Kursrapport MM5022 HT23 period AB

Antal respondenter: 2
Antal svar: 1
Svarsfrekvens: 50,00 %

. Beskrivning av kursupplägget.

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Analytic functions of a single complex variable; integration and Cauchy's theorem; expansions of analytic functions in power series and Laurent series; residues; conformal mappings; harmonic functions; physical applications; a brief look at analytic functions of several complex variables

. Kursens fördelar, beakta studenternas uppfattning i kursutvärderingar.

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Generally, students found the material interesting.

Students appreciated the bonus point system. This put more weight on homework compared to the exam. I intended some of the homework as a way to explore additional material, which some students enjoyed. Others were more interested in reinforcing the skills they would need for the exam, and found a lot of the homework irrelevant. I do not see this as a problem -- the nature of bonus points is that there is no penalty if students do not do the work, only a reward for those who do.

It was a conscious decision on my part to write my own lecture notes, and follow the textbook less closely. Asked what was best about the course, four students left positive comments about the notes. One student wrote "Perspectives different from the book was brought up which helped a better and broader understanding". My feeling is that the book is suited for students in physics or electrical engineering, with a focus on calculation. I wanted to teach more of a proof-based course in mathematics, with a focus on concepts. From the evaluation, and similar comments during the course, I get the impression that this was a benefit for many students. However, others would have preferred the course to stay close to a textbook.

. Kursens nackdelar, beakta studenternas uppfattning i kursutvärderingar.

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Around half the students felt that the exam was too difficult, or that it did not really test how well they achieved the intended outcomes. Out of 17 who answered this question on the evaluation, 9 students answered the lowest options 1 or 2. My hope was that a hard exam would better show what students know or do not know. Some tasks were designed to test how well students could reason in a new situation. I also felt the exam should be somewhat more difficult than usual because many students would be getting bonus points. However, I can understand how this exam must have been painful for students who expected something more like their previous courses.

Another negative aspect of the course was expressed by one student who said "I feel like the exam and homework wanted to be one thing, and the coursebook another thing". I agree that the lectures, the exercise sessions, the homework assignments, and the coursebook could have been better synchronized. The exercise sessions were based on the coursebook, whereas the lectures followed a different presentation. Sometimes this meant the topics were out of sync by a week or so.

Prerequisities can be challenging for this course. Some of the students had already seen some background from real analysis or topology. Others had only seen calculus and linear algebra. I tried to review whatever we needed, but it was probably not enough. Doing more review in exercise sessions could have helped.

. Slutsatser samt förslag till förbättringar.

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In the long term, I would like to see the course change more toward a proof-heavy mathematics course using a different textbook. Students should take a course in real analysis first. As one student commented, "For this difficulty another course book would be needed."

In the short term, in any approach, one area for improvement is the coordination between the lectures and the exercise sessions.

Students would appreciate more detailed guidance about how to study for the exam or what it will cover. It would also help to review past exams during multiple exercise sessions. This semester, we did that but only with one session and part of a lecture.

I chose to give traditional lectures, but sometimes the course is taught as a flipped classroom. One student said they would have preferred that, and commented "The video material was excellent, except that the videos were in random order in the playlist on youtube". The strange order is something I noticed myself when I was preparing the course. I am not the owner of the playlist, but I hope the order can be corrected if other teachers decide to use the videos in the future. I would point out that students can watch the videos in the correct order on the Kurser page.