Course analysis (course evaluation)

Course code	**Course title**	**Credits**
4BI108	Applied Biostatistics	7,5
Semester (VT/HT-yr)	**Dates**	
HT-24	241016-241114	

Course Director	**Examiner**
Matteo Bottai	Matteo Bottai
Teachers in charge of different parts of the course	**Other participating teachers**
Mahmood Ul Hassan	R Intro: Niels Krämer Nil Campama Sanz Qirong Lin Evanthia Iliopoulou

Number of registered students at the 3-week check	**Number passed at final course day**	**Response frequency course valuation survey**
58	52	44,83 %
Other methods for student influence (in addition to the final course valuation/survey) Oral feedback sessions were held at the end of the first week		
Feedback reporting of the course evaluation results to the students 241130 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:
The analysis was communicated to the programme coordinating committee on the following date:

1. **Description of any changes implemented since the previous course occasion based on the views of former students**

The exam was at moderate difficulty level compared the previous year. Students' performance was spread out across the range of grades, indicating a more balanced or varied achievement level among the group.

This year, the models for longitudinal data was introduced in the last lecture, along with teaching how to implement it in R. This aspect, which was missing previously, was part of the course content.

This time, efforts were made to include more R code in the lecture and to introduce the **performance** package to verify model assumptions and assist students in building the model. Also introduced some list of packages very briefly that would be helpul for the student to produce the different models output according to research Journals.

More detail was shared and explained how R functions work. For example, how to perform hypothesis testing without using direct functions, calculate p-values, computation of predictions from different model, and more. This helped students understand how R functions generate the same results step by step.

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.)

Overall, the feedback was positive with a mean grade more than three out of five. The course material, computer labs and R code used in lectures are very helpful for students to prepare for the exam.

Students had issues with the electricity sockets in the classroom. Although we provided them with an extension cord after some lectures, they were still not satisfied.

Some students find it challenging to understand different functions in R, even though detailed explanations were provided. For instance, they were taught how to read function documentation and run the examples included in it. However, I noticed that some students rely heavily on ChatGPT to get code without understanding how it works. This is why they want me to allow the use of ChatGPT.

A lot of detail was provided about different R functions. Students were encouraged to use lab codes, lecture codes, and online resources to explore and implement these functions. Despite this, some students still faced difficulties in properly applying the functions in exam. I believe students need more practice and understanding with R programming before taking this course.

In the first computer lab, I went through all the lab codes with the students. However, in the second lab, students wanted to work on it themselves and ask questions when they encountered difficulties. Now, based on some feedback, I realize that some students expected me to explain all the code during the last hour, though no one mentioned this during the lab. Even so, I did cover some parts of the questions where I thought additional explanation might be needed. In the future, I may need to strike a better balance.

Some students felt that the course covered too much material in too little time, likely because many lacked the required background knowledge when starting the course. The recap provided in the first half of the course was, for many, entirely new material. Some students needed more explanation of the mathematics and algorithms behind the functions in R, but many struggled due to a lack of basic knowledge. In the future, I need to find a better balance between offering explanations and ensuring that students have the foundational understanding necessary to keep up with the course.

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

Strengths of the course:

The course structure is excellent for students who have previously taken an introductory statistics course. Significant time is dedicated to revisiting fundamental statistical concepts, which benefits those who are new to these ideas or need a refresher. At the same time, more advanced statistical techniques are introduced at a steady pace, providing a strong foundation for future learning and helping students understand the statistical aspects of current research.

The inclusion of daily lab sessions following the lectures is highly beneficial.

Additionally, each week concludes with an "assignment" featuring exercises similar to the exam questions. This approach effectively prepares students for the exam.

Weaknesses of the course:

The room is not well-suited for lectures, as students often need to work on their laptops, but the room lacks sufficient electrical sockets for them to use.

The two-hour lab sessions may be too short. Extending them to three hours would be a valuable improvement.

Students need a strong understanding of fundamental statistical concepts and solid knowledge of how to use R effectively before starting the course.

3. Other views

The students demonstrated strong dedication and took the course seriously.

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.)

Integrate R code into the lecture notes instead of providing it in a separate file, so students can make a better connection between the lecture topics and the R code explanations.

Students should have a stronger background in statistics before starting the course, or the course should be adjusted to a beginner level. Although the required knowledge was shared, few students seemed to pay attention. A short, non-graded self-assessment test, created by Pär Villner and available as "Biostatistics Course Self-Assessment," could help students check their readiness, but many didn't complete it. We may need to find a better way to make sure students take the test.

Appendices: