Course 2	**Time Series**
Program	1. Basic concepts in time series. 1.1. Graphical representation of time series. 1.2. Types of series. 1.3. Descriptive tools for time series 2. Linear models for time series. 2.1. Linear models for stationary series: AR, MA and ARMA. 2.2. Non-stationary ARIMA and seasonal ARIMA models. 2.3. Box-Jenkins methodology and forecasting. 3. Time series clustering. 3.1 Time series clustering by features. 3.2 Model based time series clustering. 3.3 Time series clustering by dependence. Practical demonstration: R software.
Bibliography	- *A Course in Time Series Analysis*, edited by Peña, D., Tiao, G.C. and Tsay, R.S. John Wiley. 2001. - *Introductory Time Series with R*, by Cowpertwait, P.S.P. and Metcalfe, A.V. *Springer. 2009.* - *Introduction to Time Series and Forecasting,* by Brockwell, J.P. and Davis, R.A. Springer-Verlag. 1996.
Prerequisites	The attendant must have at least a basic level in the R language.