# Research Design

Master in Social Sciences
Carlos III - Juan March Institute

Fall Term - 2023-24


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Class Hours: Wednesday, 10.00am-1.00pm
Location: Room 18.1.A04
Office Hours: Friday 10.00am-12.00pm or upon request (18.2.E.10)


## Course Description:

This course is an introduction to the fundamentals of research design in social sciences. Its purpose is to provide students with a global and comprehensive view of the research process, to train them with the elemental skills of applied research to pursuit rigorous, independent work, and to become them more sophisticated consumers of empirical research. The course will cover a range of topics, starting from the formulation of research topics and research questions, the development of theoretical arguments and testable hypotheses, the study of causality, an overview of basic qualitative and quantitative data analysis techniques plus other issues related with research design such as measurement, descriptive and statistical inference, mediation analysis or how to write a good research paper.

## Course Organization:

The course will be organized in 13 sessions, from September 13 to December 20. Each session will consist of two parts. First, the professor will deliver a lecture on the topic. Lectures will be backed with PDF presentations that will be available in Aula Global. The latter part of the session will be dedicated to hands-on practical activities aimed at reinforcing the concepts and ideas covered during the lecture. These activities will include group discussions as well as meaningful conversations around individual assignments, which students should have already submitted on Aula Global.

## Textbooks and Readings:

Most of the material for lectures and required readings are form the following textbooks:

- Bueno De Mesquita, E., & Fowler, A. (2021). *Thinking clearly with data: A guide to quantitative reasoning and analysis*. Princeton University Press.
- Kellstedt, P. M., & Whitten, G. D. (2018). *The fundamentals of political science research*. Cambridge University Press.
- Powner, L. C. (2014). *Empirical research and writing: A political science student's practical guide*. CQ Press.
- Toshkov, D. (2016). *Research design in political science*. Macmillan Education, Palgrave.

## Assessment:

Student evaluation will consider 1) class attendance and active participation, 2) completion of assignments, 3) performance in the final exam, and 4) submission of a research design proposal at the end of the course.

1. Attendance to lectures is mandatory. Required readings have to be done before the corresponding lecture. Recommended readings are voluntary. It is expected that students will be actively involved in the discussions of these activities.
2. Out of the 10 sessions dedicated to practical activities in the second part of the class, 6 will include assignments that will be evaluated. Based on their preferences, students are required to select 3 out of these 6 assignments along the course, and submit them no later than 48 hours before the respective class, which means by Monday at 10:00 am. No late work will be accepted.
3. The final examination is scheduled for the last session of the course, which is in week 13. It is designed to assess your understanding of the fundamental concepts presented in the lectures. Please note that there will be no opportunity for a re-sit in June for this exam.
4. The majority of your course evaluation will be based on the written research design proposal. The proposal is expected to delineate the fundamental components of an innovative research project. This encompasses defining a research question, establishing a theoretical contribution, formulating verifiable hypotheses, and presenting the basis of the research design strategy, namely an overview of the intended data collection and analytical approach (approximate length should be between 10-15 pages). Students will have the opportunity to present their progress in

one of the two sessions dedicated to this objective (sessions 9 and 10). The proposal is due no later than January 24. However, this piece of work may be eligible for submission in June if necessary.

The final grade for the course will be calculated according to the following weighting:

- 10% Attendance and Participation
- 25% Assignments
- 25% Exam
- 40% Research Design Proposal

* Ordinary call: 24$^{th}$ January
* Re-take call: 21$^{st}$ June

## **Rules**:

For the good development of the course, the following rules should be observed: The student must be quiet in the class except for questions and participation in the discussions. Use of cell phones is strictly forbidden. Laptops may be used, but only for taking notes.

## Outline:

### Session 1 (Sept. 13th). Introduction to Research Design

In this session the professor will explain the structure, organization and assessment of the course. We will also talk about the scientific logic of social science research, and why thinking about designs is very important for applied research.

Activity: Exploring the strengths and weaknesses of our research skills.

### Session 2 (Sept. 20th). Research Topics and Research Questions

From research topics to research questions. What is and what is not a good research question? Types of research questions. Where do research questions come from?

*Required readings*: Powner (2014): Chapter 1 (pp. 1-19); Toshkov (2016): Chapter 2 (pp. 23-55).

Activity: Narrowing a research question.

### Session 3 (Sept. 27th). The Art of Theory Building

What is a theory? Where do theories come from? Developing explanatory theory. Formal theory in social science. From questions to theory to hypothesis. Causal mechanism and scope conditions. What makes a good theory?

*Required readings*: Powner (2014): Chapter 2 (pp. 21-54); Kellstedt & Whitten (2009): Chapter 2 (pp. 25-51)

*Recommended reading*: Toshkov (2016): Chapter 3 (pp. 56-82).

Activity and Assignment: Evaluating how "good" a theory is.

### Session 4 (Oct 4th). Conceptualizaation, Operationalization and Measurement

Concepts and Conceptualization. Operationalization. Why measurement mattes. Problems in measuring concepts.

*Required readings*: Toshkov (2014): Chapter 4 (pp. 83-105); Kellstedt & Witthen (200): Chapter 5 (pp. 104-123)

Activity: Measuring new and/or problematic concepts.

**Session 5 (Oct 11th). Choosing a Design**

Which research design fit your question. Types of hypotheses. Similarities and differences in Quantitative and Qualitative methods. Overview of techniques.

*Required readings*: Powner (2014): Chapter 4 (pp. 81-108).

Activity: what would be a good research design for your research paper project?

**Session 6 (Oct. 18th). Causality and Experimental Designs**

Causation: What is it and what is it good for? Causal claims as a thinking skill. The fundamental problem of causal inference. Potential outcomes and counterfactuals. Experimental studies. Natural experiments.

*Required readings*: Bueno de Mesquita & Fowler (2021): Chapter (pp. 37-50); Kellstedt & Whitten (2009): Chapter 3 (pp. 45-65)

*Recommended reading*: Toshkov (2016): Chapter 6 (pp. 145-164).

Activity and Assignment: Evaluation of a published paper using an experimental design.

**Session 7 (Oct. 25th). Quantitative / Large-N Designs**

The logic of Large-N research. Key elements in a Large-N design. Common designs for causal inference. Identification strategies in observational studies. Estimating causal effects. Assessing mechanisms. Mediation analysis. Intermediate outcomes.

*Required readings*: Toshkov (2016): Chapter 8 (pp. 201-208, 227-257)

*Recommended reading*: Powner (2014): Chapters 7 and 8

Activity and Assignment: Evaluation of a published paper using a Large-N quantitative design.

**Session 8 (Nov. 8th). Qualitative / Small-N Designs**

Small-N comparative research. Necessary and sufficient conditions.

*Required readings*: Toshkov (2016): Chapter 9 (pp. 258-284)

*Recommended reading*: Powner (2014): Chapters 5 and 6

Activity and Assignment: Evaluation of a published paper using a Small-N qualitative design.

**Sessions 9 & 10 (Nov. 15th & Nov.22nd). Student's Research Project Presentations**

In these two sessions students will present a proposal of their research design paper. At this point three parts of the project should be fully developed: a clear and well-motivated research question, the basis of the theoretical argument and a set of testable hypotheses. In this session student will also need to present their research design strategy for hypothesis testing.

**Session 11 (Nov. 29th). Single-Case study and Mixed Designs**

Uses of single-case designs. Mixed and nested designs: a pragmatic approach to social sciences research.

*Recommended reading*: Toshkov (2016): Chapter 10 (pp.286-306) and Chapter 11 (pp. 310-326)

Activity and Assignment: Evaluation of a published paper using a Single-case or Mixed design.

**Session 12 (Dic. 13th). Practicalities**

The parts of an empirical paper. Doing Pre-research: What a literature review is and what is not. Communicating research: posters, presentations and publishing.

*Required readings*: Powner (2014): Chapter 3 (pp. 55-80) and Chapter11 (pp. 245-265)

*Recommended reading*: Toshkov (2016): Chapter 12 (pp. 328-344); McCloskey (2000). Economical writing, Waveland Press Inc.; Sword, H. (2012). Stylish academic writing. Harvard University Press.

Activity: [TBA]

**Session 13 (Dic. 20th). Final Exam**