

# Introduction into multilevel modelling of clustered data

## Description

Real data are often clustered such as repeated measurements on the same subject or measurements in grouped subjects (e.g. family or school studies). Failure to allow for clustering results in erroneous standard errors and confidence intervals. The aim of the course is to provide participants with an understanding of the basic concepts and general techniques in the analysis of clustered data. Valid analysis methods appropriate for clustered data will be introduced. The course software will be Stata. Main concepts to be covered include: clustering, random intercept, random slope, linear and logistic random-effects models (multilevel models, mixed models, hierarchical models), robust standard errors, generalized estimating equations (GEE), modelling strategy, model diagnostics.

## Objectives

By the end of the course participants will be able to define the appropriate analysis method for a clustered data set. Participants will be able to perform and evaluate own analyses of clustered data.

## Dates

10 -12 July 2019

## Eligibility

The course is aimed at clinicians, researchers, public health specialists and other health care professionals who want to perform analyses of data with clustered structures. This is an advanced statistical course. Participants should know the principals of linear and logistic regression modelling and practical experience with linear regression analysis is required. Basic knowledge of Stata is needed.

## Course Structure

This is a statistical methods course. We will follow a nonmathematical approach and focus on the practical application of the techniques on datasets from epidemiology and prevention research. The course consists of interactive lectures and computer practicals. You have to bring the own laptop to the course (Stata has to be installed.) We will conclude with a question and answer session and an exam.

### SSPH+PhD Program:

Program Coordination Ann Walser

Academic Lead Prof. Matthias Egger  
Prof. Thomas Abel

### Contact:

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<b>Assessment</b>	Written exam										
<b>Credits</b>	<p><b>1 ECTS</b></p> <p>Preparation Work: 4 h, Contact: 24 h, Follow Up: 2 h</p> <p>(1 ECTS corresponds to approx. 30 hours work)</p>										
<b>Facilitator</b>	<b>Professor Martin Rööfli</b> (Head of the Environmental Exposures and Health Unit, Swiss Tropical and Public Health Institute, CH-Basel)										
<b>Location</b>	<b>Basel</b> , details will be announced										
<b>Course Fees</b>	<table border="0"> <tr> <td>SSPH+ PhD Students</td> <td>30.— CHF</td> </tr> <tr> <td>PPHS PhD Students</td> <td>30.— CHF</td> </tr> <tr> <td>External MD/PhD Students</td> <td>300.— CHF</td> </tr> <tr> <td>External Academics</td> <td>850.— CHF</td> </tr> <tr> <td>Others</td> <td>1250.— CHF</td> </tr> </table> <p>(The cost scheme depends on the Number of ECTS. Per ECTS participants are asked to pay 300,- CHF, 850,- CHF or 1250,-CHF, respectively)</p>	SSPH+ PhD Students	30.— CHF	PPHS PhD Students	30.— CHF	External MD/PhD Students	300.— CHF	External Academics	850.— CHF	Others	1250.— CHF
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<b>Registration</b>	<a href="#">Please register online on our website</a>										
<b>Deadline</b>	<b>10 June 2019</b>										
<b>Max. Attendance</b>	<p>20</p> <p>(preference is given to SSPH+ PhD Students)</p>										

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