Hypothesis Testing – Linear Models (62102)

Instructors: A.KOSTAKI – ST.PSARAKIS

Core Course, 1st semester, 5 ECTS units

Course level: Graduate (MSc)

Language: Greek

Course Description

In this course we present the confidence intervals, the statistical hypothesis theory, the pronciples of linear regression (simple and multivariate), the Analysis of Variance and their applications.

Prerequisites

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Applied Probability – Estimation.

Target Learning Outcomes

The students after attending successfully the course will be able, using the appropriate methodology, to construct confidence intervals that will contain the unknown parameters with the desirable probability and to perform hypothesis testing in various problems. They will be able to apply the basic tools of regression analysis, to various problems of economics and business administration. More specifically, they will be able to analyze, construct and estimate an appropriate model (simple or multivariate) and make inference on the results of the estimation procedure.

Recommended Bibliography

- Draper N, Smith H (1998) Applied Regression Analysis 3rd Edition Wiley

- Montgomery D (2012) Introduction to Linear regression Analysis, 5th Edition Wiley.

- Montgomery D. and Runger GC (2018) Applied Statistics and Probability for Engineers 7th Edition Wiley

Teaching and Learning Activities

One three-hour lecture per week and study exercises as homework (some to be submitted).

Assessment and Grading Methods

90% Written examination. 10% project/assignment based on simulated data applying the methodologies and techniques described during the course accompanied with short scientific report.