UAB
Universitat Autònoma de Barcelona

2019/2020

Quantitative Methods and Statistics

Code: 104244
ECTS Credits: 6

Degree	Type	Year	Semester
2503710 Geography, Environmental Management and Spatial Planning	OB	2	1

Contact

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Teachers

Francesc Muñoz Pradas

Use of Languages

Principal working language: catalan (cat)

Some groups entirely in English: No

Some groups entirely in Catalan: Yes

Some groups entirely in Spanish: Yes

Prerequisites

There are no prerequisites

Objectives and Contextualisation

Quantitative Methods and Statistics is taught the Second Course of the Degree in Geography, Environment and Planning.

The objective is to introduce students to the use of statistical methods for the design and analysis of data related to Geography. The orientation is eminently practical applying the statistical procedures through the software MS Excel.

The specific objectives are:

1. To introduce students to the basic concepts of descriptive and inferential statistics

2. To decide what the appropriate statistical method is based on the data and the research objectives.

3. To apply basic and multivariate statistics tests

4. To argue the results obtained from the graphic representation, exploration and analysis of the information to describe and characterize territories.

Competences

- Apply methods and techniques of quantitative, qualitative and field work analysis in the interpretation of territorial and environmental processes.
- Combine distinct techniques and methods of representation and spatial analysis in elaborating materials for transmitting results.

- Explain and represent territorial processes using statistical techniques, and graphic, cartographic and geographical information representations.
- Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
- Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.

Learning Outcomes

1. Combine distinct techniques and methods of representation and spatial analysis in elaborating materials for transmitting results.
2. Interpret the statistical result of data analysis.
3. Make basic and instrumental use of statistical programs to introduce and identify survey data and for the transformation and analysis of those data.
4. Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
5. Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.
6. Understand the main sources of information and scientific documentation related to regional and environmental processes.
7. Use basic and multivariate statistical methods appropriately.

Content

Block 1. Data sources and variables in Geography

1.1 Data sources in Geography: typologies and characteristics

1.2 Data and types of variables

Block 2. Univariate statistics

2.1 Statistics of central tendency and dispersion

2.1 Transformations of variables

Block 3 Bivariate statistics

3.1 Relationship between variables: the preparation and analysis of contingency tables.

3.2 Relationship between variables: correlation and linear regression

Block 4. Quantitative methods

4.1 Measures of concentration and inequality

4.2 Time series

4.3 Composite index

Block 5. Introduction to statistical inference

5.1 Basic concepts in inference

5.2 Confidence intervals

5.3 Contrast hypothesis

Methodology

The course is structured from directed, supervised and autonomous activities where the student will learn to develop the contents of the subject with the teacher's face-to-face support at different levels.

- Guided activities: theoretical classes and face-to-face practices
- Supervised activities: face-to-face monitoring of practices
- Autonomous activities: study of the theoretical contents and complementary readings and completion of the practices.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Master classes and carrying out of directed practices in the computer lab	45	1.8	7, 1, 6, 2, 4, 3
Type: Supervised			
Completion of practices in the computer lab	22	0.88	7, 1, 6, 2, 4, 3
Tutorials	3	0.12	7, 1, 6, 2, 4, 3
Type: Autonomous			
Completion of the course practices	60	2.4	7, 1, 6, 2, 4, 3
Personal study, preparation tests	15	0.6	7, 1, 6, 2, 4, 3

Assessment

Activities subject to evaluation:

- An objective test of knowledge made through two written tests. Weighting factor: 50 percent of the final mark. Each test would represent 25 percent of the final mark.

- Individual practices on blocks 2, 3 and 4 of the course. Weighting factor: 40 percent of the final mark.

- A text commentary that addresses statistical aspects of gender and social minorities. Weighting factor: 10 percent of the final mark.

Evaluation criteria:

- Final mark of the subject will be the weighted average of all the activities submitted for evaluation.

- The final mark of the objective test will be the average of the two written tests.

- Students who have only completed 1/3 of the evaluable activities will be classified as "Not evaluable".

- The activities not delivered or performed on the indicated date will be classified as "Not Submitted".

- The plagiarism or copy of an exercise will have a 0. The repetition of a copy will have the consequence of suspending the subject.

Second chance eximanation

The second chance eximanation of the subject will be done through a written test. Students who have completed 2/3 of the evaluable activities of the course and have obtained a final mark of the subject less than 5 points can be presented to the second chance examination. The mark of second chance examination will replace all the notes of the continuous evaluation and can not be higher than 5.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Individual practices	40 percent	2	0.08	7, 1, 6, 2, 4, 3
Text comments on gender statistics and social minorities	10 percent	0.5	0.02	1, 2, 5, 4
Theoretical and practical test	50 percent	2.5	0.1	7, 1, 6, 2, 4, 3

Bibliography

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