# Course analysis (course evaluation)

| Course code | Course title | Credits |
|---|---|---|
| 5BD003 | Study design and analysis in medical research | 7.5 |
| **Semester** (VT/HT-yr) | **Dates** | |
| HT-2025 | 3 nov 2025 – 18 januari 2026 | |

| Course Director | Examiner |
|---|---|
| Sandra Eloranta | Sandra Eloranta |
| **Teachers in charge of different parts of the course** | **Other participating teachers** |
| Marie Reilly, Stephen Nash, Hans Pettersson, Elizabeth Arkema | Several tutors (8 different people who helped with practical exercises and as moderators of the journal club) |

| Number of registered students at the 3-week check | Number passed at final course day | Response frequency course valuation survey |
|---|---|---|
| 34 | 21 passed<br>4 did not submit an exam<br>9 failed the final exam | **11 (approx. 33%)** |
| **Other methods for student influence** (in addition to the final course valuation/survey)<br>Course council | | |
| **Feedback reporting of the course evaluation results to the students**<br>This document will be put on the course web page. | | |

**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: 2026-02-24
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**1. Description of any changes implemented since the previous course occasion based on the views of former students**

This was the first time the course was given.

**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.)*

The course evaluation was completed by only 11 students (approx. 33%). This is also the approximate number of students who regularly attended the lectures during the course. One comment suggested that the generally low attendance might be due to higher workload in other courses and lack of time for the master thesis preparation.

In general the course scored high on overall satisfaction (mean 5.4), inclusion (mean 5.6) and possibility for active participation (mean 5.7). Noone scored 3 or lower on any of these three dimensions.

In terms of free text answers, the comments were generally positive (in particularly with respect to the RCT part of the course) and constructive. Several students commented on the last part of the course (a journal club and assignment 3) which were scheduled after the Christmas break (as well as after completetion of the take-home exam). Some indicated that the assigmentment motivated them for the final mandatory session, whereas other students indicated that the workload for this particular question exceeded what they had anticipated.

Several students reported that the workload during the first 3 weeks of the course (observational study design) had been too high. It is, however, not clear if it indeed exceeded the 10-12 hours of study time that is allocated (and expected) for work outside the classroom.

The students reported some overlap between the courses, as well as between different blocks during the course.

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

*Strengths of the course:*

This is a broad course providing an introduction to several key areas (experimental designs, observational designs, RCTs and systematic reviews). Each of these topics could easily be expanded into a 7.5 point course in its own right. In that perspective it seems that we have been able to deliver a course where the flow between these areas and the coverage of key topics has worked well. Each block was taught by a different teacher with domain expertise in their respective field. The mixed competence faculty is a major strength of this course. The assignments and take-home exam were constructed to mimic realistic tasks that statisticians are expected to master after having completed a degree at this academic level. Also, the assignments covered a range of teaching methods (individual written assignment with formative feedback, group work with oral presentation, journal club with a flipped classroom element).

*Weaknesses of the course:*

The course faculty were surprised by the low attendance throughout the course and concerned how this would affect the learning and final outcome of the course as this is a course where the students would truly benefit from discussions with the teacher and each other. In hindsight, more lectures should have been mandatory, especially for session where the teaching methods demanded active participation in order to be truly beneficial.
Almost 3 weeks of the course includes the Christmas period when many students were travelling and/or preparing for exams in the courses that ran in parallell. The last week of the course also coincided with the "exam period" which was a concern for several students.
A main challenge preparing this course was that we were given schedule slots that remained after KTH and SU had finalised their schedules. This resulted in morning sessions exclusively (which the students reported being one reason for not attending the lectures when asked during the course council).

### 3. Other views

As course director, I became aware that the structure of assignment 1 and the take-home exam became both time consuming and challenging to mark due to the widespread use of AI-tools. As much as the students prefer using these tools it was evident from the AI declarations that the

teacher spent a lot of time correcting text from LLMs. For example, the reports contained many examples of methods and designs that have not been discussed in this or the other biostatistics courses in the program.

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

There will be several changes to the course next year.

- The observational study design block will be modified to remove repetition and to remove some recommended (non-compulsory reading).
- The observational part of the take-home exam (i.e completing a statistical analysis plan, SAP) will remain but in the form of an assignment that runs over 3 weeks (multiple hand in deadlines) accompanied with formative feedback to better convey the level of formality that is required to write a SAP.
- The meta analysis part of the course will likely not be included next year. Instead, one more week will be added to cover experimental designs.
- The final exam will be changed into a written exam (3-5h without access to the internet but with possibility to bring some of the course material). This exam will take place during the last week of the course.
- The modules on Canvas will be revamped to make it easier to navigate the material for the students

Overall, as course director, I am content with the first round of this course. I believe the course council and the course evaluation have given several ideas for improvement. Albeit being more or less math- and programming-free, this course is more challenging than the students perhaps thought when starting it. Nine students failed the take-home exam, which is more than we have seen in other courses at KI that are part of this program. Marks were mostly lost due to lack of understanding of fundamental topics, or lack of formality in the description of the design and analysis. Whilst not being a math exam, the task requires clarity and exactness in presentation of e.g hypothesis, choice of statistical method, planned tests and statistical  assumptions. This will be emphasised more and illlustrated with even more concrete examples next year.

## Appendices:

None