Forecasting Methods

Objectives:

To present models that allow for the correlation between observations taken sequentially over time; to learn how these models can be used to forecast a future response.

Contents:

4. Decomposition models

4.1. Nonseasonal models.

4.1.1. Moving average methods.

4.1.2. Exponential smoothing methods.

4.2. Seasonal models.

4.2.1. Moving average methods.

4.2.2. Holt-Winters method.

4.3. Predition intervals.

4.4. Use of Excel in the simulation of models.

Methods:

The theory is introduced providing examples and an explanation of how Excel can be used in problems solving. Homework exercises are suggested and some are solved in class.

Assessment:

The assessment is based on homeworks, a midterm test, and a final exam.

References:

Pedrosa, Antonio Carvalho, and Silvio M. Gama, "Introdução Computacional à Probabilidade e Estatística", Porto Editora (2007).

Montgomery, Douglas C., Cheryl L. Jennings, and Murat Kulahci, "Introduction to Time Series Analysis and Forecasting", John Wiley & Sons (2008).

Montgomery, Johnson, "Forecasting and Time Series Analysis", McGraw-Hill (1976).

Wei, William W.S., "Time Series Analysis: Univariate and Multivariate", Addison - Wesley Publishing Company (1990).

Notes:

The teacher: Professor Vera Lúcia Oliveira