

- Faculté des sciences économiques
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Making Sense of Data: An Introduction to Quantitative Reasoning in Social Sciences (5TS2011)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Doctorat en travail social	Cours: 2 ph	Voir ci-dessous	3

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

Période d'enseignement:

- Semestre Automne

Equipe enseignante

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Contenu

In a data-driven world, the ability to think clearly and critically about quantitative information is essential. Quantitative reasoning—and the ability to assess quantitative claims—is important not only in traditionally data-focused fields but also in broader social, political, and economic contexts.

This course is explicitly designed for students with little or no prior experience in quantitative methods. It is therefore not suitable for students who already have an advanced background in the subject.

The practical components of the course use Stata. No prior experience with the software is required, as students will receive an introduction to its basic use.

The course introduces key tools for quantitative data analysis in the social sciences. It prioritizes intuitive understanding and introduces formal or technical concepts only where necessary. The course also provides a foundation for students who may wish to pursue more advanced methods courses later.

The course has three primary goals:

- To lower the barriers to reading, understanding, and critically evaluating quantitative studies, and to help students begin thinking about how quantitative analysis might inform their own work.
- To introduce basic statistical methods used by researchers and policymakers to investigate social, political, and economic questions.
- To provide students with a foundation for considering to apply one or more of the methods covered in the course in a thesis, dissertation, or professional project.

By the end of the course, students will be able to:

- Explain the intuition behind core quantitative methods used in social science research, including descriptive statistics, data visualization, hypothesis testing, regression analysis, and experimental methods.
- Understand the distinction between correlation and causation and recognize the basic conditions under which causal conclusions may be drawn.
- Read, interpret, and critically evaluate introductory quantitative studies.
- Conduct and visualize basic data analyses using Stata.
- Interpret and communicate the results of basic quantitative analyses.

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Forme de l'évaluation

The course assessment takes place during the teaching period (examen intermédiaire).

- 15%: Graded homework assignments and participation throughout the semester.
- 85%: In-person written examination (90 min) during the final class.

Examinations and retake examinations are organized by the ITTS. The relevant procedures will be explained in class or communicated separately where necessary.

Neither documents nor connected objects are allowed during the exam, except for one A4 sheet (handwritten on one side only), a non-programmable calculator, and a non-electronic dictionary. In case of violation of these rules, students will be considered in a situation of fraud, the unauthorized items will be removed. The exam could be deemed as failed.

Modalités de rattrapage

Retake examinations are organized by the ITTS. The relevant procedures will be explained in class or communicated separately where necessary.

Documentation

All course materials, required readings, and further organizational information will be made available on Moodle.

Pré-requis

No prior knowledge of quantitative methods or Stata is required. Students will receive instructions on how to obtain access to Stata.

The course is open to:

- Registered PhD students at the ITTS and other institutions or programmes.
- Registered Master's students.
- Prospective ITTS PhD students whose eligibility for admission has been formally assessed and confirmed by the ITTS.

Please register by emailing messagerie.itts@unine.ch no later than 15 September 2026.

The number of participants is limited to 15.

Forme de l'enseignement

In person lectures and homeworks. The course is taught in English.

Teaching periods:

Fridays 16.10.2026 (am), 30.10.2026 (am), 13.11.2026 (am), 27.11.2026 (fd), 11.12.2026 (fd)
(am = half-day 09:15–12:45; fd = full-day 09:15–17:15)
Room D59, Main Building, University of Neuchâtel, Avenue du 1er Mars 26

Objectifs d'apprentissage

Au terme de la formation l'étudiant-e doit être capable de :

- Develop understanding of quantitative tools employed in political, social, and economic research
- Carry out basic data analysis using the statistical software STATA
- Interpret results

Compétences transférables

- Criticise research methodology
- Evaluate research methodology
- Develop basic skills to quantitatively analyze social phenomena
- Practice basic coding skills
- Develop proper technical language when reading, analyzing, and presenting quantitative research