COURSE DATA

DATA SUBJECT

Code: 34430
Name: Sampling and statistical inference
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2026-27

STUDY (S)

Degree	Center	Acad. year	Period
1310 - Degree in Sociology	Facultat de Ciències Socials	4	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1310 - Degree in Sociology	Sampling and statistical inference	ELECTIVES

COORDINATION

AYBAR ARIAS CRISTINA

SUMMARY

The "Sampling techniques and statistical inference" course will enable the student to enter the fabulous world of survey research, one of the tools used in social research, delve into technical features to meet all research to provide representative results and know the problems that can arise during fieldwork and biases to which our inferences may be subjected.

- The "Sampling techniques and statistical inference" assignatura is an elective that is offered within the module "Sociology and Social Studies."

- Studying this course students will learn to distinguish between a thorough investigation and sampling, will know the main types of sample designs available (simple random, stratified, cluster sampling, two-stage, ...), learn to interpret survey data (such as the CIS), to know the limitations of the approach, and will delve into estimation methods based on auxiliary information. The contents of the course are part of the core of any educational sociologist and are essential to practice within the studies reviewed and / or market.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

No prerequisites are required to take the course. However, to successfully complete the subject it is advisable to have some prior knowledge of *Socio-statistics*, a certain familiarity with searching for data on the internet¿at least at the basic level provided in the course *Introduction to the degree and to methods and techniques of social research*¿and, above all, a desire to learn. The subject is highly applied in nature, and therefore CLASS ATTENDANCE is essential.

To follow the course, it is necessary to have Excel installed on your personal computer, as this will be the main tool used in class.

COMPETENCES / LEARNING OUTCOMES

1310 - Degree in Sociology

Students must be able to apply their knowledge to their work or vocation in a professional manner and have acquired the competences required for the preparation and defence of arguments and for problem solving in their field of study.

Students must be able to communicate information, ideas, problems and solutions to both expert and lay audiences.

Students must have acquired knowledge and understanding in a specific field of study, on the basis of general secondary education and at a level that includes mainly knowledge drawn from advanced textbooks, but also some cutting-edge knowledge in their field of study.

Students must have developed the learning skills needed to undertake further study with a high degree of autonomy.

Students must have the ability to gather and interpret relevant data (usually in their field of study) to make judgements that take relevant social, scientific or ethical issues into consideration.

DESCRIPTION OF CONTENTS

1. Exhaustive research and sampling-based research.

2. Components of a descriptive report.
3. Statistical inference and reliability of results.
4. The survey and its possible errors.
5. Sample design.
6. Simple random design.
7. Resampling or *Bootstrap*.
8. Systematic, stratified, cluster, and multistage sampling.
9. Notions of non-random samples.

Summary of contents

In the six thematic units that make up the course, the student will learn the basics of sampling theory (including its phases and stages, its sources and types of error), understand how to make inferences with various types of sampling (including estimating the mean, the total, a proportion¿), know how to calculate sample sizes, design a survey and analyze its results, paying attention to the type of questions and surveys, fieldwork, interviewer effects, coding and tabulation of data. Special attention will be given to communication issues and report writing. The student will understand how other non-sampling errors can affect results and how to mitigate them, and will discover other ways to incorporate uncertainty, possibly using non-random samples, and to improve the quality of inferences in population subsets by leveraging dependency structures (*borrowing strength from the neighbors*).

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theoretical and practical classes	60,00
Total hours	**60,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	15,00
Individual or group project	25,00
Independent study and work	25,00

Preparation of lessons	10,00
Preparation for assessment activities	5,00
Resolution of case studies	10,00
Total hours	**90,00**

TEACHING METHODOLOGY

The teaching methodology will be varied and will use different approaches:

a) Expository sessions by the lecturer for each of the topics in the programme. These sessions will be based on case studies from the analysis of which the concepts, analytical interdependencies and key empirical data that students must learn to handle will be explained.
b) Group discussion and analysis sessions based on different materials with the aim of raising new questions about the contents of the course programme and deepening students' understanding of the contents of the subject.
c) Carrying out team work to conduct a survey research. The specific guidelines for carrying out the work will be specified by the teacher in class in accordance with the concerns and interests of the students and will be explained in detail in class. This work will be guided, monitored and supervised by the lecturer.
d) Possible attendance and active participation in conferences organised as complementary activities or related to the subject throughout the term.

EVALUATION

- 90% of the grade will be for the ongoing evaluation of the theoretical and practical activities and problem solving exercises, case studies, panels, poster preparation, essays and articles, oral presentations, reports, projects, fieldwork and recording instruments, laboratory ...
- 10% of regular attendance and active participation of the students both face classroom sessions, and tutorials, and supplementary activities.

The specific criteria and processes to be used for the evaluation as well as its numerical realization, will depend on the number of students enrolled and eventually be publicized in the detailed teaching guide / student can be found in the virtual classroom course

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