

# Syllabus

**Course:** Environmental Economics (IKT5131, Gr1)

**Instructor:** Assoc. Prof. Tunç Durmaz

**Office hours:** By email ([tdurmaz@yildiz.edu.tr](mailto:tdurmaz@yildiz.edu.tr))

## COURSE OBJECTIVES

The course aims to stimulate critical thinking about environmental challenges and policies designed to overcome them. The course focuses on a range of environmental policies and the accompanying instruments available to attain sustainable environmental outcomes.

## COURSE CONTENT

The course encompasses theoretical and practical aspects of environmental policy design and policy instruments to address environmental issues such as local air pollution and climate change. The use of pollution taxes, tradable emission permit systems, market certification, and other voluntary and mandatory policy instruments are discussed in depth. In the later stages, we will focus on climate change and discuss economic growth and carbon emissions. This will require us to focus on non-carbon emitting technologies and policies that will enhance their demand. In the final part of the class, we will focus on the relationship electricity markets and the environment with an emphasis on the decarbonization of electricity production.

## COURSE LEARNING OUTCOMES

On successful completion of the course, students will be able to

- demonstrate an in-depth understanding of the theory;
- analyze current environmental issues and suggest policy instruments to address them;
- understand the role of technological change and non-carbon emitting in technologies achieving green growth;
- apprehend the relationship between global climate change and electricity markets, and discuss how policies can be formulated and the sector can be redesigned to reduce its carbon footprint.

## TOPICS:

-The origins of sustainability **(P)**

Economy-environment interdependence

The drivers of environmental impact

~~Poverty and inequality~~

Limits to growth?

## The pursuit of sustainable development

### -Welfare and markets **(P)**

- Efficiency and optimality
- Allocation in a market economy
- Market failure, public policy, and the environment

### -Introduction to the theory of Environmental Policy **(PR)**

- A simple model of damages and costs
- Property rights and the Coase theorem
- Environmental policy instruments

### -Competitive output markets **(PR)**

### -Non-competitive output markets **(PR)**

### ~~-Environmental pollution~~

~~○ Pollution control: Targets & Instruments~~

### -International environmental problems

### -Cost-benefit analysis **(P)**

Intertemporal welfare economics

Project appraisal

Cost-benefit analysis and the environment

### -Environmental valuation **(PR)**

### -Economics of carbon capture, utilization, and storage **(L)**

### -Electricity markets and (future) environmental challenges **(CF)**

## **COURSE MATERIAL**

(L) Lecture notes

(P) Perman, Roger, et al.: Natural resource and environmental economics. Pearson Education, 2011.

(PR) Phaneuf, D. J and Requate, T: A Course in Environmental Economics: Theory, Policy, and Practice. Cambridge University Press 2016.

(CF) Creti, A., & Fontini, F. (2019). Economics of electricity. Cambridge University Press

~~(K) Kolstad, C. (2011). Intermediate environmental economics: International edition. OUP Catalogue.~~

~~(AH) Aghion, P., & Howitt, P. W. (2008). The economics of growth. MIT press.~~

## Reading assignments:

Every week, you will be assigned reading assignments. I am going to use **Perusall** to give you the reading assignments. This platform will allow you to interact and discuss issues that we will be covering in our lectures. You will be graded according to how well you will perform your reading assignment @Perusall.

@Perusall, your grades are based on your comments on the text (called, annotations), the interactions between other students (e.g., answering their questions, comments etc.), your reading progress, questions etc. For example, if you make a good comment on the text, you will be graded accordingly. If you make a comment in the form of “yes” or “no” and similar, you will not be graded. You will have a better overview of how things work once you start using Perusall.

### \* Perusall:

1. Enroll to our course on <https://perusall.com/> (no need to pay anything). To do this, create a Perusall account and enter your our course code DURMAZ-Y6FUX upon registration.
2. The scores of your reading assignments will appear in the Gradebook in our course page in Perusall.
3. Get used to Perusall as quick as possible. Most students unnecessarily get low scores in the initial assignments. Therefore, read, annotate, make good comments, ask good questions, help your friends, answer their questions, and so on. You will get used to Perusall in a very short time if you try hard in the beginning.

## Grading:

One mid-term, Perusall grades and assignments will constitute 60 percent of your overall grade, while 40 percent will be due to the final exam, adding up to 100 percent.