Universitat Autònoma de Barcelona

2018/2019

Quantitative Research Methods in Criminology

Code: 100450
ECTS Credits: 6

Degree	Type	Year	Semester
2500257 Criminology	OB	2	1

Contact

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Use of languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: No
Some groups entirely in Spanish: No

Other comments on languages

The language of the course will be Catalan, with the possibility of adapting it, were any international students inscribed in the course. The materials of the practice sessions will be in Catalan, Spanish and English.

Teachers

Juan Martin Galeano Reguera

Daniel Barrientos Sánchez

Irene Cruz Gomez

Prerequisites

• No previous training in statistics is required. However, knowledge in mathematics will help students to effectively learn the course contents.
• Students are advised to take the propaedeutic course in mathematics and statistics that the university offers: http://www.uab.cat/doc/Aprovacio-accions-propedeutiques-academic2018-2019-220518

Objectives and Contextualisation

Quantitative Research Methods is a course designed to introduce students to statistical data analysis as a tool for criminological research.

As one of its general objectives, the Degree in Criminology trains students in using criminological methods and techniques of analysis when studying data in situations of conflict, crime, and social control. To that end, the course objectives are:

1) Learning the basic statistical concepts of descriptive statistics.

2) Acquiring autonomy in the use of software for quantitative data analysis and its application in criminology.

3) Performing quantitative data analyses, both descriptive and inferential.

4) Identifying and knowing how to apply these concepts in criminological research projects.

This course is part of the degree's research methods itinerary. On the one hand, it is a continuation of the course Scientific research in criminology, and Criminological Data Sources, in the first year, in which the logic of the research process in social sciences and criminological data is presented. On the other hand, this course has continuity in Data Analysis, taught in the second semester, which delves into multivariate analysis.

Skills

- Ability to analyse and summarise.
- Accessing and interpreting sources of crime data.
- Applying the quantitative and qualitative data collection techniques in the criminological field.
- Designing a criminological research and identifying the appropriate methodological strategy to the proposed goals.
- Drawing up an academic text.
- Formulating research hypothesis in the criminological field.
- Using research methods in social sciences in order to diagnose criminality problems.
- Working autonomously.

Learning outcomes

1. Ability to analyse and summarise.
2. Applying the quantitative and qualitative data collection techniques in the criminological field.
3. Choosing the appropriate research methodology in criminological works.
4. Designing criminological research projects with well-drawn hypothesis.
5. Diagnosing a criminal process through the scientific method.
6. Drawing up an academic text.
7. Interpreting in a scientific way statistical data from the criminological field.
8. Working autonomously.

Content

PART I. DATA ANALYSIS SOFTWARE

1. GUI

2. Structure of the code

3. Visualize and transform data

4. Structure of a function

PART II. DESCRIPTIVE DATA ANALYSIS

Unit 1. Univariate descriptive statistics

1.1. Introduction to statistical data analysis in Criminology

1.2. Software for statistical data analysis

1.3. Frequencies

1.4. Summary measures of one variable

1.5. Data transformation

Unit 2. Bivariate descriptive statistics

2.1. Crosstabulations

2.2. Comparing means and variances: tables and graphs

2.3. Simple linear regression

PART III. BASICS OF INFERENTIAL STATISTICS

Unit 3. Statistical sampling

3.1. Population and sample. Types of sampling

3.2. Simple random sampling. Sample size and sampling error

Unit 4. Hypothesis testing

4.1. Analysis of variance

4.2. Chi-square test for crosstabulations

4.3. Tests for linear regression

Methodology

Before the beginning of the course, a detailed chronogram of the weekly activities will be published in the Virtual Campus.

Lectures (directed):

- Lectures on the concepts and theory behind statistical analysis procedures (classroom)

Practical sessions (supervised):

- Statistical exercises and resolution of problems using the analysis software (PC lab)

Evaluation sessions (supervised):

- Individual theoretical-practical tests solving problems using the statistical software (PC lab)

Tutoring:
All students can receive personal attention by the faculty at times to be arranged. Additionally, the teaching staff may establish mandatory tutoring sessions to monitor the course work.

Activities

Title	Hours	ECTS	Learning outcomes
Type: Directed			
Lectures	22.5	0.9	2, 5, 4, 7, 1
Type: Supervised			
Exam	0	0	2, 5, 4, 7, 1, 8
Workshops	22.5	0.9	2, 5, 4, 7, 1
Type: Autonomous			
Exam preparation	25	1	2, 5, 4, 7, 1, 8

Exercices and reading	50	2	2, 3, 7, 1, 8
Group paper	30	1.2	2, 5, 4, 7, 1

Evaluation

The evaluation of the course is organized around the following activities:

A) Weekly exercises (10%):

- Weekly practical sessions will include a series of exercisesto be submitted in the following days. The deadline is not flexible, and no exercise will be accepted outside the term, except for situations of force majeure.
- The exercises will not be directly corrected, but the solutions will be uploaded to the virtual campus with detailed explanations, to facilitate self-correction, and the solutions will be commented in class.
- The quality of the work developed in these exercises will be taken into account in limit situations, i.e., if the final grade is tenths to a pass, or to untie candidates for high honors.

B) Assessment and follow-up activities in the classroom (15%):

- Each session will conclude with a brief set of questions about the contents developed during the class or on reading materials defined for the session.
- This activity cannot be recovered incase of absence. The score for an unjustified absence will be equal to 0. If the absence is justified by force majeure, that activity will not be taken into account in the average.

C) Paper (30%):

- Quantitative data analysis paper, with a maximum extension of 1500 words. The guidelines for its development and the evaluation criteria will be posted at the beginning of the course.
- A mid-term presentation will be asked in order to follow up the work.
- The paper can be written in groups of a maximum of 3 people, either in Catalan, Spanish or English.
- Gross and recurring problems of format (including, but not limited to, spelling and defective bibliographic citation) will result in a fail.
- Candidates having failed the analysis paper can opt to a second submission. In such case the maximum grade is limited to 5 points.

D) Exam (45%):

- Theoretical-practical exam, combining questions about the main concepts of the syllabus, their application in the resolution of problems, and the use of statistical software.
- Candidates having failed the exam can opt to a second examination. In such case the maximum grade is limited to 5 points.

The course will be passed if the final grade reaches a minimum of 5 out of 10 and a minimum grade of 4 for each assessment item.

Conditions:

- In accordance with the Degree policy, 100% attendance is mandatory. Absences can be justified due to force majeure. Absence due to academic reasons will have to be accepted in advance by the faculty. A minimum of 80% attendance is necessary to opt to the final exam.
- Punctuality is required. Delays greater than 5 minutes and not justified by force majeure will count as an absence.

Fraudulent conducts:

- If any form of plagiarism is detected in any of the assessment activities, these will be rated as 0, with no option to re-evaluate.
- Indications of plagiarism in the weekly exercises, or the inability of students to justify the procedures followed to solve them, will result in a warning and a 0 grade. Any reiteration will result in a 0 grade on the whole course.

Evaluation activities

Title	Weighting	Hours	ECTS	Learning outcomes
Exam	45%	0	0	5, 4, 3, 7, 1, 8
Exercices	10%	0	0	2, 4, 3, 7, 1
Ongoing assesment	15%	0	0	7, 1, 8
Paper (groups)	30%	0	0	2, 5, 4, 3, 7, 6, 1, 8

Bibliography

Handbook

The following publication is the basic reference handbook for the course. Although it is not mandatory, its use is recommended.

López-Roldán, Pedro; Fachelli, Sandra. (2015). *Metodología de la investigación social cuantitativa*. Bellaterra (Cerdanyola del Vallès): Universitat Autònoma de Barcelona.

Available at: https://ddd.uab.cat/record/129382

Additional complementary materials will be made available in the course Moodle.

Other references

Bardina, Xavier; Farré, Mercè; López-Roldán, Pedro. (2005). *Estadística: un curs introductori per a estudiants de ciències socials i humanes. Volum 2: Descriptiva i exploratòria bivariant.* Bellaterra (Barcelona): Universitat Autònoma de Barcelona.

Cea D'ancona, Mª Ángeles. (1998) *Metodología cuantitativa. Estrategias y técnicas de investigación social*. Madrid: Síntesis.

Farré, Mercè. (2005). *Estadística: un curs introductori per a estudiants de ciències socials i humanes. Volum 1: Descriptiva i exploratòria univariant.* Bellaterra (Barcelona): Universitat Autònoma de Barcelona.

Fox, James A.; Levin, Jack; Forde, David R. (2009). *Elementary Statistics in Criminal Justice Research*. Boston: Pearson.

Maxfield, Michael G.; Babbie, Earl R. (2005). *Research Methods for Criminal Justice and Criminology*. Belmont, CA: Thomson Wadsworth.

Walker, Jeffery; Maddan, Sean. (2009). *Statistics in Criminology and Social Justice: Analysis and Interpretation* . Boston: Jonesand Bartlett Pubs.