

# Guidelines for the statistics course for EES, MEME and other Master's students

Summer semester 2016, Prof. Dr. Dirk Metzler

## Some of the aims of this course

- Understand the principles underlying statistics and probability
- Understand widely used statistical methods
- Learn to apply these methods to data (with R)
- Understand under which conditions these methods work, and under which conditions they do not and why
- Learn when to choose which method and when to consult an expert
- Be able to read and judge scientific publications in which non-standard statistical methods are applied and explained
- Get a feel of randomness

## Structure of the course

We will usually have a 90min lecture on Mondays and a 45 min exercise course on Thursdays. You will get a homework exercise sheet on Monday, have the chance to ask questions about these exercises on the Thursday of the same week and have to hand in your exercises before the exercise course of the next week, where you will also present your solutions.

You will be able to understand the Monday lecture only if you remember the contents of the lecture from the week before. Therefore, it is very important that you study the material from the week before (e.g. from handouts available on [http://evol.bio.lmu.de/\\_statgen/StatEES/16SS](http://evol.bio.lmu.de/_statgen/StatEES/16SS)) before you come to the lecture. To support your motivation for this, there will always be a quiz in the beginning of the lecture. You will have to answer a simple question about the contents from the week before, and I will collect your written answers. Make sure to come to the lecture in time to be able to participate in the quiz.

The homework and the exercise course does not only have the aim to help you to better understand the contents of the lecture. It should also help you to get some experience with the more practical aspects of data analysis.

## Grading

There will be an exam in the end of the semester for which you can get up to 82 points. For your answers in the quizzes you can get up to 6 points (in total during the semester), depending on the quality of your answers. If you hand in solutions to 2/3 of the exercises in time and if you are always ready to present these solutions in the exercise course, you can get up to 12 points (in total during the semester). **Whether you obtain these 12 points or only a fraction of them will then depend on your presentations of solutions in the class.** You should collaborate with other students to find solutions. But in the end, each of you should write up the solutions in his or her own words and hand them in before the exercise course. For getting these 12 points it is not necessary that all solutions are perfectly correct. However it must be recognizable that you seriously tried to find reasonable solutions and you must always contribute actively to the exercise course.

The highest possible total number of points is 100. If you get at least 95 points, you get a 1.0 ("very good"), for 90 to 94.99 points you get a 1.3, for 85 to 89.99 points a 1.7, etc. To pass the course (with a 4.0) you need at least 50 points.