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**Emory University**

**ENVS 524 / MDP (Masters in Development Program) 521 syllabus (offered concurrently as ENVS 324 for upper-level undergraduates)**

Background re. Syllabus development

I've now taught introductory environmental economics & policy analysis, in one form or another, off and on over the past 17 years. During that time, my students have been primarily non-Economics majors at either undergrad or MSc levels. For a time, I taught the course in a much more theoretical manner (e.g., basics of duality theory, random utility modeling, etc...). However, I've found that even for students with an economics background, that they often lacked a good understanding of how economics related to real-world environmental policy challenges. As such, my teaching has evolved to focus more on 'thinking like an economist' rather than cranking through the mechanics of supply and demand. For this year's iteration, I'm going through some fairly major changes, cutting back substantially on lectures and incorporating much more time on interpreting current environmental policy issues using a supply and demand framing (3 practical sessions). In addition, I'm incorporating a 'media Q&A' component this year (which I tried for the first time last year in a small science-policy seminar), which has students read recent academic articles and then act as if they were the author answering a media person's queries regarding the article and its implications (each student has both interviewee and interviewer roles once during the term). The course starts with key environmental microeconomic basics (constructing demand curves, valuation in the absence of budget constraints, etc...), then moves to game theory and its applicability to international carbon policy. In the final two months, we cover a variety of specific environmental management challenges, all while keeping a primary focus on how to apply microeconomic theory. As the course will be a core offering for the Master's in Development Program starting this year, I'm also working to increase the emphasis on poverty and health issues by making the environmental dimensions of sustainable development a broad theme that will carry through the semester.

# ENVS 524 / MDP 521 – Environmental Economics & Policy

**Term:** Autumn 2017 (2016-17 academic year); **Prerequisites:** Enrolment in ENVS or MDP Master's programs, at least one course in undergraduate-level economics, or Dr. Rudd's permission.

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## 1. Contact Information

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## 2. General Information

### Schedule

Classes will be held in White Hall 103, Tuesdays and Thursdays (2:30 to 3:45 p.m.) during Autumn semester, 2016-17. Note that this course is cross-listed with B.Sc. ENVS 324.

### Assessment

This course will be assessed using four components

1. Supply and demand problem sets – short exercises that ask you to frame environmental policy problems in economic terms (20% of overall grade)
    - 2 sets at 10% each
  2. 'Q&A' sessions – short classroom 'media interviews' that ask you to choose a journal article and answer questions about it from an interviewer (another student) (15% of overall grade)
    - Answering questions (interviewee component) = 10%
    - Preparing questions (interviewer component) = 5%
  3. Class participation (15% of overall grade)
    - Active participation in environmental policy / economics twitter feed = 10%
    - Attendance and active class participation = 5%
  4. Term paper (50% of overall grade)
    - Preparation of term paper research question = 5%
    - Term paper literature search = 10%
    - Term paper structural outline = 5%
    - Final paper = 30%
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## 3. Course Overview

This course aims to introduce students to the field of environmental economics and the roles that economic thinking, theory, and analysis can play in modern environmental management. While non-mathematical, this course will emphasize the importance of being able to 'think like an economist'. There is no core text for this course; instead there will be a reading list with core (essential), recommended, and background readings drawn primarily from environmental economics journals. I have also set up a Twitter hashtag (#EmoryEE2016) for the course so we can track current news and draw on real-world examples to complement academic research readings.

In the first part of the course, we will cover a range of topics that will help build general understanding about what economics is, the role of economics in achieving environmental sustainability, how economic thinking can (and needs to) inform environmental management, the assumptions that underlie neoclassical (microeconomic) economic theory, and how alternative schools of economic thought (e.g., ecological economics) may diverge in their assumptions and problem-solving prescriptions for achieving environmental and social sustainability. Our focus will be largely on microeconomic phenomena arising from the collective behaviour and choices of individuals, households and firms, and how economics can be used to help interpret and inform policy that shapes behavioral incentives. We will take a cost-benefit analysis perspective, which will include an

introduction to non-market valuation of ecosystem services (a full course on that subject is being offered in spring term 2016/17). At a broader level, we will also introduce game theory and the role of strategic thinking in understanding how international environmental agreements have been developed for controlling ozone depletion, climate change, and the trade of endangered species.

In the second part of the course, we will use the insights gained in the first half to shift our focus to environmental policy and management in different sectors. With an ‘economic hat’ on, we explore possible solutions to diverse challenges in food supply, water management, pollution control, climate change, fisheries management, poverty alleviation, and/or renewable energy production.

#### **4. Course Outcomes**

Successful completion of the course will demonstrate that students can:

- Frame environmental issues in supply and demand context, and be able to provide theory-based perspectives on the likely economic effects of different types of policy instruments;
- Understand market operation and failure, and options for correcting environmental market failures using regulation, taxes, and tradable permits;
- Use concepts from game theory to understand strategic behaviour regarding international environmental agreements (e.g., Montreal Protocol; climate change policy options);
- Understand the contributions that economics and policy analysis may make in helping to achieve the UN’s Sustainable Development Goals (SDGs)
- Communicate in writing at an appropriate academic level.

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#### **5. Schedule and topics (subject to adjustment):**

Week 1 (Aug 25)	Introduction
Week 2 (Aug 29/Sep 1)	Microeconomics basics (1) / Externalities & ethics
Week 3 (Sep 6/8)	Microeconomics basics (2) / Publish or Perish practical 1
Week 4 (Sep 13/15)	Environmental valuation / Supply & demand charting practical 1
Week 5 (Sep 20/22)	Game theory (1) – Montreal Protocol / Publish or Perish practical 2
Week 6 (Sep 27/29)	Game theory (2) – Kyoto Protocol / Supply & Demand practical 2
Week 7 (Oct 4/6)	Carbon policy – Copenhagen Accord / Supply & Demand practical 3
Week 8 (Oct 13)	Fall break / Carbon policy – Paris Accord
Week 9 (Oct 18/20)	Biodiversity policy / Q&A session 1
Week 10 (Oct 25/27)	Urban water economics / Q&A session 2
Week 11 (Nov 1/3)	Fair trade and eco-labels / Q&A session 3
Week 12 (Nov 8/10)	Economics of happiness / Q&A session 4
Week 13 (Nov 15/17)	Dealing with risk & uncertainty / Q&A session 5
Week 14 (Nov 22)	Q&A session 6 / Thanksgiving
Week 15 (Apr 19/21)	UN Sustainable Development Goals / wrap-up – review

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#### **6. Readings**

An extensive reading list will be provided in this course. Essential readings will be identified; I expect those to be read prior to attending classes. There is no required text for this course but anyone with long-term interests in environmental economics may find it useful to purchase one of:

Edwards-Jones, G. *et al.* 2000. *Ecological Economics – An Introduction*, Blackwell.

Harris, J. M. and Roach, B. 2013. *Environmental and Natural Resource Economics: A Contemporary Approach*. ME Sharpe.

Tietenberg T. 2014. *Environmental and Natural Resource Economics* (10<sup>th</sup> edition) Pearson.

Perman R. *et al.* 2011. *Natural Resource and Environmental Economics* (4<sup>th</sup> edition) Pearson.

Weimer, D. and Vining, A.R. 2014. *Policy Analysis: Concepts and Practice*, Pearson.