


**Microeconomics V Imperfect Markets and Strategic Interactions**

**Semester: 5, Licence**

**Field of study: Economics**

**Teaching staff: Philippe Solal**

**Class teachers: St'ephane Gonzalez and Philippe Solal**

**Organization of lectures: 3-hour sessions.**

**TD organization: 2-hour sessions.**

**Prerequisites in Economics: none.**

**Mathematics prerequisites: basic knowledge of Relational Algebra, Set Theory, Analysis, Linear Algebra, Probability.**

**Assessment: two 2-hour papers, one of which covers the whole course.**

**Course content:**

This is an introduction to the theory of non-cooperative games, the main instrument for modeling phenomena where perfect competition is lacking and strategic behavior can be deployed. The course examines the following points:

1. extensive form of a game;
2. the concept of strategy;
3. the strategic form of a game;
4. dominant strategies, dominated strategies and the procedure for eliminating dominated strategies;
5. definition and properties of Nash equilibrium;
6. mixed strategies, dominance relationships and the existence of Nash equilibrium;
7. Bayesian games and Bayesian Nash equilibrium;
8. games with perfect information and perfect Nash equilibrium for its subgames;
9. extension to games with imperfect information;
10. introduction to repeated games (depending on the time available).

**Bibliography/References:**

Sylvain Béal, Yannick Gabuthy, *Théorie des jeux coopératifs et non coopératifs*, De Boeck, 2018.

Robert Gibbons, *Game Theory for Applied Economics*, Princeton University Press, 1992.

Andreu Mas-Colell, Michael Whinston, Jerry Green, *Microeconomic Theory*, Oxford University Press, 1995.

Hans Peters, *Game Theory : a Multileveled Approach*, Springer, 2008.

Pour aller plus loin :

Vianney Dequiedt, Jacques Durieu, Philippe Solal, *Théorie des jeux et applications*, Economica, 2011.

Fernando Vega-Redondo, *Economics and the Theory of Games*, Cambridge University Press, 2010.

Julio González-Díaz, Ignacio García-Jurado, M. Gloria Fiestras-Janeiro, *An Introductory Course on Mathematical Game Theory*, AMS, 2010.