POP88162 — Introduction to Quantitative Research Methods

Module Information	
Module Code	POP88162
Module Title	Introduction to Quantitative Research Methods
Department	Political Science
Year Group	Postgraduate
Module Personnel	Dr Tom Paskhalis
Academic Year	2026–27
Credit Weighting	10 credits (ECTS)
Semester	Semester 2 (Hilary Term)
Contact Hours	22 hours of lectures (one 2-hour lecture per week) 11 hours of workshops (one 1-hour workshop per week) 22 hours of tutorials (one 2-hour tutorial per week)

Module Content	
Module Description	This module introduces students to the practice of data analysis at an elementary postgraduate level. It is delivered in three parts: a 2-hour lecture in which we discuss approaches to empirical quantitative research and statistical methods; a 1-hour workshop in which we cover the use of R for data analysis; and a 2-hour tutorial in which students gain hands-on experience working with data using R and RStudio. Over the course of the module students submit three assignments designed to test their knowledge of R and their understanding of key statistical methods. Beyond becoming comfortable working in R, the central purpose of the module is to make students comfortable with the design and execution of a quantitative study that answers a well-defined research question situated within the broader political science literature. To this end, students write a research design and a final research paper.
Module Learning Aims	The goal of this module is to introduce students to the practice of data analysis at an elementary postgraduate level. More than ever before, political science research relies upon

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	data — information about people, firms, nations, etc. that can be compiled, compared and analysed en masse. Political scientists analyse data with an eye to explaining the social world. Not all political scientists perform quantitative data analysis, but as empirical quantitative studies provide so much of our knowledge about politics and society, every student of the subject must now know at least a little about how it works.
Learning Outcomes	On successful completion of this module, students should be able to: • recognise different types of data; • specify populations of observations and samples selected from such populations; • develop statistical models of the social world; • identify and summarise data useful for testing such models; • carry out statistical hypothesis testing; • interpret and critique quantitative results found in the political science literature.
Indicative Reading / Resources	Core texts: • Agresti, A. (2018) Statistical Methods for the Social Sciences. 5th ed. London: Pearson. • Bueno de Mesquita, E. and Fowler, A. (2021) Thinking Clearly with Data: A Guide to Quantitative Reasoning and Analysis. Princeton, NJ: Princeton University Press. Selected supplementary texts: • Imai, K. (2017) Quantitative Social Science: An Introduction. Princeton, NJ: Princeton University Press. • King, G., Keohane, R. O. and Verba, S. (2021) Designing Social Inquiry: Scientific Inference in Qualitative Research. New ed. Princeton, NJ: Princeton University Press. A full reading list, including required and additional weekly readings and online resources, is provided in the module syllabus.

Assessment	
Assessment Components	• Participation — 10% • Two R assignments — 10%

Assessment	
	• Research design — 20% • Research paper — 60%
Assessment Details	• Participation (10%): tutorial attendance. • R assignments (10% in total): students complete three short R assignments designed to test their knowledge of R and their understanding of key statistical methods. The first assignment is formative and does not count towards the final grade; the remaining two are summative and together account for 10%. • Research design (20%): approximately 1–2 pages and no more than 500 words (references excluded). • Research paper (60%): approximately 10 pages and no more than 4,000 words (references excluded). Each student identifies a research question and answers it using quantitative analysis. There is a 10% leeway on the stated word counts. All coursework is submitted via Blackboard (DOC, DOCX, ODT or PDF; R assignment submissions should be compiled from R Markdown into a DOC or PDF document). Unexcused late submissions are penalised in accordance with standard departmental policy.

Additional Information	
Prerequisites	None
Co-requisites	None
Any other information	Software: the module uses R and RStudio, both free, open-source and available for Windows, macOS and Linux. Students should install both on their personal computer prior to attending tutorials. Generative AI: a limited, fair use of generative AI is permitted for tasks such as clarifying concepts and R code, brainstorming and proofreading. Using generative AI to produce solutions to assignments is not permitted. All submitted coursework must be individual and original, in line with College policy on plagiarism.