

## Research Methods

Code: 101102  
ECTS Credits: 6

2024/2025

Degree	Type	Year
2500259 Political Science and Public Management	OB	3

### Contact

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### Teaching groups languages

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

### Prerequisites

Students should have acquired basic concepts of research methods. It is highly advisable that they have completed the compulsory course of Methodology of Political Analysis. They must be able to read English and work with spreadsheets (Excel).

### Objectives and Contextualisation

The aim of this course is that students familiarize with the main social science research techniques and learn how to use them. The bulk of the course is devoted to linear regression analysis and its extensions. We will prioritize practical training and the interpretation and presentation of results over mathematical issues. At the same time, the course will introduce students to the R language of statistical computing through RStudio, to provide the essential skills for data management, exploratory data analysis, data visualization, reproducibility, and effective communication of results. Throughout the course we will work with real-world, socially- and politically-relevant data, while also encouraging a critical and responsible usage of open data.

### Competences

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
- Applying the different behaviour analysis techniques and political actors to real cases from the internal and international political arena.
- Applying the discipline's main theories and different fields to real practical and professional problems.
- Arguing from different theoretical perspectives.
- Assess the social, economic and environmental impact when acting in this field of knowledge.
- Demonstrating good writing skills in different contexts.
- Demonstrating the comprehension of the logic behind the scientific analysis of political sciences.
- Designing data collection techniques, coordinating the information processing and meticulously applying hypothesis verification methods.
- Develop critical thought and reasoning and be able to communicate them effectively, both in your own language and second or third languages.
- Develop strategies for autonomous learning.
- Interpreting and applying English texts in an academic way.

- Make changes to the methods and processes of the area of knowledge to provide innovative responses to the needs and wishes of society.
- Managing the available time in order to accomplish the established objectives and fulfil the intended task.
- Managing the methodological foundations of politic sciences.
- Realising effective oral presentations that are suited to the audience.
- Showing a good capacity for transmitting information, distinguishing key messages for their different recipients.
- Synthesizing and critically analysing information.
- Take sex- or gender-based inequalities into consideration when operating within one's own area of knowledge.
- Using the main information and documentation techniques (ICT) as an essential tool for the analysis.
- Working autonomously.
- Working by using quantitative and qualitative analysis techniques in order to apply them to research processes.

## Learning Outcomes

1. Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
2. Analyse political databases in each case using the appropriate basic techniques of descriptive statistics and inferential statistics.
3. Apply the corresponding statistical techniques to distinct case studies and interpret the results obtained.
4. Arguing from different theoretical perspectives.
5. Assess the social, economic and environmental impact when acting in this field of knowledge.
6. Critically assessing the usage of inductive, deductive and comparative methods.
7. Critically assessing the use of analytical instruments to validate the hypothesis raised.
8. Demonstrating good writing skills in different contexts.
9. Demonstrating the comprehension of the logic behind the scientific analysis of political sciences.
10. Designing and planning an investigation in the field of political sciences.
11. Designing data collection techniques, coordinating the information processing and meticulously applying hypothesis verification methods.
12. Develop critical thought and reasoning and be able to communicate them effectively, both in your own language and second or third languages.
13. Develop strategies for autonomous learning.
14. Interpreting and applying English texts in an academic way.
15. Make changes to the methods and processes of the area of knowledge to provide innovative responses to the needs and wishes of society.
16. Managing the available time in order to accomplish the established objectives and fulfil the intended task.
17. Managing the methodological foundations of politic sciences.
18. Realising effective oral presentations that are suited to the audience.
19. Showing a good capacity for transmitting information, distinguishing key messages for their different recipients.
20. Synthesizing and critically analysing information.
21. Take sex- or gender-based inequalities into consideration when operating within one's own area of knowledge.
22. Use computer tools to collect, import, manipulate, visualise, describe, and model data of all kinds, and present the results.
23. Using the main information and documentation techniques (ICT) as an essential tool for the analysis.
24. Working autonomously.
25. Working by using quantitative and qualitative analysis techniques in order to apply them to research processes.

## Content

1. Data visualization and exploratory data analysis
2. Data management
3. Simple linear regression
4. Multiple regression
5. Categorical independent variables
6. Regression models for categorical dependent variables
7. Interaction effects

## Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Lab and in-class exercises	19.5	0.78	4, 6, 7, 8, 9, 10, 11, 16, 17, 18, 19, 20, 23, 24, 25
Lectures	30	1.2	4, 6, 7, 8, 9, 10, 11, 16, 17, 18, 19, 20, 23, 25
Type: Supervised			
Tutorials	15	0.6	4, 6, 7, 8, 9, 10, 11, 16, 17, 18, 19, 20, 23, 24, 25
Type: Autonomous			
Study	83.5	3.34	4, 6, 7, 8, 9, 10, 11, 16, 17, 19, 20, 23, 24, 25

There are two types of directed activities:

1. Lectures
2. Lab and in-class exercises

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
Final exam	40%	0	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 25
In-class exercises	10%	0	0	4, 6, 7, 8, 9, 10, 11, 16, 17, 18, 19, 20, 23, 24, 25
Lab assignments	30%	0	0	4, 6, 7, 8, 9, 10, 11, 16, 17, 18, 19, 20, 23, 24, 25
Mid-term exam	20%	2	0.08	1, 2, 3, 6, 7, 9, 10, 12, 13, 16, 17, 22, 24

The evaluation will be based on the following activities:

- In-class exercises (10%). Attendance during the corresponding class is mandatory to receive a passing grade on an exercise. No late submissions are accepted. This part of the evaluation cannot be recovered.
- Lab assignments (30%). Attendance during the corresponding class is mandatory to receive a passing grade on an assignment. No late submissions are accepted. This part of the evaluation cannot be recovered.
- Mid-term exam (20%). An open-book exam on a computer.
- Final exam (40%). A closed-book exam covering the course content.

To pass the course, it is required that all of the following conditions are met:

1. Having been previously evaluated for at least two thirds of the total evaluation activities of the subject.
2. Receiving a grade higher than or equal to 4 on the final exam.
3. Receiving a final grade higher than or equal to 5.

Remedial exam process (recuperació)

Only the final exam is recoverable; in-class exercises and lab assignments are excluded from the remedial exam process.

To be eligible to participate in the remedial process, it is required that both these conditions are met:

1. Having been previously evaluated for at least two thirds of the total evaluation activities of the subject.
2. Receiving a final grade greater than or equal to 3.5.

Important considerations

- Taking the exam or handing in an exercise or an assignment exempts the student from the "Not presented" grade.
- In accordance with article 117.2 of the UAB Academic Regulation, the evaluation of those students who have been enrolled before may consist of a single synthesis examination. The students who wish to be evaluated this way should contact the professor at the beginning of the semester (first week of October at the latest).
- Plagiarism: Evidence of plagiarism, copying or similar irregularity will result in a grade of 0 for the corresponding activity (assignment, exercise or exam). In case of such irregularities on more than one assignment, exercise or exam, the final grade for this course will be 0.

## Bibliography

Basic

- Çetinkaya-Rundel, Mine, & Johanna Hardin. 2021. *Introduction to Modern Statistics*. OpenIntro. Freely available at [openintro-ims.netlify.app](https://openintro-ims.netlify.app).
- Mas Elias, Jordi. 2020. *Análisis de Datos con R en Estudios Internacionales*. Barcelona: Editorial UOC. This book can be accessed via the ARE service: <https://login.are.uab.cat/login?url=https://login.are.uab.cat/login?url=https://elibro.net/es/ereader/uab/1672>
- Gelman, Andres; Hill, Jennifer; & Vehtari, Aki. 2021. *Regression and Other Stories*. Cambridge University Press

Complementary

- Chang, Winston. 2018. *R Graphics Cookbook: Practical Recipes for Visualizing Data*. Second edition. Beijing; Boston: O'Reilly. Freely available at [r-graphics.org](https://r-graphics.org).

- Ismay, Chester, & Albert Young-Sun Kim. 2020. *Statistical Inference via Data Science: A ModernDive into R and the Tidyverse*. Chapman & Hall/CRC the R Series. Boca Raton: CRC Press / Taylor & Francis Group. Freely available at [moderndiver.com](http://moderndiver.com).
- Riba, Clara, & Anna Cuxart. 2013. *Regresión Lineal Aplicada*. Barcelona: Documenta Universitaria.
- Wickham, Hadley, & Garrett Grolemund. 2016. *R for Data Science: Import, Tidy, Transform, Visualize, and Model Data*. Sebastopol, CA: O'Reilly. Freely available at [r4ds.had.co.nz](http://r4ds.had.co.nz). Spanish version: [es.r4ds.hadley.nz](http://es.r4ds.hadley.nz).

## Software

- R [r-project.org](http://r-project.org)
- RStudio [rstudio.com](http://rstudio.com)

## Language list

Name	Group	Language	Semester	Turn
(SEM) Seminars	1	Catalan	first semester	morning-mixed
(SEM) Seminars	51	Catalan	first semester	afternoon
(TE) Theory	1	Catalan	first semester	morning-mixed
(TE) Theory	51	Catalan	first semester	afternoon