Simulation-Based Econometrics

Course title – Intitulé du cours	Simulation-Based Econometrics
Level / Semester – Niveau /semestre	MRes
School – Composante	Ecole d'Economie de Toulouse
Teacher – Enseignant responsable	Eric Gautier and Pascal Lavergne
Other teacher(s) – Autre(s) enseignant(s)	
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Other teacher(s) – Autre(s) enseignant(s)	
Lecture Hours – Volume Horaire CM	15
TA Hours – Volume horaire TD	
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:

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Course Objectives:

The goal of this class is to acquire knowledge of

- The simulation of random vectors, Monte-Carlo methods to approximate multiple integrals by simulations,
- The simulation-based techniques in econometrics (simulated likelihood, scores, and moments, indirect inference), their main theoretical properties and their implementation
- The more recent methods such as those involving Markov-Chains and/or a (possibly approximate) Bayesian framework
- The classical and more recent examples of their applications (limited dependent variables models, random coefficients, and dynamic setups)

Prerequisites :

Core courses of M2 ETE

Practical information about the sessions:

- We expect students to come to all the sessions and do the assignment asked for each subsequent session if any and participate
- Laptops or tablets allowed

Grading system :

The students are expected to present in front of their classmate a paper, book chapter, or empirical or simulation study of their own.

We value presentations which are personal and critical and take a step back, especially when presenting a paper.

Class participation will also be taken into account.

Bibliography/references :

- Simulation-Based Econometric Methods, C. Gouriéroux and A. Monfort, Oxford 2002
- Monte Carlo Statistical Methods, C. P. Robert and G. Casella, Springer, 2004
- Discrete Choice Methods with Simulations, K. Train, Cambridge, 2003

  Other references will be given during the lectures

Session planning :

To be determined