

Introduction to Quantitative Social Sciences

Course title - Intitulé du cours	Introduction to Quantitative Social Sciences
Level / Semester - Niveau / semestre	L1 – S1
School - Composante	Ecole d'Economie de Toulouse
Teacher - Enseignant responsable	Charlotte Cavaillé
Other teacher(s) - Autre(s) enseignant(s)	Catherine Molho
Other teacher(s) - Autre(s) enseignant(s)	Marijn Keijer
Other teacher(s) - Autre(s) enseignant(s)	Jonathan Stieglitz
Other teacher(s) - Autre(s) enseignant(s)	
Lecture Hours - Volume Horaire CM	15
TA Hours - Volume horaire TD	0
TP Hours - Volume horaire TP	0
Course Language - Langue du cours	English
TA and/or TP Language - Langue des TD et/ou TP	

Teaching staff contacts – Coordonnées de l'équipe pédagogique :

Charlotte Cavaillé : charlotte.cavaillé@tse-fr.eu

Course Objectives – Objectifs du cours :

The scientific method is a systematic process for developing knowledge by formulating testable hypotheses, collecting and analyzing evidence, and revising or rejecting claims based on the results in a transparent and replicable way. In this class, we will discover how evolutionary anthropologists, sociologists, psychologists, and political scientists apply the scientific method to the study of human behavior, including gender differences and large-scale cooperation.

Through a small set of shared readings and structured discussion, students compare what each field treats as a "puzzle," what counts as evidence, and how scholars build and test explanations. The course also introduces core concepts from positivist research and the methods sequence-hypotheses, outcomes, causal (treatment) variables, controls, mechanisms, and the distinction between correlation and causation-so students can begin formulating researchable questions about the social world.

At the end of this course, you will ...

- be more familiar with important concepts and claims that you will encounter throughout your studies at TSE (e.g., "theory", "falsifiable/unfalsifiable", "hypothesis testing," "an empirical prediction," "an empirical strategy," "correlation is not causation," "the fundamental problem of causal inference," "a variable," "an outcome variable," "an explanatory variable," "an omitted variable", "an endogenous/exogenous variable," etc.)
- have been exposed to peer-reviewed scientific articles
- have practiced turning questions about the world into testable claims
- have a better sense of what knowledge production looks like in the quantitative social sciences (hint: it involves Bayes' rule, so be ready to revisit your high school math)
- better understand the differences (and similarities!) between evolutionary thinking and economic thinking, psychology and sociology, and why economics is often called the "imperialist social science"
- be more comfortable discussing all of the above in English

Prerequisites – Pré requis :

None

Practical information about the sessions – Modalités pratiques de gestion du cours :

When ? Wednesday 11 am – 12.30 pm

Where ? TBD

The first class we be on **September 9th, 2026**

Grading system – Modalités d'évaluation :

- Readings and in-class quizzes: 40%
- Final in-class exam (during exam week, after classes end): 60%

Bibliography/references – Bibliographie/références :

See Moddle [readings available after September 1st, 2026]

Session planning – Planification des séances

- Introduction and Syllabus – Charlotte Cavaille (09/09)
- Evolutionary Anthropology – Jonathan Stieglitz (16/09 & 23/09)
- Psychology – Catherine Molho (30/09 & 07/10)
- Sociology – Marijn Keijzer (14/10 & 28/10)
- Political Science – Charlotte Cavaille (04/11 & 11/11)
- Conclusion and Synthesis – Charlotte Cavaille (18/11)

Distance learning – Enseignement à distance :

N/A