Econometrics 2

Course title – Intitulé du cours	Econometrics 2
Level / Semester – Niveau /semestre	Master 2, S2
School – Composante	Ecole d'Economie de Toulouse
Teacher – Enseignant responsable	Eric Gautier Koen Jochmans
Other teacher(s) – Autre(s) enseignant(s)	TBA
Other teacher(s) – Autre(s) enseignant(s)	
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Lecture Hours – Volume Horaire CM	36
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 :

Eric Gautier : eric.gautier@tse-fr.eu, T532

Koen Jochmans : koen.jochmans@tse-fr.eu, T528

Course Objectives – Objectifs du cours :

The aim of the first part of the course is to introduce the student to nonparametric methods with applications in treatment effects, panel data and network models.

1) Basic examples of nonparametric models in econometrics and elements of nonparametric identification
2) Estimation of a density: kernel and series, minimax lower bound and cross-validation
3) Estimation of a regression function: local polynomials, series, and (penalized) nonparametric least squares
4) Nonparametric approaches in treatment effects, e.g. heterogenous treatment effects and random coefficients, marginal treatment effects, conditional average treatment effects, regression discontinuity

The aim of the second part of the course is to introduce students to the analysis of panel data and network data.

1) Linear models for panel data
2) Fixed versus random-effect models
3) Dynamic specifications
4) Nonlinear models for panel data

5) Social interaction models and peer effects
6) The linear in means model
7) Network formation models

Prerequisites – Pré requis :

Econometrics 1 in Master ETE and Program Evaluation in Master 1 in Economics

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

Grading system – Modalités d'évaluation :

Bibliography/references – Bibliographie/références :

Econometric evaluation of social programs, Part 1, Chapter 70, JJ Heckman and E Vytlacil, Handbook of Econometrics, Volume 6, Part B, North-Holland, 2007

Introduction to nonparametric estimation, A Tsybakov, Springer, 2009

Panel data econometrics, M. Arellano, Oxford University Press, 2003.

Session planning – Planification des séances

First six weeks : Eric Gautier

Second six weeks : Koen Jochmans

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*

En cas de nécessité, un enseignement à distance sera assuré en mobilisant:

- *Classe en ligne interactive*
- *Vidéo enregistrée de la présentation du matériel pédagogique*
- *QCM et exercices en ligne*
- *TP/TD à distance*