

Game theory

Infos pratiques

- > ECTS : 4.5
- > Nombre d'heures : 40.0
- > Langue(s) d'enseignement : Anglais
- > Niveau d'étude : BAC +4
- > Période de l'année : Enseignement septième semestre
- > Méthodes d'enseignement : En présence
- > Forme d'enseignement : Cours magistral et Travaux dirigés
- > Ouvert aux étudiants en échange : Oui
- > Campus : Campus de Nanterre
- > Composante : Sciences économiques, gestion, mathématiques et informatique
- > Code ELP : 4E7EDGTI
- > En savoir plus : <https://coursenligne.parisnanterre.fr/>

Présentation

Game theory analyzes situations characterized by strategic interdependency (i.e. multiple agents have to make a decision and situation of an agent depends of choices made by other agents with every agents being aware aware of that).

This course provides a general presentation of the main concepts in this fields. It consists of two parts. The first part elaborates on the concepts of strategy, information and equilibrium concepts used in Game Theory (especially equilibrium in dominant strategies, Nash equilibrium in pure and mixed strategies and sequential and repeated games).

The second part consists in a presentation of equilibrium concepts in the context of incomplete information (especially Nash Bayesian and Perfect Nash Bayesian equilibria) and provides a short introduction to cooperative game theory and bargaining.

Objectifs

At the end of this course, you should be able to...

1. Know the main frameworks and concepts of Game theory ;
2. In the case of a real-world economic problem, identify which framework best fits the problem ;
3. Using an appropriate framework, compute and discuss the outcome arising in this setting.

Évaluation

Session 1 :

- Formule standard : Midterm and final exams, both written exams

- Formule dérogatoire :

Session 2 : written exam

Pré-requis nécessaires

Microeconomics (undergraduate courses including consumer theory) ; calculus (single-variable calculus).

Compétences visées

Apply game theory to real-life economic situations.

Bibliographie

- Binmore B. (1999), Jeux et théorie des jeux, De Boeck.
- Fudenberg D. et Tirole J (1991), Game Theory, MIT Press
- Maschler M., E. Solan & S. Zamir (2013), Game Theory. Cambridge University Press.
- Bien F., Lanzi T. & J. Mathis (2019), Theorie des jeux et des contrats, Pearson Education

Ressources pédagogiques

Available from the « Cours en Ligne » platform.

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