

TIME SERIES

Learning Outcomes and Rubric

Learning outcomes: After completing this course, students should be able to:

1. understand the important features of a time plot;
2. understand a time series model with deterministic trend and seasonality and a stochastic component, and know the methods for eliminating trend and seasonality;
3. state the definitions of weak and strict stationarity, autocovariance and autocorrelation functions, for stationary time series models;
4. understand autoregressive (AR), moving average (MA) and ARMA models, and evaluate their properties;
5. understand the parameter estimation methods for ARMA models;
6. state the definition of an autoregressive integrated moving average model, evaluate its properties and understand the model-building steps;
7. interpret Minitab output as seen in practicals and exercise sheets.

Rubric: The following rubric will be used in the examination paper:

You should attempt all questions. Marks awarded are shown next to the questions. Calculators are permitted in this examination. The unauthorised use of material stored in pre-programmable memory constitutes an examination offence. Please state on your answer book the name and type of machine used. Statistical functions provided by the calculator may be used provided that you state clearly where you have used them.

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