

### Intitulé du cours

Course title – Intitulé du cours	Climate economics
Level / Semester – Niveau /semestre	L3-S2
School – Composante	Ecole d'Economie de Toulouse
Teacher – Enseignant responsable	Christian Gollier
Lecture Hours – Volume Horaire CM	30
TA Hours – Volume horaire TD	0
TP Hours – Volume horaire TP	0
Course Language – Langue du cours	English

### Teaching staff contacts :

Christian Gollier, christian.gollier@tse-fr.eu

### Course Objectives :

This course is aimed at providing a rigorous economic analysis of climate change. It will use tools from various subfields, such as public economics, social choice theory, decision theory under uncertainty, asset pricing theory, and behavioral economics. We will evaluate different climate policies implemented around the world, with a special focus on France (carbon tax, feed in tariff, subsidies, convention citoyenne, bans, norms,...) and Europe (Green Deal, market for permits, carbon border adjustment mechanism,...). We will also examine the dynamics of the COPs in international negotiations. Finally, we will discuss the role of climate activists, corporate climate responsibilities, green finance and the like. I will promote the notion of a carbon value growing over time, and I will determine its level.

Keywords: Carbon pricing, market for permits, energy transition, Paris Agreement, nuclear electricity, renewable energy, free riding problem, environmental externality, green finance, CSR, green deal.

### Prerequisites :

Tout cours d'introduction à la microéconomie standard

### Practical information about the sessions :

The interactions between the teacher and the participants of this course will be promoted.

### Grading system – Modalités d'évaluation :

An oral exam will be organized at the end of the semester.

### **Bibliography/references – Bibliographie/références :**

Gollier, C., (2012), Pricing the planet's future: The economics of discounting in an uncertain world, Princeton University Press, October 2012.

Gollier, C., (2019), *Le climat après la fin du mois*, PUF, Paris.

Gollier, C., (2022), *Entre fin du mois et fin du monde: Economie de nos responsabilités envers l'humanité*, Fayard.

Twitter : @CGollier

### **Session planning**

#### **Week 1 : Climate sciences**

History of our climate, history of past emissions, the Hockey Cross, history of the climate economics, IPCC, UNFCCC, COP, Paris Agreement.

#### **Week 2 : Public economic approach to climate economics**

Big picture : Blood, sweat and tears  
Externality, free-riding problem, Pigou, Coase.

#### **Week 3 : Carbon tax and markets for permits**

EU-ETS and its history  
Carbon tax in France and abroad  
Carbon leakage and the carbon border adjustment mechanism.

#### **Week 4 : Cost/benefit analysis of climate actions**

Example 1 : Reducing speed on highways and roads, solar electricity, natural gas  
The valuation question in economics : life, health, natural capital.  
Cost per ton of CO<sub>2</sub> saved.

#### **Week 5 : Political economy of climate change**

The problem of inequalities  
The problem of unrealistic beliefs (utopia of a happy transition)  
The problem of international negotiations.

### **Week 6 : Economics of our responsibilities towards future generations**

Welfare economics : comparing immediate sacrifices and distant benefits

Individual and collective preferences : inequality aversion

Role of interest rates and the cost of capital

### **Weeks 7 and 8 : The déterminants of discounting**

Ramsey rule and the risk-free rate puzzle

Decision theory and asset pricing theory

Shadow price associated to the 2°C target

### **Week 9 : CSR and climate finance**

What role for climate activists: consumers, investors, banks, insurers

Internal carbon price

### **Week 10 : TBC**