Class Information: Thursdays 6:45-8:25pm, March 22- May 3, 2018, Classroom: 60 5th Ave, Rm C04 Loc: Washington Square

Stephen R. Freedman

Email: sf147@nyu.edu

Office Hours: by appointment

Prerequisites: CORE-GP 1021 and CORE-GP 1022 or URPL-GP 2660, PADM-GP 2311 recommended

Course description and objectives:

This 7-week course will provide students a thorough understanding of how key environmental challenges can be addressed through innovative financing and investment strategies. Topics will include an overview of the main financial instruments and the key thematic areas of the growing field of environmental finance. Students will be introduced to instruments, structures and investment approaches to achieving positive environmental outcomes and impact including, but not limited to private market investments, renewables, climate and green bonds, water investments and conservation finance.

Reading materials:

There is no assigned textbook for this course. Reading material for each of the seven weeks is based on publicly available reports and articles.
Academic Integrity:
Academic integrity is a vital component of Wagner and NYU. Each student is required to sign and abide by Wagner’s Academic Code. Plagiarism of any form will not be tolerated since you have all signed an Academic Oath and are bound by the academic code of the school. Every student is expected to maintain academic integrity and is expected to report violations to me. If you are unsure about what is expected of you, ask.

Henry and Lucy Moses Center for Students with Disabilities at NYU:
Academic accommodations are available for students with disabilities. Please visit the Moses Center for Students with Disabilities (CSD) website at www.nyu.edu/csd and click on the Reasonable Accommodations and How to Register tab or call or e-mail CSD at (212-998-4980 or mosescsd@nyu.edu) for information. Students who are requesting academic accommodations are strongly advised to reach out to the Moses Center as early as possible in the semester for assistance.

Class Policies:
This course will abide by the Wagner School’s general policy guidelines on incomplete grades, academic honesty, and plagiarism. It is the student’s responsibility to become familiar with these policies. All students are expected to pursue and meet the highest standards of academic excellence and integrity. Please familiarize yourself with the following guidelines:

Incomplete policy, Course withdrawal policy, Grading policy

Assignments and evaluation:

Class Participation (including case study): 25% of total grade

Participation is awarded based on attendance (one unexcused absence permitted), punctuality and engagement in class discussions. Missing or being late for two or more classes for the semester will negatively impact your participation grade. Extraordinary circumstances include religious observances and illness but you must give notice via email as soon as possible. If you foresee missing a class due to personal obligations, please notify me via email but also note that it will count as your one allotted unexcused absence. All students benefit from high levels of participation, so you are expected to do readings prior to class, attend class, and contribute to the discussion. Attendance is taken at the beginning of every class and I will be making note of those who routinely participate in the discussion. Active participation during the case study in week 4 will receive particular weight.

Written Assignments (due on weeks 2 and 6): 30% of total grade
Final Take-Home Exam (after week 7): 45% of total grade
NYU Classes:
All announcements, resources, and assignments will be delivered through the NYU Classes site. I may modify assignments, due dates, and other aspects of the course as we go through the term with advance notice provided as soon as possible through the course website.

Overview of Semester:

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<td>Week 2</td>
<td>29 March</td>
<td>Investment instruments available to finance environmental goals</td>
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<td>Week 3</td>
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<td>Case study on renewable energy; Waste management and the circular economy</td>
<td>Case study</td>
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<td>Week 7</td>
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<td>7 May</td>
<td>Final take-home assignment due</td>
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Detailed Course Overview

Lecture 1: Introduction (March 22, 2018)

- Scale of environmental challenges (global footprint network, planetary boundaries)
- The Environmental with the UN’s Sustainable Development Goals
- Critical need for private capital given scope of funding gap
- Interdependencies abound: The water – energy – food nexus
- Overview of course

Reading Material

Overview of Environmental Challenges:


Business case Environmental Sustainability:

Addressing pollution:


The role of private capital:


Acknowledging interdependencies:


Optional reading


Lecture 2: Investment instruments available to finance environmental goals (March 29, 2018)

- Private markets investments (Equity, debt, real assets)
- Thematic equity investments
- Shareholder engagement
- Green bonds (state of the market's development, potential, outstanding issues)
- Pay-for-success contracts

Reading Material

Overview of Investment Instruments:

Environmentally themed investments in listed securities:

- UN Principles for Responsible Investment (2012), “Environmental and social themed investing”.

Conservation Notes:


Green bonds:


Environmental impact bonds:


Shareholder engagement (examples):

- Trillium Asset Management shareholder proposal for Whole Foods Market.

Optional reading:


Lecture 3: Water (April 5, 2018)

- Challenge of water scarcity
- Water cycle and water value chain
- Types of investment (infrastructure: green vs grey, treatment, contamination prevention, demand management etc)
- Water investments as climate change adaptation
- Water rights and water markets
Reading material

Water Investing:

Water rights:

Optional reading:

Lecture 4: Climate change investing (April 12, 2018)
- Mitigation vs adaptation
- Pathways to 2 degrees warming scenario: all hands on deck
- Renewable energy
- Energy efficiency
- Going carbon negative? Carbon capture and storage

Reading material

Overview of investment options for climate change investing:

Investing in Mitigation:
• IEA (2015), "Carbon Capture and Storage: The solution for deep emissions reductions".

Investing in Adaptation

Emissions Trading:
• California Environmental Protection Agency (2015), Overview of ARB Emissions Trading Program.

Optional reading

Lecture 5: Case study renewable energy; Waste management and the circular economy (April 19, 2018)

• Renewable energy case study
• Limits of linear economy
• Introducing the circular economy: Ellen McArthur foundation
• Rethinking business and production processes
• Merging of impact investing and ESG

Reading material

Case study

Waste Management:
Circular Economy:


Optional reading:


Lecture 6: Sustainable agriculture (April 26, 2018)

- Challenge of feeding 9 billion people
- Limits arising from food - water - energy nexus
- Harnessing natural processes: holistic approaches
- Role of technology
- Sustainable agriculture as climate change adaptation

Reading material

Agricultural sector:

Investing in agriculture:
Optional reading

• Murray, L. and McGrath, M. (2016), "Sustainable Farmland Investment Strategies: An Introduction to Current Conditions", Yale School of Management & Yale School of Forestry and Environmental Studies, November.

Lecture 7: Miscellaneous concluding topics (May 3, 2018)

• Trends in Conservation Finance: going mainstream
• Environmental Finance and developing countries: triple bottom line opportunities
• Outlook

Reading material

Conservation Finance:
• Credit Suisse (2016), "Conservation Finance, From Niche to Mainstream: The Building of an Institutional Asset Class".

Environmental Finance in Developing Countries: