

Econometrics 2

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| Course title – Intitulé du cours | Econometrics 2 |
| Level / Semester – Niveau /semestre | Master 2, S2 |
| School – Composante | Ecole d'Economie de Toulouse |
| Teacher – Enseignant responsable | Stéphane Gregoir Nour Meddahi Koen Jochmans |
| Other teacher(s) – Autre(s) enseignant(s) | Young Kim |
| Other teacher(s) – Autre(s) enseignant(s) | |
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| Other teacher(s) – Autre(s) enseignant(s) | |
| 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 :

Stéphane Gregoir : stephane.gregoir@tse-fr.eu
 Nour Meddahi : nour.meddahi@tse-fr.eu
 Koen Jochmans: koen.jochmans@tse-fr.eu

Young Kim: young.kim@tse-fr.eu

Course Objectives – Objectifs du cours :

Introduce the student to univariate and multivariate time series and panel data models.

Contents:

- 1) Strict stationarity, ergodicity and mixing
- 2) Linear modeling of time series I
- 3) Linear modeling of time series II
- 4) CLT and inference for time series
- 5) Kalman filter and estimation and inference for AR, MA and ARMA models
- 6) Estimation of dynamic models (M-estimator and Z-estimator (GMM))
- 7) Nonstationary time series I: unit root process, unit root test, cointegration
- 8) Nonstationary time series II: trends, seasonality, structural breaks
- 9) Vector autoregression (VAR): reduced form VAR and structural VAR
- 10) Vector error correction model (VECM)
- 11) Volatility models: ARCH and GARCH

12) Panel data models: fixed effect and random effect

Prerequisites – Pré requis :

Econometrics I

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

Grading system – Modalités d'évaluation : TBA

Bibliography/references – Bibliographie/références :

Session planning – Planification des séances

First Six weeks : Stephane Gregoir

Next four weeks : Nour Meddahi

Last two weeks: Koen Jochmans