Kursrapport MM2002 HT20

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

. Beskrivning av kursupplägget.

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The course is the first part of the Matematik för Naturvetenkaper, and its contents cover the manipulative aspects of a first year preparatory course in mathematics for students in natural sciences. It spans aspects from both linear algebra, arithmetic and fundamentals of calculus in one and several variables.

The way the material is laid out, follows a spiral teaching approach.

. Kursens fördelar, beakta studenternas uppfattning i kursutvärderingar.

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The students praised highly the availability of video-material that would support their learning process. This was important for the students to help them in following the course asynchronously.

We introduced five seminar sessions in this first part of the course, as preparatory for the second part, where the students have seminars that follow the same layout of those in MMM2001. It was requested from Physics, that the students workload would not be significantly increased. To break the dynamics of student isolation, we decided to have a series of 5 seminar sessions where students would have to interact with each other to discuss mathematics.

Each session was focused on a particular pedagogical aspect and works around a mathematical problem for discussion:
1) Why (we should write mathematics)
2) How to write mathematics? (Six golden rules that a text should follow)
3) How to write mathematics (give-received feedback) and solve a mathematics problem (Polya 4 steps)
4) How to to solve a mathematics problem? (Polya 4 steps)
5) Some application of the contents of the course in Physics

Looking at those hand-ins in the second part of the course, I can see that these session had laid some serious foundations to build upon, and so we are being able to focus a bit more in the mathematical aspects of the topic (at least these first weeks of the course).

The work of the administration (Eva Nygren) during the course was superb, and beyond the call of duty. It is praised not only by the teachers in the course, but also, as reflected in their evaluations, by the students. Specially during this enforced distance teaching, her role on mediating the students in a timely manner, keeping a close contact with them, has had, in my opinion, a very positive impact in the course.

. Kursens nackdelar, beakta studenternas uppfattning i kursutvärderingar.

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The main con for this course, that has affected significantly students and teachers, is the forced distance mode.

A first year course at the university level is traditionally a difficult transition period for mathematically immature students. Under the pandemic situation, the difficulty to overcome has been higher than normal. Aside of the inherent difficulty of the subject, and the higher standards that university learning requires, the students had to overcome the imposed isolation.

All the attempts made by the teachers to break that (increase the student-student interaction with the seminars and break-out room activities) seemed to have little impact on the students, as the general attendance had been very low (we have been monitoring the attendance to Zoom meetings, and by the middle of the course, only around 20 students were regularly attending the lectures).

I was also personally affected by the distance mode, and this reflected on my teaching performance. I strongly believe that the social interaction is fundamental in the learning process of mathematics. In particular, it is important to establish fluent student-teacher, and student-student communications channels. I have been trying very hard to crack that nut during this course, but my attempts did not work this time.

All the usual tools that I have to foster and monitor the student teacher communication, based mainly on personal interaction, seemed useless in distance mode, and made me uncomfortable in my role as a lecturer. Besides, students did not feel confident enough for that interaction either, despite my efforts to make myself approachable and create a safe environment for that. My attempts to establish communication channels for the student-teacher (anonymous polls, activities involving breakout rooms discussions), were also generally met with general apathy and low participation.

I started the course in a mixed flipping system, with the hope that, in small discussion groups, students would feel more comfortable to work with each other. I was running some polls to measure the readiness of the students, and during the first weeks of the course only 1/3 or less of the students had reviewed the video material before the "lecture". We had a meeting with the "forumgrupp" (some sort of students-reps), where they requested to jump into a more traditional form of lecture. So we did, and students appreciated the change.

The students found very challenging my broken Swedish, as well as my handwritten style. Again, the electronic media does not help with it. I still have difficulties writing on the tablet while looking at the screen, and trying to have control on the chat in my other screen.

Students found specially difficult to be on top of the subject, but their preparation for the e-tentor had some special positive impact. One could see though a delay in their knowledge acquisition, that synchronized with those. The mathematical content of the seminar was essentially in synchrony with the course. In light of the previous comment, one can explain some of the students difficulties in discussing the topics during seminars.

It was observed, specially in the oral complements for the e-tentor, that there was a signifcant number of students that had cheated in solving those at home. This created some unnecessary use of teaching resources.

The exam for the theoretical part was a take-home, open book exam. Also, the fact that had to be answered also in WW, made that the problems in the exam had to be "parametrised". These factors raised the level of difficulty the final exam, although in the line of previous year exams and with contents covered in the available videomaterial. Nevertheless, some students seem to have had expected to have the same level of difficulty as the e-tentorna.

. Slutsatser samt förslag till förbättringar.

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The distance mode had a big impact on the teaching of this course, both from the student and the teacher's side. This requires all of us, teachers and students, to have a more pro-active role in the learning process.

I believe that a mixed flipped system would suit better the distance teaching mode, but this require students to try to keep the pace of the course, but this seems quite demanding from their part looking to the overall workload (with Physics and mathematics courses).

I think that this soft lay-out of the seminars, where we focus on how to write and present mathematics has some potential, but require some major adjustments to fit the layout of the course and the distance teaching mode. Nevertheless, I would really like it to be ran for a couple of times to be able to see, with a wider perspective whether it has any significant improvement in the presentation skills of the students. One could try to compare, for instance, the amount of times students need to revise their solutions to obtain a "Pass" in their hand-in in the seminars for the MM2001 and those in the MM4001, at least for the first weeks of the course.

Under the current circumstances, since prosecuting academic missconduct seems practically impossible, to reduce it, I think we shall put a limit to the amount of times a student can "re-takes" the oral "uppsamling" for e-tentor.

Looking at the comments, it looks really that I failed in my attempts to help them in their learning process. So, I would say that a change of lecturer for this course seems advisable.