Game Theory

Course title – Intitulé du cours	Game Theory
Level / Semester – Niveau /semestre	Master 2, ETE
School – Composante	Ecole d'Economie de Toulouse
Teacher – Enseignant responsable	Anna Sanktjohanser, Sara Shahanaghi
Other teacher(s) – Autre(s) enseignant(s)	
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Lecture Hours – Volume Horaire CM	30
TA Hours – Volume horaire TD	15
TP Hours – Volume horaire TP	
Course Language – Langue du cours	English
TA and/or TP Language – Langue des TD et/ou TP	English

Teaching staff contacts – Coordonnées de l'équipe pédagogique :

- Anna Sanktjohanser: office T 685, email anna.sanktjohanser@gmail.com
- Sara Shahanaghi : office T.590, email sara.shahanaghi@tse-fr.eu
- Teaching assistant: Javier González Morín

Course Objectives – Objectifs du cours :

Learning how to deal with strategic interactions.

Fundamentals of Game Theory, with a formal presentation.

Prerequisites – Pré requis :

Nothing compulsory. Some knowledge of game theory, basic mathematical analysis and probability will help.

Practical information about the sessions – Modalités pratiques de gestion du cours :

Laptops/tablets are allowed if they are used for taking notes. Students' active participation is expected. Unjustified late arrival/absence may be penalized.

Grading system – Modalités d'évaluation :

There will be a midterm exam, final exam, and two homework assignments. The final grade will be calculated as follows:

- Homework assignments (2): 10% each, for a total of 20%
- Midterm Exam: 30%
- Final Exam: 50%

Bibliography/references – Bibliographie/références :

- **Lecture notes will be posted at the beginning of each new topic.**
- A Course in Game Theory: M.J. Osborne and A. Rubinstein. MIT Press 1994.
- Game Theory: Analysis of Conflict, R.B. Myerson. Harvard University Press, 1991.
- Game Theory, D. Fudenberg and J.Tirole. MIT Press, 1991.
- Game Theory for Applied Economists, Gibbons. Princeton University Press 1992.
- Repeated Games and Reputation. Mailath and Samuelson, Oxford U Press 2006.

Session planning – Planification des séances

I. Strategic games: dominant strategies, Nash equilibria, mixed strategies, elimination of strictly dominated strategies, rationalizability, value and optimal strategies of zero-sum games.
II. Extensive-form games: model, associated strategic form, perfect information games, behavior strategies, sequential rationality; subgame-perfect, Bayesian-perfect and sequential equilibria.
III. Bayesian games and games with incomplete information.
IV. Correlated equilibrium
V. Repeated games, Folk theorem.
VI. Timing games, Markov perfect equilibrium

Distance learning – *Enseignement à distance :*

- *Distance learning can be provided when necessary by implementing: Interactive virtual classrooms*
- *Recorded lectures (videos)*
- *MCQ tests and other online exercises / assignments*
- *Remote (online) tutorials (classes)*
- *Chatrooms*