

University of Essex, Department of Economics

# EC383 Environmental Economics

## Autumn 2023

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Last Updated: October 30, 2023  
**Preliminary and subject to change**

### Meetings

Lectures: Tuesdays 1pm-3pm at LTB09 (Week 2-11)  
Classes: Thursdays 1pm-2pm at EBS.2.34 (Week 3-11)  
Office hours: TBA

### Module Description

This module covers the theory of environmental and resource economics. Topics include the economics of market failures, how to set the targets of pollution, what are the main instruments to fight pollution, the tragedy of the commons, non-renewable and renewable natural resource extractions, groundwater markets and governance, forest conservation, climate change, and environmental considerations in economic geography. This module equips you with a basic theoretical framework to analyze environmental policy issues and introduces frontier academic research on these topics, with particular emphasis on real-world problems in developing economies.

### Learning Goals:

By the end of this module, we hope you will be able to:

- Apply basic microeconomic theory to environmental policy issues and evaluate when and how government and market-based solutions to them are effective
- State the key environmental problems in developing countries and understand their possible causes and consequences
- Read and digest empirical research papers in environmental and resource economics, and understand their economic intuitions and policy implications

### Main Textbook

The lectures will follow the textbook:

**Perman, R. et al., *Natural Resource and Environmental Economics*, Fourth Edition, Pearson, 2011.**

Other readings are listed below and additional readings may also be announced during the module.

### Assessment and Feedback

The final mark will be the average between (i) the online assessment and (ii) the final exam mark.

## Topics and Readings<sup>1</sup>

### **Week 2: Introduction (Economic Development and the Environment); Market Failures**

Required readings: Fullerton and Stavins (1998); Jayachandran (2022); Perman et al. Ch. 4

Optional readings: Barrett et al. (2023); Dasgupta (2010); Greenstone and Jack (2015)

### **Week 3-4: Pollution Targets**

Required readings: Perman et al. Ch. 5, Ch. 16.4

Optional readings: Aldeco et al. (2021)

### **Week 5-6: Pollution Instruments; Pollution Policy with Imperfect Information**

Required readings: Perman et al. Ch. 6, Ch. 7

Optional readings: Duflo et al. (2013); Greenstone et al. (2023)

### **Week 7: Causes and Consequences of Air and Water Pollution**

Required readings: Garg et al. (2023); Greenstone and Hanna (2014); Lipscomb and Mobarak (2016)

Optional readings: Jack et al. (2022); Jayachandran (2009); Khanna et al. (2021); Oliva (2015)

### **Week 8: The Tragedy of the Commons**

Required readings: Hardin (1968); Bardhan and Udry (1999) Ch. 13; Wydick (2007) Ch. 4;

Coppock et al. (2022); Ryan and Sudarshan (2022)

Optional readings: Cheung (1970); Dasgupta and Mäler (1995); Gordon (1954); Ostrom (1990); Ostrom and Gardner (1993); Seabright (1993); Mazur (2023)

### **Week 9: Non-Renewable Resources; Groundwater Markets and Governance**

Required readings: Perman et al. Ch. 15; Jacoby (2017); Jacoby et al. (2004); Sekhri (2011)

Optional readings: Chakravorty et al. (2008); Foster and Rosenzweig (2008); Fishman et al. (2023); Giné and Jacoby (2020)

### **Week 10: Renewable Resources; Forests**

Required readings: Perman et al. Ch. 17; Balboni et al. (2023); Jayachandran (2023); Jayachandran et al. (2017); Alix-Garcia et al. (2013); Abman et al. (2023); Szerman et al. (2022)

Optional readings: Angelsen (1999); Brander and Taylor (1998); Foster et al. (2002); Tsuda et al. (2023); Burgess et al. (2023); Burgess et al. (2012); Perman et al. Ch. 18

### **Week 11: Climate Change, Economic Geography, and the Environment**

Required readings: Balboni (2019); Conte (2022); Jedwab et al. (2022); Tsuda et al. (2023)

Optional readings: Burgess et al. (2017); Kala et al. (2023); Morgan et al. (2022); Schlenker and Lobell (2010); Zhao et al. (2017); Burke et al. (2015); Hsiang et al. (2013)

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<sup>1</sup>Other optional readings may be announced during lectures.

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