

Kursrapport MM5022 Mathematics III - Complex Analysis HT25

Antal respondenter: 1
Antal svar: 1
Svarsfrekvens: 100,00 %

. 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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The number of students reported that their satisfaction with the course was generally high.

Students perceived the course as highly relevant to the intended learning outcomes, and it succeeds in providing a theoretical foundation in complex analysis. The answers indicate strong appreciation for the teaching team, and their pedagogical efforts.

Instead of traditional bonus points, and having had bad experiences with the use of AI in other courses, we produced a lengthy list of exercises (aligned in difficulty with the challenging ones in the exam) that students were encouraged to work out in small groups, or individually, and were invited to ask for tips or feedback to lecturer and TA. The incitement to work on those is that was that at least one of those exercises would appear in the final exam (there were indeed one and half in the final exam). Students found that useful ("The parts of the exam that I had no trouble answering were those covered by the questions that I had time to go through in the two weeks I knew they existed").

Instead of the whiteboard, I used the document camera available in the classroom, to deliver the lecture. This allows the flexibility, of uploading, right after the lecture, the material covered during the session. This enabled me to follow the textbook less closely, and give some deeper hints with connections with other areas (such as with PDEs or Fourier Analysis). The course-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. Students praised, in their answers, the inherent beauty and depth of the subject and the emphasis on conceptual mathematical insight instead of calculations during our sessions.

Students felt the exam was well aligned with the learning outcome. Most students seem to find manageable the dedication to the course.

. Kursens nackdelar, beakta studenternas uppfattning i kursutvärderingar.

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The exam scheduling on a Saturday is a big con for students and teachers.

There is a collection of video material from an old instance of the course, which contents do not fully aligned with the layout we followed. The links to those videos were left as an extra support, but not as a substitution of lectures, as it is a campus course.

Many respondents selected "Don't know" regarding the TA, reflecting low attendance to tutorials. Nevertheless, those that attended, value very positively his efforts.

I attempted to include in the form of Quiz questions at the beginning of the course, giving students 10 minutes to discuss in small groups. This required students to prepare some questions that were previously sent out via the course-forum (along the lines of flipping system). After a few sessions, I decided to abandon that layout, as I could see a majority of the attendants not having prepared for the activity. It seems, though, that at least one student appreciated that, and would have liked to see more, and do that instead of traditional lectures.

A summary of how the different parts of the subject were connected, was produced in the last lecture, but some student missed that.

With the aim of encouraging attendance to the lectures, those files I produced with the notes were protected by a unique password, which was made public at the end of the corresponding lecture. That was a nuisance for some students, as it is reflected in the answers from the students. Nevertheless, the existence of the notes within the course material is appreciated. I think that introducing the material, my own way, benefited for many students. However, others would have preferred the course to stay close to a textbook.

I tried to establish an atmosphere where students would feel comfortable asking questions during lectures, but I experienced that my question would be met with silence. While some students claim that they silent because they were following ("Sorry to often being too silent, we just didn't have anything to complain about, everything was clear."), other point out difficulties on keeping the pace.

. Slutsatser samt förslag till förbättringar.

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I think that overall, the course went well, but I personally need to adjust the tempo of the lecture using slides, not to shadow the advantages of that layout.

I would like to continue developing the idea of a "bonus" system via voluntary homework (with the promise of at least one of the exercises on the list will appear in the exam). Nevertheless, I think it would be good for the students to have some "deadlines" along the course, where they can submit their attempted solutions (ideally developed in groups) and get feedback from the teachers.
