

## Sampling and Survey Design

Code: 104854  
ECTS Credits: 6

**2025/2026**

Degree	Type	Year
Applied Statistics	OB	2

### Contact

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### Teachers

Montserrat Ferre Delgado

### Teaching groups languages

You can view this information at the [end](#) of this document.

### Prerequisites

It is not necessary to have specific prior knowledge since it is an introductory course. However, it is useful to have notions of concepts from the social and behavioral sciences, knowledge of basic statistics, some experience with statistical programs or packages (R, SPSS, ...), EXCEL or Power BI and some presentation programs (Power Point, Sway, Prezi,...). Those who consider that they need additional training will be recommended the pertinent bibliography.

### Objectives and Contextualisation

In today's society, surveys are an important tool to obtain information about the population for scientific, business, political or administrative purposes.

This course in survey methodology has as its objective that students understand and critically evaluate surveys as a social research technique, and that they develop the necessary skills to design, carry out and analyze surveys.

The mastery of the survey methodology gives access to good professional opportunities. There is a demand for well-prepared experts in this field, both in the private sector (market research, public opinion companies, political consultancy) and in the public sector (CEO, Idescat, CIS, INE, departments and various secretariats). The knowledge of the survey methodology is also very useful for academic research in various disciplines such as psychology, economics, business administration, sociology, political science, or education.

## Learning Outcomes

1. CM07 (Competence) Design a survey to analyse the results, considering the ethical aspects.
2. KM08 (Knowledge) Recognise sources and techniques to acquire statistical data through experiments, observations and surveys, considering the ethical aspects of these.
3. SM07 (Skill) Select the most suitable data acquisition techniques for each study.
4. SM08 (Skill) Analyse survey results.

## Content

This course is an introduction to the principles and practice of survey design. The main contributions of the research in Survey Methodology are reviewed on the factors that affect the quality of the surveys.

This subject aims to combine the theoretical perspective with the development of applied skills to design and carry out surveys. Using the phases of the survey process as a common thread, the different sources of error will be presented following the perspective of the Total Survey Error, as well as the ways to mitigate it. . The concept of error will be used as a framework to discuss the consequences of using different methods of data collection, the coverage capacity of the sampling frames, alternative sampling designs and their impact on the standard errors of the survey statisticians, the effects of the design of the questionnaire as an instrument of measurement (impact of the order of the questions, differences in its wording, among others), the supervision systems of the field work, the role of the interviewer and the respondent, the impact of the non-response in the statistics of the survey, or the treatment and analysis of the data obtained. The design of surveys implies taking a set of decisions making an adequate balance between the research objectives, the survey errors, the economic costs, and the calendar restrictions that they entail.

### Module 1: Defining a project

1. Definition of a survey
  - 1.1 A little history: The origins of surveys
  - 1.2 The private sector in Spain
  - 1.3 Some working methodologies for data collection
  - 1.4 Some essential characteristics of surveys
  - 1.5 Strengths and weaknesses of surveys
2. Types of surveys. Phases of a survey and definition of a project
  - 2.1 Types of surveys
  - 2.2 Phases of a survey
  - 2.3. Definition of a project
3. Choice of the information collection method
  - 3.1 Classification of information collection methodologies
  - 3.2 Choice of the information collection method
4. The sample design
  - 4.1 Delimitation of the study universe
  - 4.2 Determination of the sampling frame
  - 4.3 The sampling procedure
  - 4.4 The sample size
5. Sampling error, confidence intervals and weighting
  - 5.1 Sampling error
  - 5.2 Confidence intervals
  - 5.3 Weighting

## Module 2: Questionnaire design and fieldwork

- 6. Questionnaire design
  - 6.1 Operationalization of concepts
  - 6.2 Question construction
  - 6.3 Recommendations when writing questions
  - 6.4 Types of survey error
- 7. Types of variables and questions
  - 7.1 Types of variables
  - 7.2 Types of questions
- 8. Measurement errors associated with the questionnaire
  - 8.1 Measurement error associated with the questionnaire
  - 8.2 Recommendations to reduce measurement errors
- 9. Questionnaire presentation and pretest
  - 9.1 Questionnaire presentation
  - 9.2 Layout of the online method
  - 9.3 Questionnaire pretest
- 10. Production
  - 10.1 Production phase
  - 10.2 Selection and training of the survey team
  - 10.3 Measurement errors associated with the survey team
  - 10.4 Fieldwork
  - 10.5 Supervision and control of fieldwork
  - 10.6 Non-response
- Module 3: Analysis and presentation of results
- 11. Data preparation
  - 11.1 Data preparation for analysis
  - 11.2 Analysis of survey data
  - 11.3 Report and presentation of results
- 12. Official statistics

In this subject, the use of Artificial Intelligence (AI) technologies is allowed as an integral part of the development

The student must clearly identify which parts have been generated with this technology, specify the tools used and

The lack of transparency in the use of AI will be considered a lack of academic honesty and may lead to a penalty

## Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Supervised			
Data processing	22	0.88	
Definition of survey	9	0.36	
Design of a project	17	0.68	
Questionnaire design	23	0.92	
Sampling procedure	9	0.36	
Survey	12	0.48	
Transversal project	45	1.8	
Work field	13	0.52	

In the subject the sessions are divided into theoretical, with presentations of the contents by the teacher, and practices. The practices will be done in the computer under the supervision of the teacher, and others will be autonomous. The correction of exercises and recommended practices will be supervised by the teacher.

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

### Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Data processing	15	0	0	SM08
Definition of survey	6	0	0	CM07
Design of a project	11	0	0	
Questionnaire design	15	0	0	KM08
Sampling procedure	6	0	0	
Survey	8	0	0	
Transversal project	30	0	0	
Work field	9	0	0	SM07

The evaluation method consists of preparing a set of practices and taking a final exam.

Weighting of the final grade:

1. Exam: 30% in the final computation of the grade and must be passed to pass the subject. With a grade lower than 5 in the final exam, no average will be made with the practices.

The final exam will be devoted to the evaluation of theoretical and practical knowledge.

In case of failing, only those students who have a grade greater than or equal to 3.5 and who have passed the practices will have access to a new exam.

This new exam cannot be used to raise a grade.

2. Practice: 70% in the final computation of the note.

Group practices(must be approved): Groups of 4-5 students will be formed to carry out a work that will include all the phases of a survey. This practice cannot be done individually under any circumstances.

It will be mandatory to make all the group practical assignments as well as an oral presentation in class at the end of the work in the time set by the teacher in order to pass the subject. This presentation must be made in Catalan or Spanish.

If in any of the assignments the teacher has doubts about whether any of the members (or all) have not done the work, they will be called at a specific time to present that part of the work orally in class and they will be evaluated by asking questions about the work done. In this case, attendance and presentation will be mandatory. Otherwise, they will have a 0 for that part of the practice.

Deliveries made after the deadline will have a 50% reduction in the grade.

The final grade for group practices will be the average of each of the deliveries.

It represents 40% of the final grade.

Individual practices (must be approved): It will consist of carrying out individual practices and it will be mandatory to present all of them.

Deliveries made after the deadline will have a grade of 0.

If copied practices are detected, all of them will have a grade of 0.

The final mark of the individual practices will be the average of each one of the deliveries. If a delivery is not made, it will have a grade of 0.

It represents 30% of the final grade.

EXCEL practices will be proposed that can be used to raise the grade by up to 10% depending on the achievement of the objectives.

There is no possibility of doing single evaluation.

Students who do not appear for the exam or who have not presented any of the individual or group practices will be considered non-evaluable.

## Bibliography

Cea D'Ancona, M<sup>a</sup> Ángeles. 2004. *Métodos de encuesta. Teoría y práctica, errores y mejora*.

Bosch Gardella, Agustí y Orriols Galve, Lluís. 2011. *Ciencia política para principiantes*. Barcelona: Editorial UOC.

Domínguez, Màrius i Simó, M. Tècniques d'Investigació Social Quantitatives. Barcelona: Edicions Universitat de Barcelona.

Gerber, Alan i Green Donald. 2012. Field experiments.

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Anduiza Perea, Eva i Crespo Martínez, Ismael y Méndez Lago, Mónica. 2009. Metodología de la ciencia política. Cuadernos metodológicos nº28 2<sup>a</sup> edición revisada. Madrid: CIS.

Filgueira López, Esther. 2001. "La calidad de la medición frente al error estadístico: la categoría intermedia y la no respuesta parcial". Revista de Metodología de Ciencias Sociales, 4:193-207.

Barreiro, Belen. 2010. "Diez tesis sobre las encuestas demoscópicas". Disponible en:

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"Decálogo de la buena encuesta". Diario ABC, 8/3/2015: 20-21. Disponible en: <http://www.abc.es/espagna/20150312/abci-decalogo-buena-encuesta-201503091152.html>

Font Fàbregas, Joan y Pasadas del Amo, Sara. 2016. "Las encuestas de opinión" CSIC 73

Cea D'Ancona, M<sup>a</sup> Ángeles. 2012. Fundamentos y aplicaciones en metodología cuantitativa. Madrid: Editorial Sintesis.

## Software

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## Groups and Languages

Please note that this information is provisional until 30 November 2025. You can check it through this [link](#). To consult the language you will need to enter the CODE of the subject.

Name	Group	Language	Semester	Turn
(PAUL) Classroom practices	1	Catalan	first semester	afternoon
(PLAB) Practical laboratories	1	Catalan	first semester	afternoon
(TE) Theory	1	Catalan	first semester	afternoon