

- Faculté des sciences
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Introduction to survey statistics (UniNe) (3ME2001)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en méthodologie d'enquête et d'opinion publique	Cours: 4 ph	écrit: 2 h	6

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

Période d'enseignement:

- Semestre Printemps

Equipe enseignante:

Prof. Dr. Beat Hulliger
School of Business FNHW
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Objectifs:

The course will give the students the necessary training to establish alone or in collaboration with a survey statistician the sample design for a survey, to use appropriate estimators and to adapt the methods to cope with deviations from the ideal plan.

Contenu:

This course is about the statistical methods used in surveys.

The principle of random sampling and the main types of sample designs (simple random sampling, stratified random sampling, cluster sampling, two-phase sampling, rotational designs) are introduced and the classical estimators for these designs are treated. Enhancement of the estimators through the use of external auxiliary information using linear models is discussed. Classical and resampling variance estimation is treated.

The second part of the course will treat deviations from the paradigm of random sampling and how to deal with them. Frame deficiencies, unit and item non-response treatment, detection and treatment of erroneous data, in particular of outliers will be discussed.

<http://moodle2.unil.ch/course/view.php?id=4947>

Time 09:15 -13:00 - room B217

1. 24.02.2016 : Survey Statistics, Foundations and Paradigms, R, packages sampling and survey /chap.1
2. 02.03.2016 : Simple random sampling, proportions, sample size /chap.2, section 2.1-2.7
- 3.09.03.2016, Stratified random sampling, forming of strata, sample allocation /chap.3, section 3.1-3.5
4. 23.03.2016: Ratio estimation /chap. 4, section 4.1,4.2,4.4
5. 06.04.2016: Domains and poststratification /chap.4
6. 13.04.2016: Review and practice session
7. 20.04.2016: Cluster sampling /chap.5, section 5.1-5.3,7.5
8. 27.04.2016: Horvitz-Thompson estimator and complex sampling /chap.6, section 6.4
9. 04.05.2016: Nonresponse, missing values and errors /chap.8, section 8.1,8.4-8.6
10. 11.05.2016: Variance estimation /chap.9, section 9.1-9.3
11. 18.05.2016: Analysis of complex survey data /chap.10,11, section 10.1-10.3, 11.1-11.4
12. 25.05.2016: Overview: Longitudinal surveys, Two-phase sampling, , Robust estimation /section 12.0
13. 01.06.2016: Reserve
- 15.06.2016 Exam

Forme de l'évaluation:

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Students are assessed through a final examination (2h written exam) during the session of exams

Documentation:

Lohr, Sharon L. (2010): Sampling: Design and analysis (2nd ed), Boston: Brooks/Cole (Cengage Learning), ISBN 9780495105275

Pré-requis:

Students are expected to have knowledge and skills in applied statistics including testing and regression modelling as well as knowledge of the software R.

Forme de l'enseignement:

- Compulsory course for master in public opinion and survey methodology
- Spring Semester
- Course: 4 hours

Teaching will be based on inputs from the lecturer and hands-on training with the statistical software R.