

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

Contact

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Teaching groups languages

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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 general objective of the course is to provide students with the fundamental tools and knowledge of statistics so they can apply quantitative techniques in the design and analysis of data related to Geography. This content will thus facilitate the understanding of data specific to the geographical discipline as well as decision-making based on quantitative analysis, preparing students to face professional and academic challenges.

The specific objectives of the course are:

- To provide students with the fundamental tools for data management: methods for the collection, organization, analysis, and presentation of data related to Geography.
- To familiarize students with statistical terminology.
- To equip students with the skills to use computational tools for basic statistical analysis.
- To introduce the fundamental concepts of descriptive and inferential statistics.
- Regarding descriptive statistics, to train students in the use of measures of central tendency and dispersion applied to geographical data, as well as to introduce methods of representation.
- Regarding inferential statistics, to introduce the concepts of correlation and regression, and to provide tools to interpret and analyze the relationship between variables using linear regression methods.
- To train students to decide which statistical method is appropriate based on the data and the objectives of the research.
- To introduce statistical methods to solve spatial issues, such as indicators of segregation, location, and others specific to spatial statistics.

- To prepare students to understand, interpret, and argue the results of quantitative and statistical analysis.

Learning Outcomes

1. CM26 (Competence) Interpret the statistical results obtained in a study through data analysis in order to make judgements that include a reflection on relevant social, scientific or ethical issues.
2. KM40 (Knowledge) Introduce the main sources of scientific information and documentation related to territorial and environmental processes in a study.
3. SM34 (Skill) Correctly apply basic and multivariate statistical methods in a practical case.
4. SM35 (Skill) Use basic and instrumental statistical software for the input and identification of survey data, and for their transformation and statistical analysis.

Content

Block 1. Data sources, types of variables, and essential tools in Excel

Block 2. Univariate statistics

2.1 Measures of central tendency and dispersion

2.2 Variable transformations

Block 3. Bivariate statistics

3.1 Relationship between variables: correlation and linear regression

3.2 Relationship between variables: contingency tables

Block 4. Introduction to statistical inference

4.1 Basic concepts in inference

4.2 Confidence intervals

4.3 Hypothesis testing

4.4 Inference in contingency tables and regression

Block 5. Quantitative methods for the analysis of the spatial dimension

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Master classes and carrying out of directed practices in the computer lab	47	1.88	CM26, KM40, SM34, SM35
Type: Supervised			

Completion of practices in the computer lab	22	0.88	CM26, KM40, SM34, SM35
Tutorials	3	0.12	CM26
Type: Autonomous			
Completion of the course practices	60	2.4	CM26, SM34, SM35
Personal study, preparation tests	15	0.6	CM26, KM40, SM35

The course is structured around directed, supervised, and autonomous activities where students will be able to acquire the course content with the in-person support of the instructor at various levels.

- Managed activities: include theoretical sessions and the development of practical exercises, led by the instructor.
- Supervised activities: in-person supervision of practical sessions, where students will independently, but under supervision, develop various exercises.
- Autonomous activities: study of theoretical content and resolution of practical exercises.

According to the schedule, the instructor will reserve about 15 minutes of a session for students to complete the teaching and course evaluation surveys.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continuous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Partial LAB assignments	30%	0	0	CM26, KM40, SM34, SM35
Participation and attendance	10%	0	0	CM26, SM34
Regular LAB exercises	10%	0	0	CM26, KM40, SM34, SM35
Written exam	50%	3	0.12	CM26, KM40, SM34, SM35

This subject does not incorporate single assessment.

Assessed activities:

- An objective knowledge test conducted through two written exams. Weighting factor: 50% of the final grade. Each exam represents 25% of the final grade.
- Partial LAB exercises (submission of more comprehensive practical dossiers reinforcing the course content). Weighting factor: 30% of the final grade.

- Regular LAB exercises (submission of practical work developed in the classroom). Weighting factor: 10% of the final grade.

- Participation and attendance. Both items will be measured through different activities, such as interactive activities like Kahoot. Weighting factor: 10% of the final grade.

Evaluation criteria:

- The final grade of the course will be the weighted average of all activities subject to evaluation.

- The final grade of the written test will be the average of the two partial exams.

- It is necessary to obtain a minimum of 3.5 in the objective test and an average course grade of 5 to pass the course.

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

- Activities not submitted or completed on the indicated date will be graded as "Not Submitted."

- If the student engages in any irregularity that could lead to a significant variation in the grade of an evaluation activity, this activity will be graded with 0, regardless of any disciplinary process that may be initiated. If several irregularities occur in the evaluation activities of the same course, the final grade for that course will be 0.

Review procedure:

All evaluated activities will be subject to grade review. Students will be informed via the Moodle classroom of the corresponding date in each case. The procedure will be through email. The student will motivate their review request in their message.

Resit examination:

The resit examination will be done through a written test.

The grade of one of the partial practical exercises can be recovered, only if it has been submitted.

Regular practical exercises cannot be recovered, as they are considered exercises that track the course progress.

Gender criteria: Data analysis and problem-solving will take into account, where applicable, social and gender differences. Students are encouraged to use non-sexist language. The UAB guidelines (see "Ten tips for non-sexist language use") can be helpful.

Bibliography

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SANTANA LEITHER, Andres (2017) *Análisis cuantitativo: técnicas para describir y explicar en Ciencias Sociales*. Barcelona: Editorial UOC. <https://elibro.net/es/lc/uab/titulos/57723>

(*) Main references

Gender issues have been taken into account in the list of references.

Software

Excel will be the software used throughout the course (we do not have SPSS license).

Language list

Name	Group	Language	Semester	Turn
(PLAB) Practical laboratories	1	Catalan	first semester	morning-mixed

(PLAB) Practical laboratories	2	Catalan/Spanish	first semester	morning-mixed
(TE) Theory	1	Catalan	first semester	morning-mixed
(TE) Theory	2	Catalan/Spanish	first semester	morning-mixed

PROVISIONAL