# TIME SERIES

| Course title - Intitulé du cours | Time Series |
|---|---|
| Level / Semester - Niveau /semestre | Master 1 |
| Teacher - Enseignant responsable | Nour Meddahi |
| Other teacher(s) - Autre(s) enseignant(s) | Sijia Pan |
| Other teacher(s) - Autre(s) enseignant(s) | |
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| Other teacher(s) - Autre(s) enseignant(s) | |
| Lecture Hours - Volume Horaire CM | 24 |
| TA Hours - Volume horaire TD | 9 |
| TP Hours - Volume horaire TP | |
| Course Language - Langue du cours | |
| TA and/or TP Language - Langue des TD et/ou TP | |

## Teaching staff contacts:
- Nour Meddahi, email: nour.meddahi@tse-fr.
- Office hours: by appointment by an e-mail

## Course's Objectives:
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:
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:
- Midterm Exam: 25%
- Two homeworks: 25%
- Final Exam: 50%

## Bibliography/references:
- 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:
1. Stationary and Linear Time Series
2. Statistical Inference

3. ARMA Processes
4. Volatility Models
5. Unit Root Processes

**<u>Distance learning:</u>**
Nothing.