becge1233

2023

Game theory

5.00 credits	30.0 h + 15.0 h	Q1

Teacher(s)	Mauleon Ana ;
Language :	French
Place of the course	Bruxelles Saint-Louis
Prerequisites	*The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.*
Learning outcomes	**At the end of this learning unit, the student is able to :** Game Theory aims to help us understand situations in which decision-makers interact. A game is being played whenever people interact with each other. When you make a bid at an auction, you are playing a game with the other bidders. When a supermarket manager decides the price at which she will try to sell cans of beans, she is playing a game with her customers and with the managers of rival supermarkets. When a firm and a union negotiate next year's wage contract, they are playing a game. The prosecuting and defending attorneys are playing a game when each decides what arguments to put before the jury. The objective of this course is to present the main ideas of game theory and to show how they can be used to understand economic, social, and political phenomena. By the end of the course students should understand the explained solution concepts of game theory and should be able to apply them to the different economic, social or political situations.
Evaluation methods	A written examination made up of problems similar to those seen in problem sessions as well as questions relating to course material will be used to determine each student's course grade.
Teaching methods	The course objectives are achieved via weekly lectures in which the professor presents the different solution concepts and the corresponding applications. A teaching assistant will help the students in the resolution of the different problems.
Content	The first part of the course studies the games with perfect information and the different solution concepts: Nash equilibrium, subgame perfect equilibrium. Each solution concept will be explained by means of a wide variety of illustrations: Bertrand's model of oligopoly, Cournot's model of oligopoly, Stackelberg's model of duopoly, auctions, electoral competition, exit from a declining industry, voting, matching, etc. The second part of the course is dedicated to some variants and extensions: repeated games and Bayesian games. Course outline: 1. Introduction (Chapter 1) Part I: Games with Perfect Information I 2. Nash Equilibrium: Theory (Chapter 2) 3. Nash Equilibrium: Illustrations (Chapter 3) 4. Mixed Strategy Equilibrium (Chapter 4) 5. Extensive Games with Perfect Information: Theory (Chapter 5) Part II: Variants and Extensions 6. Repeated Games: The Prisoner's Dilemma (Chapter 14) 7. Bayesian Games (Chapter 9)
Bibliography	Un syllabus, reprenant un plan détaillé du cours ainsi que les principales définitions, résultats et illustrations, est proposé pour compléter le cours magistral. Sont également disponibles les transparents du cours. An introduction to game theory, Martin J. Osborne, Oxford University Press 2004, ISBN 0-19-512896-6.
Faculty or entity in charge	ESPB

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Economics and Management	ECGB1BA	5	BECGE1231	🔍
Bachelor in Economics and Management (French-English)	ECAB1BA	5	BECGE1231	🔍
Bachelor in Economics and Management (French-Dutch-English)	ECTB1BA	5	BECGE1231	🔍
Bachelor : Business Engineering	INGB1BA	5	BINGE1232	🔍
Bachelor : Business Engineering (French-English)	INAB1BA	5	BINGE1232	🔍