

McGill University
Department of Economics
ECON 452- Advanced Economic Theory
Fall 2021
T-Th: 10:05-11:25

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Office Hours: T 2:30-3:30 or by appointment.

Objectives: We will cover different topics related to economic theory and climate change and economic theory and the management of resources in general. We first cover an introduction to social choice and welfare, then elements of public good games and economics of externalities. We then cover necessary technical tools to handle the case of pollutants with long lasting effects (stock pollutants) and resource regeneration. The applications will include (depending on time) (i) renewable and nonrenewable resource extraction under different market structures (ii) implications of environmental regulation (iii) transboundary pollution games and (iv) international environmental agreements.

Textbook References:

It is not necessary to purchase any of the textbooks.

“Fair Division and Collective Welfare” by H. Moulin (2003) HB846 M68 2003

“Microeconomics of Market Failures” by B. Salanié (2000) ebook

“Advanced Microeconomic Theory” 3rd edition, by Jehle and Reny (2011) HB172 J44 2011; second edition available as ebook

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

“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

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

Other related 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) HD2757.3 L36 2013

Other references: A detailed list of papers will be provided in MyCourses.

Course Evaluation:

Presentations 15%

2 midterm exams 20% each (tentative dates: Oct 7th and Nov 16th)

1 final exam (cumulative) 45%

If you miss a midterm its weight will be added to final's weight. The exams will be online.

Extraordinary Circumstances Statement

In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.

Required official statements:

- McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see www.mcgill.ca/integrity for further information).

- According to Senate regulations, instructors are not permitted to make special arrangements for final exams. Please consult the calendar, section 4.7.2.1, General University Information and Regulations, at www.mcgill.ca.

- In accord with McGill University's Charter of Students' Rights, students in this course have the right to submit in English or in French any written work that is to be graded.

Tentative outline

1. Introduction to social choice
2. Externalities and public goods
3. Renewable resources and environmental systems
4. Optimal management of environmental and other natural resources
5. Dynamic games and externalities

Tentative list of specific topics to be covered

Social norms and resource management
Some mechanisms for public good games
Taxation in the case of a stock externality
Transboundary pollution game
Pollution management and federalism
Environmental regulation and information
International Environmental Agreements (IEAs)