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| **Course title: FORECASTING MODELS** (Laurea Magistrale LM-77) | Language of the course:  Italian/ English |
| Lecturer: Coccìa Mimì |
| Total number of hours: 40  | ECTS credits: 6  |
| **Course period** | **1st semester** | **1 st term: \*\*****3 october** | **2 nd term: \*\*****21 december** |
| 2nd semester | 1 st term:  | 2 nd term: |
| **Course objectives and learning outcomes.**Course target is to be able to choose the best approch to explain and solve an interpretation and/or forecasting problem. Indeed there are many mathematical models for forecasting and choosing an appropriate model for a particular forecasting application depends on the “data”.Modelling methods evolution: interpretative and forecast models, indicators of model and forecasting goodness.**Topics of the module.**Simple and multiple regression, specification model, parameter estimation, adjustment indexes, multicollinearity problems.Stochastic processes, the autocovariance and autocorrelation functions, the partial autocorreletion functions, white noise processes, stationary time series models (ARMA: autoregressive and mooving average), non stationary time series models (ARIMA: autoregressive integrated mooving average models), seasonal time series models, forecasting, model identification, parameter estimation, diagnostic, checking and model selection,.ex-post analysis, transfer function model.**Prerequisites and learning activities.**The requirements are to get through a mathematical and statistics base course.**Teaching methods and language.**Lectures and exercises. Language: Italian / EnglishRef. text english books:- Brockwell P.J. and Davis R.D. (2002), Introduction to Time Series and Forecasting – II Edition-Springer.- Newbold P., Carlson W.L., Thorne B., Statistics for business and economics, Pearson/Prentice Hall, 2007, 6th ed.- W. Wey (1990), Time series analysis: univariate and multivariate method, II edition, Wey[- www.r-project.org](http://www.r-project.org/) URL for software R and documentation.Ref. text italian books:- Crivellari, F.,(2006) Analisi statistica dei dati con R – Apogeo.- Iacus S. M., Masarotto, G. (2007) Statistica con R - II -McGraw-Hill.- Vito Ricci (2006), Principali tecniche di regressione con R.- Vito Ricci (2004), Analisi delle serie storiche con R.- T. Di Fonzo e F. Lisi (2005), Serie storiche economiche: analisi statistiche e applicazioni –Carocci**Assessment methods** consist of a computer test about forecasting model by software R and/or ITSMW and its oral discussion (written and oral exam). |