Time Series

Course title - Intitulé du cours	Time Series
Level / Semester - Niveau /semestre	M1 / S2
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	Nour meddahi
Other teacher(s) - Autre(s) enseignant(s)	
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Other teacher(s) - Autre(s) enseignant(s)	
Lecture Hours - Volume Horaire CM	30
TA Hours - Volume horaire TD	
TP Hours - Volume horaire TP	
Course Language - Langue du cours	Anglais
TA and/or TP Language - Langue des TD et/ou TP	Anglais

Teaching staff contacts - Coordonnées de l'équipe pédagogique :

- Nour Meddahi, email: nour.meddahi@tse-fr.

- Office hours: by appointment by an e-mail

Course's Objectives - Objectifs du cours :

This course will cover the statistical and econometric techniques needed to conduct quantitative analysis and research in the estimation of time series models, forecasting of financial markets and economic times eries, and the modelling of asset price volatility. This knowledge will enable students to understand and interpret empirical findings in financial markets and economic time series. On completing this course, the students will understand the central technical issues in the statistical analysis of time series. They will be comfortable with the use of standard econometric software such as EVIEWS, R, STATA, and MATLAB to undertake their own research.

Prerequisites - Pré requis :

All students are expected to have taken an econometrics course and an introductory statistics course. For those of you who are already familiar with a statistical software package (EVIEWS, STATA, R, MATLAB, GAUSS, etc.), you are welcome to continue using it.

Grading system - Modalités d'évaluation :

- Midterm Exam: 40%

- Final Exam: 60%

Bibliography/references - Bibliographie/références :

- James D. Hamilton (1994) Time Series Analysis, Princeston.

- Tsay, Ruey S. (2010) Analysis of Financial Time Series, 3th ed., John Wiley & Sons

- Diebold, F.X. (2017), Forecasting in Economics, Business, Finance and Beyond, Department of Economics, University of Pennsylvania, http://www.ssc.upenn.edu/~fdiebold/Textbooks.html

Session planning - Planification des séances :

1. Stationary and Linear Time Series

2. ARMA Processes

3. Statistical Inference

4. Linear Regressions with Time Series

5. Forecasting

6. Volatility Models

7. Unit Root Processes

8. Forecasting with Many Predictors

9. Modeling Covid-19 Data

Distance learning – Enseignement à distance :

To Be Announced.