

Course analysis DD2435/FDD3435 HT23 Mathematical Modelling of Biological Systems

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Description of the course evaluation process

The course evaluation was initiated in due time via Course evaluation tool on the Course Social page for the duration of two weeks. Evaluation was anonymous giving students possibility to freely express their opinions.

Description of meetings with students

Students had opportunity to ask questions and discuss the course organization before the lecture start and during the breaks in the middle of the lecture. Teachers were always accessible via email as well as zoom.

Course design

Course structure remain unchanged which includes lectures 1-8 and laboratories 1-3 contributing to the written examination in period 1, as well as two additional lectures, one laboratory and an independent work on a research project (a reading project or a small modelling study) in period 2. Laboratories are programming and simulation exercises performed by the students on their own. Executable files for the labs are available on EECS machines in the computer rooms or remotely over the network. Course content is distributed between three teachers, Alexander Kozlov, Erik Fransén and Arvind Kumar, each teaching within the areas of their expertise.

Students' workload

Estimated time spent by the students for the course of 6-14 hours/week, mean 9 hours/week, is evaluated as adequate with sufficient time dedicated to laboratory works. Labs are perceived as the most time consuming part although the teachers have a feeling that students may have spent a bit more time on reading before and after the lectures.

Students' results on the course

Students' performance at the written examination was evenly distributed with equal shares of A-B and C-E grades.

Students' answers to open questions

Students find the course content interesting and inspiring in general.

Summary of students' opinions

Students' evaluation of the course is generally positive. Certain difficulties were caused by the split of the course to two periods when some students had hard time planning for laboratory and a project simultaneously in period 2.

Overall impression

The course is well balanced, stable and mature by the impression of the teachers and students. The most part of the course is made of the classic introductory material to the fields of computational neuroscience and biological modelling. Nevertheless, several topics need to be updated with respect to the modern development of the research areas, in particular, the list of the recommended reading for students' research projects.

Best Aspects of the Course

1. Workload Management: Students appreciated the manageable workload, highlighting it as a unique and positive feature.

2. Lab Sessions: Labs were frequently mentioned as engaging and effective tools for learning through experimentation.
3. Lecture Examples: Examples provided during lectures were noted as helpful for understanding concepts.
4. Comprehensive Introduction: The course offered a broad overview of computational neuroscience, which was well-received.

Suggestions for Improvement

1. Lecture Continuity: Several students felt the lectures lacked coherence, often seeming like a collection of loosely related topics.
2. Applied Focus: Students suggested incorporating more practical applications and aligning labs more closely with the lecture content.
3. More Examples and Clarity: Additional examples in the first part of the course and clearer assignment guidelines were recommended.
4. Technical Accessibility: Some students faced difficulties accessing lab tools and libraries, suggesting better support for these issues.
5. Modeling Practice: Opportunities to practice modeling tasks (e.g., exam-style problems) before the exam were requested.

Analysis

Not all students realized that the material included in laboratories 1-3 during period 1 is not completely covered in lectures and must be studied independently on one's own. Students tried to optimize their workload and tended to split their responsibilities during preparation of the lab reports. This led to omission of some material not present in lectures. No gender preferences were noted. No students with reading or attention disabilities were participated in this course round.

Prioritized course development

The main goal for the next course round should be development and gradual replacement of the laboratory works with stronger emphasis to portability, accessibility and documentation.

Other information

N/A