Data Analysis in Epidemiology (28878-01)

2 ECTS

Methods: Lectures and practicals

Assessment: Quizzes, graded group homework and devising of a statistical analysis plan for either a real or mock project.

Time: 7-8.01, 15.01, 21.01, 14:15-17:00
6.01, 13.01, 14.01. and 20.01 all day

Dates: starts 06.01.2016

Place Swiss TPH, Socinstrasse 57, lecture room 1

Remark: Students must bring their own laptop with Stata installed.

Workload: 60 hours

- Lectures (contact hours): 12 lessons of 2 hours = 24 hours
- Practicals: 3 practicals of 4 hours = 12 hours
- Reading/study/assessment: 24 hours

Objectives: Students develop practical skills in conducting regression analyses and in describing and presenting their results. Based on concrete scientific questions, they can devise analysis plans and carry out the respective analyses correctly. They know different strategies of model development and are familiar with different methods of confounder control and know how to model and interpret effect modification.

Description: The lecture focuses on practical examples, based on data sets from epidemiological studies. Exercises are designed to teach students how to carry out the major steps of an epidemiological analysis project. Regression analyses, including classical, logistic and survival models, will constitute the core of the lectures. But additional topics such as random effects, repeated measures, factor analysis and methods dealing with missing data will also be treated. All exercises will be solved using STATA. There is also an on-line forum where students can post problems from own projects and discuss questions arising in class. Students are encouraged to bring in their own problems for discussion.

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Content:

- Good epidemiological practice
- General modelling issues
- Linear regression
- Random effect models
- Logistic regression
- Repeated measures
- Survival analysis
- Factor analysis
- Adjustment for participation bias
- Data imputation