68706 - Advanced statistics

Información del Plan Docente

Academic Year	2017/18
Faculty / School	104 - Facultad de Medicina
Degree	459 - Master's in Public Health
ECTS	2.0
Year	1
Semester	Second semester
Subject Type	Optional
Module	---

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

4.1.Assessment tasks (description of tasks, marking system and assessment criteria)

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

The students enrolled in this course should have passed the courses Methodology in Public Health I and II.

The course has a fundamentally applied orientation with face-to-face sessions. This sessions consist of a brief review of theoretical concepts and the solving of a practical case. Cases are commented and the obtained results interpreted by means of statistical packages. Then each student solves a research problem that needs any of the statistical techniques discussed in class. The teacher will correct the problem and students discuss the doubts and difficulties that they have

encountered.

Tutorials can be in group or individual, depending on the students' desires, in which doubts are solved and unclear concepts may be explained.

Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials.

It is recommended to study the course bibliography.

5.2.Learning tasks

The course includes the following learning tasks:

- Theory and practice sessions
- Study and problem solving
- Individual study

5.3.Syllabus

The course will address the following topics:

- Topic 1. COR curves.
- Topic 2. Sample size estimation for different epidemiological study designs.
- Topic 3. Exploratory Factor Analysis.
- Topic 4. Survival analysis.
- Topic 5. Cox regression.

5.4.Course planning and calendar

Provisional course planning:

Topic	Date	Time	Professor
Topic 1. ROC Curves	Session 1	16:30-21	E. Rubio
Topic 2. Sample size estimation for different epidemiological study designs. Topic 3. Exploratory Factor Analysis.	Session 2	16:30-18:30 19-21	C. Feja T. Martínez
Topic 4. Survival analysis.	Session 3	16:30-18:30	J. Santabárbara

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Topic 5. Cox regression.		19-21	
Assignment submission	See generally Master's calendar		All teachers

5.5.Bibliography and recommended resources

- David G. Kleinbaum, Mitchel Klein (2010) Logistic Regression: A Self-Learning Text. Third edition. Ed Springer DOI 10.1007/978-1-4419-1742-3

- David G. Kleinbaum, Lawrence L Kupper, Azhar Nizan, Eli Rosenberg E. Applied regression analysis and other multivariable methods (3ª ed). Ed Nelson Education. California. 2013

- David W. Hosmer, Stanley Lemeshow (2000). Applied logistic regression. Second edition. Ed John Wiley and Sons.

- David G. Kleinbaum and Mitchel Klein (2012) Survival Analysis: A Self-Learning Text. Third edition. Ed Springer.

- David W. Hosmer, Stanley Lemeshow and Susan May (2011). Applied Survival Analysis: Regression Modelling of Time-to-Event Data. Second edition. Ed John Wiley and Sons.

- Javier Santabárbara Serrano, Encarnación Rubio Aranda, Cristina Feja Solana (2014). Análisis de Supervivencia aplicado con SPSS. Curvas de Supervivencia y Modelo de Regresión de Cox. Ed DIGICOPY. Universidad de Zaragoza (Facultad de Ciencias Económicas y Empresariales). Zaragoza, 2014.

- Javier Santabárbara, Raúl López, Encarnación Rubio, Elena Lobo, Guillermo Marcos (2015). Cálculo del tamaño de la muestra en estudios biomédicos. Ed Prensas de la Universidad de Zaragoza. Zaragoza, 2015.

- Miguel Ángel Martínez-González, Almudena Sánchez Villegas, Estefanía A.Toledo Atucha, Francisco Javier Faulín Fajardo. Bioestadística amigable. 3ª ed. Ed. Elsevier España S.L. 2014

- Pardo Merino A. y Ruiz Díaz M.A. (2002). SPSS 11. Guía para el análisis de datos Ed. Mc Graw Hill

- Rivas, MJ. y López, J. (2000) Análisis de Supervivencia. Cuadernos de Estadística. Editorial La Muralla.