



Course analysis (course evaluation)

Course code 4BI108	Course title Applied Biostatistics	Credits 7,5
Semester (VT/HT-yr) HT-23	Dates 231011-231109	

Course Director Matteo Bottai	Examiner Matteo Bottai
Teachers in charge of different parts of the course Pär Villner	Other participating teachers R Intro: Arne Lindqvist, Nico Dantuma and Niels Krämer

Number of registered students at the 3-week check 54	Number passed at final course day 44	Response frequency course valuation survey 68,52 %
Other methods for student influence (in addition to the final course valuation/survey) Oral feedback session at the end of the first week, in addition to less formal oral feedback every lecture and lab.		
Feedback reporting of the course evaluation results to the students 231125 Canvas		

Note that...

The analysis should (together with a summarising quantitative summary of the students' course evaluation) be communicated to the education committee at the department responsible for the course and for programme courses also to the programme coordinating committee.

The analysis was communicated to the education committee on the following date: 2023-12-11
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1. Description of any changes implemented since the previous course occasion based on the views of former students

More time was given to the students for their own work during the lab sessions (1.5 hours instead of 1-hour last year).

In the previous years the students wanted a more thorough description of how statistics is used in R. Therefore, more time was also spent showing applications of statistics during the lectures (every lecture ended with a 1-hour R session), and the course started with a 3 day introduction to R.

The exams were too easy in the previous years, with almost all students passing them with distinction. The exams did not cover the ILO's relating to critical thinking and ethics properly. Therefore, this year the exam was made more challenging and several questions required the students to demonstrate an understanding of statistical methods and of the ethical aspects of statistics in biomedicine. The exam this year allowed a fairer assessment, and the distribution of the grades were more evenly spread.

2. Brief summary of the students' evaluation of the course

(Based on the students' quantitative responses to the course valuation and key views from free text responses. Quantitative summary and any graphs are attached.)

A major difficulty for many students was R: they ask for longer labs and wished that the R introduction was either longer or covered less material. In fact, the description of R was given with more detail this year than it was the previous years. It would be hard to spend additional time on R during without taking out important content from the lectures. A possibility could be to change the R introduction to cover only the basics.

Several students asked for the lecture slides to be uploaded on the course website and for the R session material to be uploaded before the lectures. The reason the slides were not uploaded is that there was a pdf with Lecture Notes published on Canvas that covered the same material as the lecture slides. The R Session material could be published ahead of time in the future.

Some students also thought that the course covered too much material in too little time. This is probably because many students did not have the required knowledge when starting the course. The recap given in the first half of the course for many was completely new material.

Overall, the feedback was positive with a mean grade of four out of five. The students liked the structure of the course. They liked the fact that every day consisted of a lecture followed by a lab session, and they enjoyed the possibility of asking for help during the lab sessions. They also seemed to understand and appreciate the potential usefulness of statistics in biomedicine.

3. The Course Director's reflections on the implementation and results of the course

Strengths of the course:

The structure is very good for students who have previously taken a beginner's courses in statistics. Much time is spent repeating fundamental statistical concepts, to the benefit of those you have not learned them before or have forgotten about them. In addition, relatively advanced statistical techniques are introduced at a steady pace. This lays a solid foundation to learn even more in the future and to be able to understand the statistical aspects of current research.

It is very good that there are lab sessions every day following the lectures.

Every week ends with an "assignment" that contains exercises like the questions on the exam. This is a great way for the students to prepare themselves for the exam.

Weaknesses of the course:

The course is supposed to be a follow-up course on basic courses in statistics. For this to work, the students must be familiar with statistics. This year, very few students had the knowledge that they should have had according to instructions sent out to the students. Many were unfamiliar with very fundamental statistical concepts. As a result, the pace of the course was too high for them.

The lab sessions are only two hours, which may be too short. Three hours would be a desirable improvement.

Some of the course ILO's are difficult to examine with a written exam in R. This is particularly true of the ILO "consider the ethical dimensions of statistical analysis and how findings are reported". It would be better to examine this ILO with a home assignment which is mandatory.

The room (Scheelesalen) is not very well suited to giving lectures, because it is hard to use the whiteboard in such a way that all students can see what is written on the board. A more traditional lecture hall would be preferable for next year.

3. Other views

The students worked hard and seemed to take the course seriously. The attendance at the lectures and labs was very high.

4. Course Director's conclusions and any suggestions for changes

(If changes are suggested, state who is responsible for implementing them and provide a schedule.)

It is a great idea to have a R introduction during three days but given that most students are unfamiliar with both R and statistical programming more generally, this introduction should focus on less material: perhaps 20% of what was covered in this year's introduction. Pär Villner can collaborate with Arne Lindqvist (who was responsible for the R introduction) to achieve this.

The students' knowledge of statistics must be higher when the course starts. Alternatively, the course should be converted into a beginner's course in statistics. Information regarding the required knowledge was sent out, but few students seemed to have taken notice. It may be useful to have all students to take a short test before of the course starts. The result of the test would have no consequence other than helping the students themselves understand where they stand with respect to the course requirements. Such a test is published on the course website, but few students seemed to have done it. (One students said that "it would have been too depressing" to perform the test and realize her weaknesses). We may need to find a way of making sure the students perform the test. Pär Villner can take responsibility for constructing the test and discussing with the program director how and when the test should be published.

A mandatory assignment should be introduced, that covers the ILO's related to the ethical aspects of statistics and peer-review.

Appendices: