27019 - Mathematical Statistics

Información del Plan Docente

Academic Year	2016/17
Academic center	100 - Facultad de Ciencias
Degree	453 - Degree in Mathematics
ECTS	7.5
Course	3
Period	Second semester
Subject Type	Compulsory
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

The approach will be participatory and based on different types of learning activities.

5.2.Learning activities

Lectures. Solving and discussion session problems. Computer laboratory sessions. Individual tutorial meetings. Group activities. Individual study.

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5.3.Program

1. Statistical data analysis. Revision of the one and two variable cases.

2. Basic concepts on Statistical Inference. Population and random samples. Statistics. Sampling from the Normal distribution. Order statistics. Convergence concepts and limit theorems.

3. Point estimation. Desirable properties of an estimator. Methods of finding and evaluating estimators. Large sample properties for máximum likelihood estimators. Interval estimation.

4. Hypothesis testing. The Neyman-Pearson approach. The duality of confidence intervals ad hypothesis tests. Likelihood ratio tests. Tests for Normality, goodness of fit and independence. Comparing two samples.

5.4.Planning and scheduling

The activities, classes, exams, etc. will be announced in the faculty webpage. The course will have an ADD page where the different materials and announces will be put down.

5.5.Bibliography and recomended resources

- Casella, George. Statistical inference / George Casella, Roger L. Berger . - [2nd. ed.] Pacific Grove, California : Wadsworth and Brooks/Cole Advanced Books and Software, cop. 2002
- Cristóbal Cristóbal, José Antonio. Lecciones de Inferencia estadística / José Antonio Cristóbal Cristóbal . - 1a ed. Zaragoza : Prensas Universitarias de Zaragoza, 2003
- Dudewicz, Edward J. Modern mathematical statistics / Edward J.Dudewicz, Satya N.Mishra New York : John Wiley & Sons, cop.1988
- Rohatgi, Vijay K. An introduction to probability theory and mathematical statistics / V.K. Rohatgi and E. Saleh. New York [etc.] : John Wiley & Sons, cop. 2011
- Garthwaite, Paul H.. Statistical inference / Paul Garthwaite, Ian Jolliffe and Byron Jones . Oxford : Oxford University Press, 2009
- Bickel, Peter J.; Doksum, Kjell A.. Mathematical statistics: basic ideas and selected topics. vol. 1. 2nd. ed. Pearson Prentice Hall. 2006
- Vélez Ibarrola, Ricardo. Principios de inferencia estadística / Ricardo Vélez Ibarrola, Alfonso García Pérez Madrid : UNED, 2002
- Rice, John A. Mathematical Statistics and Data Analysis/ J. A. Rice. Brooks/Cole 3rd edition 2007.