

## Time series and economic forecasting

Course title - Intitulé du cours	Time series and economic forecasting
Level / Semester - Niveau /semestre	M2 / S1
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	CAZALS CATHERINE
Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
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Other teacher(s) - Autre(s) enseignant(s)	
Other teacher(s) - Autre(s) enseignant(s)	
Lecture Hours - Volume Horaire CM	30
TA Hours - Volume horaire TD	
TP Hours - Volume horaire TP	0
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 :**

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Preferred means of interaction: at the end of class or by appointment.

### **Course's Objectives - Objectifs du cours :**

This course gives a presentation of main econometric models used to obtain forecasts of economic time series and to describe dynamic relations between several time series.

More precisely, we first deal with the estimation of models for univariate time series, with ARMA models (autoregressive moving average). Then we consider models for multivariate time series, with VAR (vector autoregressive) models. In this type of models, we study the concept of causality between variables (which variables are useful to forecasting others) and we are interested in the description of the response of the variables to an impulse in a given variable with the mean of the "impulse response function" (for example, in a macroeconomic model of consumption - income, we can be interested by the question: how the consumption reacts in time to a shock in income at a given period?).

The objective of this course is to acquire the skills to identify the right econometric method to deal empirically with economic time series analysis, in order to obtain forecasts and understand dynamic relations between several variables.

### **Prerequisites - Pré requis :**

OLS and maximum likelihood estimation methods; standard statistical tests.

### **Grading system - Modalités d'évaluation :**

empirical project and/or final exam

**Bibliography/references - Bibliographie/références :**

J.D. Hamilton: « Time series analysis »

H. Lutkepohl: « New introduction to multiple time series analysis »