

## Statistical crime analysis

Academic Year: ( 2024 / 2025 )

Review date: 20-03-2024

Department assigned to the subject: Statistics Department

Coordinating teacher: WIPER , MICHAEL PETER

Type: Compulsory ECTS Credits : 6.0

Year : 3 Semester : 1

## REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

None

## OBJECTIVES

- Know the basic rules of probability
- Manage the most important probability distributions
- Synthesize statistical information in tabular, numerical and graphical form
- Obtain the distribution in the sampling of estimators in normal populations, raise hypothesis contrasts and construct the corresponding confidence intervals
- To propose and validate the linear regression model as a model of relationship between variables
- To practice in the computer the construction of models, contrasts and confidence intervals
- Apply these procedures to the treatment of statistical problems in security management and criminology

## DESCRIPTION OF CONTENTS: PROGRAMME

Content leading to the acquisition of knowledge in:

- Introduction to probability and statistics: concept of probability and basic rules, distributions, descriptive statistics for one and several variables
- Introduction to statistical inference: confidence intervals and hypothesis contrasts for mean and variance;
- Comparisons of means between two populations
- Relations between variables: introduction to linear models, estimation of model parameters and inference about these parameters
- Applications to security management and criminology

## LEARNING ACTIVITIES AND METHODOLOGY

- Lecture classes for the presentation of fundamental concepts,
- Practical classes in computer labs,
- Tutorials in groups and individual

## ASSESSMENT SYSTEM

<b>% end-of-term-examination:</b>	40
<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	60
Exercises, intermediate tests, mini-project using statistical analysis of data, final exam	

## BASIC BIBLIOGRAPHY

- J.M. Gau Statistics for Criminology and Criminal Justice, SAGE Publications, 2015
- R.D. Bachman & R. Paternoster Statistics for Criminology and Criminal Justice, SAGE Publications, 2016

- R.D. Bachman & R. Paternoster Statistics for Criminology and Criminal Justice, SAGE Publications, 2016

#### ADDITIONAL BIBLIOGRAPHY

- D. Rowntree Statistics Without Tears, Penguin, 2018

#### BASIC ELECTRONIC RESOURCES

- M.P. Wiper . Teaching web page: <http://halweb.uc3m.es/esp/Personal/personas/mwiper/eng/docencia.html>