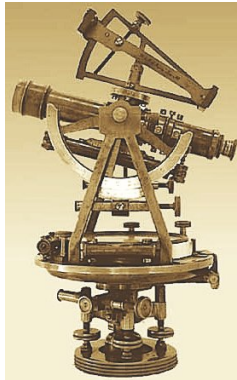


QUANTITATIVE METHODS



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Abstract of the course

1. **Programming Numerical, Financial and Statistical Techniques in R and Stata**

R: Freeware software with numerical, financial and statistical analysis . Very powerful and with many syntax facilities.

Stata: A very useful *proprietary* financial and statistical analysis software. Based on a windows framework with syntax facilities.

2. **Sampling Techniques**

Planning, execution and evaluation of sample surveys. Simple, random, stratified, cluster and multistage sampling; cost functions and optimal designs.

3. **Introduction to Data Mining Techniques**

An introduction to Data Mining and model building by using advanced technologies that enable to collect and analyze large amounts of data.

Evaluation of the Course

The **evaluation** of the course is based on:

- **70%** Homeworks in groups of 2 or 3 students, presentations and discussions.
- **30%** Final Exam.

Bibliography

- R.L. Scheaffer, W. Mendelhall and L. Ott, *Elementary Survey Sampling*, 6th ed. (2006), Duxbury, Boston.
- T. Lumley, *Complex Surveys: A Guide to Analysis Using R*, (2010), Wiley, New Jersey.
- S. Lohr, *Sampling Design and Analysis*, 2th ed. (2009), Duxbury, Boston.
- N. Ye, *The handbook of Data Mining*, (2003), Erlbaum Assoc.
- C. Cygi, N. Carlo and B. Williams, *Six Sigma For Dummies*, (2005), Wiley.

WEB pages

- Eric V. Slud: <http://www.math.umd.edu/~evs/s440/>
- Thomas Lumley: <http://faculty.washington.edu/tlumley>
- Stata: <http://www.ats.ucla.edu/stat/stata/topics/Survey.htm>
- Peter Lucas: <http://www.cs.ru.nl/~peterl/teaching/DM/>
- Graham Williams: <http://datamining.togaware.com/survivor/index.html>