Statistical models for the tourism sector

Academic Year: (2019 / 2020) **Review date: 25/04/2019 14:56:03**

Department assigned to the subject: Statistics Department

Coordinating teacher: MOLINA FERRAGUT, ELISENDA

Type: Electives ECTS Credits : 6.0

Year : Semester :

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Introducción a la Estadística

OBJECTIVES

SPECIFIC SKILLS:
Students will acquire knowledge and skills necessary to:
1. Understand the basic concepts of multivariate analysis and its applications to the tourist sector.
2. Solve the problem of comparing two or more populations
3. Learn the basic concepts of cluster analysis and how to apply it at a basic level.
4. Learn the basic concepts for describing a Time Series.
5. Effective use of statistical software.

GENERAL SKILLS
Students will be able to:
1. Develop their ability to think analytically
2. Become familiar with a statistical software
3. Establish a framework to solve problems
4. Develop their interactive skills
5. Enhance their critical thinking
6. Improve their learning skills and communication

DESCRIPTION OF CONTENTS: PROGRAMME

0. Review of the Simple Linear Regression model.

1. Updating the Linear Regression model.
   1.1. Estimating the regression coefficients.
   1.2. Diagnosis. Potential problems.
   1.3. Collinearity, outliers and nonlinear relationships.
   1.4. Methods of variable selection.
   1.5. Qualitative predictors.

2. Hypothesis testing. Comparing two populations.
   2.1. Inference for the mean and the proportion.
   2.2. Inference for the population means and proportions.
   2.3. ANOVA

3. Cluster analysis.
   3.1. Motivation; Examples; Applications.
   3.2. Hierarchical agglomerative methods; Dendrogram.
   3.3. Choice of the number of clusters, assesing fit t and interpretation of clusters.

4. Descriptive analysis of time series.

LEARNING ACTIVITIES AND METHODOLOGY

Theory (3 ECTS): During theoretical sessions, the contents of the course will be introduced, explained and ilustrated with examples. Teaching materials will be provided on the Internet.

Practice (3 ECTS): During practical sessions, black-board exercises will be solved. Software-related activities will take place in the computer labs.

In the 15th week of the term, a group-review session for the final exam will be held.

ASSESSMENT SYSTEM

% end-of-term-examination/test:	60
% of continuous assessment (assigments, laboratory, practicals…):	40

The assessment will be made by weighting the continuous evaluation (60%) and the final exam (40%), no minimum grade in any of these two parts.

Continuous evaluation will be based on two midterms and one homework.

The students who get good grades in the continuous evaluation (more than 7 over 10 in total, with a minimum grade of 4 over 10 in each midterm and homework) do not need to take the final exam. In this case, the final assessment will coincide with that of the continuous evaluation.

BASIC BIBLIOGRAPHY

- Newbold, P. Statistics for business and economics, Prentice-Hall, 2012

ADDITIONAL BIBLIOGRAPHY

- Sheldon Ross Introductory Statistics, Elsevier Academic Press, 2005