FIN-620 **Game Theory**

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Cursus	Sem.	Type
Finance		Obl.

Language of teaching	English
Credits	3
Session	
Exam	Written
Workload	90h
Hours	**28**
Courses	28
Number of positions	

Summary

The course provides an introduction to non-cooperative game theory for PhD and advanced graduate students. It contains an analysis of static and dynamic games wìth special emphasis on the role of information.

Content

1. Static Games of Complete Information
a. Course overview
b. Strategic-Form Games
c. Iterated Strict Dominance
d. Pure-Strategy Nash Equilibrium
e. Mixed-Strategy Nash Equilibrium
f. Correlated Equilibrium
2. Dynamic Games of Complete Information
a. Extensive Form Games
b. Subgame Perfect Nash Equilibria
c. Repeated Games and Folk Theorems
d. Bargaining à la Rubinstein-Stahl
3. Static Games of Incomplete Information
a. Bayesian Equilibrium
b. Public good provision
c. War of Attrition
d. Purification and Mixed Strategies
e. Market for Lemons
f. No trade theorems
4. Auctions
a. Orders of Stochastic Dominance
b. First Price Auctions
c. Dutch Auctions
d. Second Price Auctions
e. English Auctions
f. Revenue Equivalence
g. Common Values
h. Share Auctions
5. Global Games
a. Global games vs Bayesian Games
b. Currency Attacks
c. Coordination Likelihood
6. Mechanism Design
a. Definition of Mechanism
b. Revelation Principle
c. Optimal Mechanisms
d. Vickrey-Clarke Groves Mechanisms
e. Budget Balance
7. Dynamic Games of Incomplete Information

a. Signalling Games
b. Perfect Bayesian Equilibrium
c. Reputation
d. Pooling, Separating and Semi-Separating Equilibria
e. Spence's Education Model
f. Equilibrium Refinements
8. Moral Hazard
a. Linear Contracts
b. General Contracts
c. Dynamic Moral Hazard

Keywords

Game Theory
Contract Theory

Learning Prerequisites

Required courses

Bachelor-level Calculus and Probability Theory

Recommended courses

Intermediate-level Microeconomics

Learning Outcomes

By the end of the course, the student must be able to:

- Define alternative notions of Equilibria
- Derive game equilibria and select among them
- Design games and incentive schemes to induce desired targets

Resources

Bibliography

Fundenberg, Drew and Jean Tirole, 1991, Game Theory, 7th Edition, MIT Press ISBN-13: 978-0262061414
Bolton, Patrick and Mathias Dewatripont, 2004, Contract Theory, MIT Press, ISBN-13: 978-0262025768

Ressources en bibliothèque

- Game Theory / Fundenberg
- Contract Theory / Bolton