General Information	
Academic subject	Data Mining
Degree course	Economia ed Amministrazione delle Aziende
Curriculum	
ECTS credits	6 CFU/ECTS
Compulsory attendance	No
Language	Italian (English on demand)

Subject teacher	Name Surname	Mail address	SSD
	Massimo Bilancia	massimo.bilancia@uniba.it	SECS-S/01 (Statistica)

ECTS credits details			
Basic teaching activities			

Class schedule	
Period	First Semester
Year	First Year
Type of class	Frontal lectures and lab exercises

Time management	
Hours	150
In-class study hours	48
Out-of-class study hours	102

Academic calendar	
Class begins	September 13, 2021
Class ends	December 23, 2021

Syllabus	
Prerequisites/requirements	
Expected learning outcomes	• The objective of the course is to teach the basic elements of time series econometrics • The student will learn to estimate and apply in practice the models learned in the theoretical part of the course, through the use of the most commonly used data analysis tools, with specific applications to market forecasting and financial time series • The student will be able to decide on the most appropriate model to use for forecasting in the different intended application areas (economic and financial time series, sales analysis, volume and traffic time series forecasting, environmental and energy demand time series forecasting) • At the end of the course, the student will have acquired the necessary preparation to produce reports that include economic/financial forecasts • The course aims to provide the basic elements of time series econometrics in order to build on them with the possibility of taking more advanced courses

Contents	**Part I.** 1. Basic tools for forecasting 2. Simple regression 3. Multiple regression 4. Decomposition techniques 5.. Exponential smoothing – Basic tools 6. Exponential smoothing – Advanced tools 7. ARIMA models – AR and MA models 8. ARIMA models – Non-seasonal ARIMA models 9. ARIMA models – Model choice and forecasting 10. ARIMA models – Seasonal ARIMA models **Part II. Lab** Based on the R CRAN software, freely available at http://cran.r-project.org.
Course program	
Bibliography	M. Bilancia (2020) Dispense per il Corso di Metodi Statistici Multivariati – Versione 1.2 Febbraio 2020. Freely available under Creative Commons 4.0 CC BY-NC-ND Licence.
Notes	
Teaching methods	Frontal lectures and practical computing exercises
Assessment methods	PC skill test on a real dataset
Evaluation criteria	Grade in 30/30
Further information	