

McGill University
Department of Economics
ECON 625- Economics of Natural Resources
Winter 2023
Th: 1:05-3:55

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Office Hours: TBA or by appointment.

Objectives: We will characterize (i) the optimal management of natural resources and the associated rules in different contexts, (ii) natural resources market outcome and their (in)efficiencies, and (iii) policy instruments to correct inefficiencies. We will consider different scenarios of property rights and examine problems related to market power and externalities. Applications include clean air management, extraction of nonrenewable resources, harvesting of renewable resources, and water management.

Suggested Textbook References:

“A course in environmental economics: theory, policy, and practice” by Phaneuf and Requate (2017)
HC79 E5 P5125 2017

“Differential Games in Economics and Management” by Dockner, Jorgensen, Long and Sorger (2000)
HB144 D53 2000

“Natural Resource Economics” by Conrad and Rondeau (2020) HC59.15 C655 2020

“Microeconomic Theory” by Mas-Colell, Whinston and Green (1995) MWG, HB172 M6247 1995

“Optimal Control Theory and Static Optimization in Economics” by Daniel Léonard and Ngo Van Long (1992) LL HB143.7 L46 1992

Other references

“A Survey of Dynamic Games in Economics” by Ngo Van Long (2010) Ebook

“Games and Dynamic Games” by Haurie, Krawczyk and Zaccour (2012)

“Oligopoly, the environment and natural resources” by Lambertini (2013)

“Climate policy and nonrenewable resources: the green paradox and beyond”, by Pittel, Van der Ploeg, Withagen (2014): available in ebook format

A reading list with relevant papers will also be posted on MyCourses

Course Evaluation:

Participation 10% Presentations 15%
1 midterm 25% 1 final 50%

Tentative outline

1. Externalities
2. Renewable resources and environmental systems
3. Optimal management of natural resources (deterministic and stochastic cases)
4. Market outcomes under market power and externalities

Tentative list of specific topics to be covered

Social norms and resource management
Regulation under imperfect information
Taxation in resource games
Coalition games in resource markets

Required official statements:

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