Course Syllabus

1 General information

Course:	Applied Analysis of Variance and Experimental Design (401-0625-01L)
ECTS:	4 CP
Instructor:	Marianne Müller (`mlm@ethz.ch`)
Lectures/Exercises:	Monday 1-3pm in HG F3
Class website:	`http://stat.ethz.ch/education/semesters/as2014/anova`

2 Course objective

You will learn about the most important techniques to design experiments and analyze the resulting data. At the end of this course, you will be able to choose appropriate experimental designs for standard situations and to determine the appropriate statistical analysis. You will also be able to recognize the most typical experimental designs and realize when poor designs are used. We will use the statistical software R to get hands-on experience.

Topics covered are: Principles of experimental design, analysis of variance for a one-factor experiment, two-way-anova with interactions, factorials and fractional factorials, block designs, split plot designs.

3 Course format

There are 13 weeks of lectures and/or exercises. I will explain the theory in the lectures and illustrate it with examples. The first two weeks are lectures. In the third week, there will be an introduction into R in the computer lab as well as the first exercise series. All following exercise lessons will take place in HG F3 from 2-3 pm every second week.

4 Course material

All slides, notes, exercises sheets, data sets, etc. can be found on the class website.

5 Exam

There is a written exam of 120 minutes. There will be questions on theoretical as well as practical aspects, where the practical aspects can involve interpreting R output. It is open book and you can use a simple pocket calculator (not programmable).