Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
ECON426	Game theory	8	3	0	0	3	6

Prerequisites	
Admission Requirements	

Language of Instruction	French
Course Type	Elective
Course Level	Bachelor Degree
Objective	This course aims to provide basic knowledge and familiarity with the concepts and methods in game theory, which is of importance in natural and social sciences. Another objective is to enable the students to implement game theoretic reasoning to economic and social issues.
Content	This course offers an overview of the principal solution concepts and applications of game theory. Game theory is widely used in social sciences to analyse strategic interactions in a variety of contexts. The actions taken by others, competitors, buyers, suppliers, regulators and such, affect companies' market and non-market opportunities. When making decisions companies thus need to anticipate the actions taken by others. Game theory is a methodological tool best suited at analysing such interactions. The course consists of two parts. First, it introduces the principal solution concepts used in game theoretical models (dominance, Nash equilibrium concept, sub-game perfection and sequential equilibria), then it studies applications of game theory in a number of areas, such as bargaining, signaling, spatial models.
References	A. Dixit and B. Nalebuff. Thinking Strategically, Norton 1991 J. Watson. Strategy: An Introduction to Game Theory, Norton 2002 P.K. Dutta. Strategies and Games: Theory And Practice, MIT 1999 G. Demange et J.-P. Ponsard Théorie des Jeux et Analyse Economique, 1994 Bierman and Fernandez, Game Theory with Economic Applications, Second Edition, Addison Wesley (1998). Fudenberg and Tirole, Game Theory, MIT Press (1991). Gibbons, Game Theory for Applied Economists, Princeton University Press (1992). Krishna, Auction Theory, Academic Press (2002).

Theory Topics

Week	Weekly Contents
1	Introduction and examples
2	Static games under perfect information-Representation by normal form
3	Dominant strategy equilibrium and Rationalization
4	Variable sum games and pure strategy Nash equilibrium
5	Nash equilibrium applications
6	Mixed strategy Nash equilibrium-Applications
7	Static games under imperfect information-Asymmetric information
8	Extensive form games-Game tree
9	Extensive form games under perfect and complete information-Backward induction
10	Credibility-Commitment
11	Extensive form games under complete and imperfect information-Subgame perfect equilibrium
12	Applications
13	Signalling games
14	Signalling games and applications