האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

Game theory with applications in environmental economics - 73509

Last update 27-02-2025

HU Credits: *3*

Degree/Cycle: *2nd degree (Master)*

Responsible Department: *Environmental Economics & Management*

Academic year: *0*

Semester: *2nd Semester*

Teaching Languages: *English*

Campus: *Rehovot*

Course/Module Coordinator: *Yizhaq Minchuk*

Coordinator Email: *yizhaq.minchuk@mail.huji.ac.il*

Coordinator Office Hours: *Tuesday 13:00-14:00*

Teaching Staff:
Dr. Yizhak Minchuk

Course/Module description:
Game theory studies the strategic interactions among players. It provides new tools and insights into understanding and explaining the socio-economic phenomenon. Game theory has also been widely applied to other subjects such as political economy, sociology, engineering, law, and sports. This course introduces basic concepts, analytical tools, and modeling techniques in applied game theory in environmental economics.

Course/Module aims:
Knowing the basic concepts and common models of game theory, acquiring scientific tools for analyzing conflict situations
or cooperation in cases where several parties are involved, each of which may have many different interests. Understanding
situations that involve conflict and/or cooperation between more than one party with an emphasis on the application in the world of an environmental economy.

Learning outcomes - On successful completion of this module, students should be able to:
Upon successful completion of the course, students can:
Explain the basic principles of game theory and their application in analyzing different models.
Apply the principles of game theory to identify the strategies available to them and their opponents.
Identify the results to achieve and determine an optimal strategy.

Attendance requirements(%):
100

Teaching arrangement and method of instruction: Lecture + exercise

Course/Module Content:
Introduction to game theory. Static games of complete information- discrete strategies. Applications in farmer competitions. Static games of complete information- continuous strategies. A game of emissions.

Dynamic games of complete information-discrete and continuous strategies. Application to the organic food industry competition.
Dynamic games of incomplete information. Application to the climate policy.
Bargaining. Application to the water resources conflicts.
Auctions and R&D Contests. Cooperative Games, Regional

Required Reading:
None

Additional Reading Material:
Game Theory (in Hebrew), Shmuel Zamir, Michael Maschler, Eilon Solan, Magness Press
Game Theory 20216 (in Hebrew), Robert J. Aumann, Shmuel Zamir, Yair Tauman, The Open university of Israel.

Grading Scheme:
Written / Oral / Practical Exam 90 %
Essay / Project / Final Assignment / Home Exam / Referat 10 %

Additional information:
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