sustainability strategies for an organization. This requires students to synthesize what they have learned in this course, and perhaps also build on skills they have learned in other management courses. Students will be given a made up company “case study” and will need to develop a sustainability strategy to address the concerns and goals of both executive leadership and consumers. This will be a 1-2p essay (memo style) as if the students were consultants for the company.

Course Policies

Assignment Submission. All homework answers should be submitted electronically through Brightspace, unless otherwise noted in class. **Each should be properly labeled with your name (teammates' names), the course number, the assignment number, and the date.**

Attendance. You should arrive to class on time with all pre-requisite readings or assignments completed. Any absence must be explained and justified **beforehand**.

Late assignments. Extensions will be granted only in case of an emergency, out of respect for those who abide by deadlines despite hectic schedules. Late submissions **without prior permission** will be penalized by 10% of the grade per day (so if you are 1 day late and would have scored 100%, your grade is 90%).

Students with disabilities. Any students requiring accommodation should contact me to make proper arrangements. Please be prepared to share your documentation from the [NYU Moses Center for Students with Disabilities](#).

[NYU/Wagner grading policy](#)

[NYU/Wagner academic integrity policy](#)

Course Calendar (Schedule at a Glance)

#	Date	Description	Assignments (Due at Start of Class)
1	1/25	The Natural World and the Value of Ecological Systems	
2	2/1	Environmental Emissions	1: Your Moment in Nature
3	2/8	Impacts from Human Systems	
4	2/15	Measurement and Reporting Tools	2: Infographic on environmental problem
5	2/22	Cross-Cutting Issues: Sustainable Development and Environmental Ethics	
6	3/1	Sustainability in your Business: Sustainability Strategy and Marketing	3: Quantification Techniques: Environmental Footprinting
7	3/8	Sustainability in Policy: Encouraging Behavioral Changes	4: Sustainability Strategies

Course Schedule (Detailed)

All readings can be found in Brightspace. Anything in Brightspace labeled “Optional” means it is readily available and a good read. Anything labeled “Recommended” may take more effort to find or use (eg. A book) but is an excellent resource.

(Abbreviations: TED = Technology, Education, Design; BBC = British Broadcasting Corporation; PBS = Public Broadcasting Service)

<p>W1: Introduction & Background</p> <ul style="list-style-type: none"> • Values – Environment / Nature • What Nature does for humanity <ul style="list-style-type: none"> ○ ecosystem services ○ separation of humans from nature in history • IPAT equation <ul style="list-style-type: none"> ○ Human growth and development ○ Human impact on the environment 	<p>Readings & Assignments (Assigned):</p> <p>Required:</p> <ul style="list-style-type: none"> • Assignment 1: Your Moment in Nature (Individual) is issued • Watch: <ul style="list-style-type: none"> ○ Emma Marris TED talk (16 min) ○ Pollution Crash Course (10 min) • Read: <ul style="list-style-type: none"> ○ UN – Our Common Future, The Brundtland Report (skim it) ○ Vucetich – Humans and Nature ○ White – Historic Roots of Our Ecological Crisis <p>Optional/ Recommended:</p> <ul style="list-style-type: none"> • Read: Rieder – Population Engineering and the Fight Against Climate Change • Watch: PBS documentary on Rachel Carson (2 hours) • Watch: playlist of nature TED talks • Watch: any TED talk by Hans Rosling • Read: (book) Rachel Carson’s Silent Spring (1962)
<p>W2: Today’s Environmental Concerns</p> <ul style="list-style-type: none"> • Major environmental issues today <ul style="list-style-type: none"> ○ The Science of Climate Change ○ Air Issues ○ Water issues ○ Land use changes • Environment and health issues <ul style="list-style-type: none"> ○ Toxicity, bioaccumulation, and human health ○ Biodiversity 	<p>Readings & Assignments (Assigned):</p> <p>Required:</p> <ul style="list-style-type: none"> • Assignment 1 DUE • Assignment 2: Infographic Team Project: develop a tweetable infographic describing a specific environmental issue (Team) is issued • Read: How plastic bags were supposed to help the planet - BBC • Read: UN Biodiversity Report • Read: Guardian Lifetime of Plastics (graphic novella) <p>Optional/Recommended:</p> <ul style="list-style-type: none"> • Listen: NPR A Ticking Time Bomb under the Arctic • Watch: <ul style="list-style-type: none"> ○ A Plastic Ocean movie on plastic pollution (2016) ○ Tapped movie on bottled water (2009) • Read: (book) Banning DDT how citizen activists in WI led the way. Berry (2014) • Read: Living Planet Report (2020)

W1: Introduction & Background	Readings & Assignments (Assigned):
W3: Human Systems and their Impacts	Readings & Assignments (Assigned):
<ul style="list-style-type: none"> • General Sustainability Frameworks • Tragedy of the Commons • Systems thinking <ul style="list-style-type: none"> ○ Energy and fossil fuel consumption ○ Buildings & Transportation ○ Food systems ○ Businesses and service organizations • Material Flow Mapping and Material Flow Analysis (MFA) 	<p>Required:</p> <ul style="list-style-type: none"> • Read: a Pick 1 item (there's a LOT of options) • Read: Excerpt from The Responsible Company • Watch: LCA of Cascades Papers (4 min) • The State of Sustainability Reporting in the US (Harvard Law School Forum) <p>Optional/Recommended:</p> <ul style="list-style-type: none"> • Read: (book) The Responsible Company. Patagonia. 2012. • Read: (book) Thinking in Systems, A Primer. Meadows. • The other "Pick 1" readings listed above. • The US DOE's Commercial Building Energy Consumption report (CBECS)
W4: Measurement and reporting tools	Readings & Assignments (Assigned):
<ul style="list-style-type: none"> • Life Cycle Assessment and Carbon Footprinting <ul style="list-style-type: none"> ○ Scope I,II,III ○ Process LCA basics • Environmental Product Declarations • LCA-based certifications • Handprints • Trade-offs in Impacts and Decision-Making from Data 	<p>Required:</p> <ul style="list-style-type: none"> • Assignment 2 DUE • Assignment 3: Quantification Techniques with MFA, LCA, Scoping, etc. • Read: <ul style="list-style-type: none"> ○ Pick an EPD Example ○ When to Commission an LCA ○ The Tragedy of the Tragedy of the Commons ○ NPR - Recycling Pacemakers in India ○ Guardian – Tribes pay brutal price of conservation <p>Optional/Recommended:</p> <ul style="list-style-type: none"> • Read: free LCA textbook and CMU's free EEIOLCA online tool
W5: Cross-Discipline Considerations	Readings & Assignments (Assigned):
<ul style="list-style-type: none"> • Issues in developing countries: sanitation and public health, changes in material resources without corresponding changes in treatment options • Ethical issues: links between environmental emissions and poverty • Sustainability traps: failed policies to address 	<p>Required:</p> <ul style="list-style-type: none"> • Read: <ul style="list-style-type: none"> ○ Where does America's e-waste end up? ○ Should your company be a benefit corp.? ○ Netflix ESG Report <p>Optional/Recommended:</p> <ul style="list-style-type: none"> • Read: <ul style="list-style-type: none"> ○ NPR: After Decades Of Air Pollution, A Louisiana Town Rebels Against A Chemical Giant ○ Washington Post: Poop Train

W1: Introduction & Background consumption (one-child, forced sterilization, etc.)	Readings & Assignments (Assigned):
W6: Developing Sustainable Strategies	Readings & Assignments (Assigned):
<ul style="list-style-type: none"> • Corporate / Organizational responsibility <ul style="list-style-type: none"> ○ Sustainability strategy development ○ Management tools ○ Sustainable/ethical investment accounts ○ Silos and open access ○ Product development and design • Certifications and Legal Designations for Businesses 	<p>Required:</p> <ul style="list-style-type: none"> • Assignment 3 DUE • Assignment 4: Sustainability Strategies • Read: Pick 1 options • Watch: Kalundborg industrial ecology example (3 min) • Read: Making a Better Business Case for Sustainability • Read: Missed Targets: When companies fail • Read: NYT How to Stop Freaking Out <p>Optional/Recommended:</p> <ul style="list-style-type: none"> • Read: NYC Carbon Action Plan • Read: CLEAN Future Act Memo • Interface website
W7: Sustainability in Policy	Readings & Assignments:
<ul style="list-style-type: none"> • Policies for Sustainability <ul style="list-style-type: none"> ○ COP commitments ○ UK and other national directives ○ US approaches to sustainability policies • Sustainability in Individual Lives <ul style="list-style-type: none"> ○ Behavioral changes ○ Activism and group networking • Future of the planet • Careers in sustainability • Course recap 	<p>Required:</p> <ul style="list-style-type: none"> • Assignment 4 DUE • Watch: Alex Steffen TED Talk (18 min) • Read: We need courage, not hope. • Check out: Website for Green Jobs and Website with Eco-NGOs <p>Optional/Recommended:</p> <ul style="list-style-type: none"> • Read: (book) Losing Earth a Recent History • Read: (book) Leadership for Environmental Sustainability. Redekop. 2010. • Read: How European cities are handling climate change