Algorithmic games

ECTS : 3

Volume horaire : 15

Description du contenu de l'enseignement :

The course provides a rigorous introduction to game theory. It begins with the foundations of rational decision making, introducing the rational choice paradigm that underpins much of economic and strategic reasoning. It then develops the core elements of static games of complete information, including dominant and dominated strategies, common knowledge of rationality, and Nash equilibrium, with particular attention to both pure and mixed strategies. The final part of the course extends the analysis to dynamic games of complete information, covering extensive-form representations, sequential rationality, and subgame-perfect equilibrium. Applications include multistage and repeated interactions, bargaining, and strategic behavior over time, thereby providing a solid conceptual framework for the analysis of strategic interaction in computational and economic settings.

Compétence à acquérir :

Upon completion of the course, students will have acquired a solid understanding of the fundamental concepts and models of game theory, including Nash equilibrium and subgame-perfect equilibrium. They will be able to analyze static and dynamic strategic interactions and apply formal strategic reasoning to problems arising in computational and economic contexts.

Mode de contrôle des connaissances :

- Written Examination

Bibliographie, lectures recommandées :

- Steven Tadelis, Game Theory - An Introduction, Princeton University Press, 2013.
- Michael Maschler, Eilon Solan, Shmuel Zamir, Game Theory, Cambridge University Press, 2013.

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