Course Analysis for Classical Mechanics in FYSA01, VT 2019

Course responsible: Ruth Pöttgen
Other teachers: Lassana Ouattara

Number of students registered: 95
Number of replies to survey: 19

Course Representatives:
Andreas Evensen
Andrea Monzani

Grades: U: 31, G: 23, VG: 10

Analysis

A) Summary of Course Evaluations

A report summary is attached at the end of this document.
For most questions, the overall score is average, with a varying spread in the answers.

Generally, it can be said that among those who replied to the survey the least appreciated element of the course were the SI sessions. The lectures were evaluated slightly more positively, the lab exercises got the most positive evaluations. (This is somewhat at odds with what was revealed during the discussion among teachers and student representatives, namely that the labs were criticised a lot, mostly due to the lack of structure, unclear grading, large differences between the labs etc.) Both the book used and the examination were regarded as adequate.

A common (and the main) criticism expressed in the replies to the survey was a lack of structure, organisation and clear communication, in particular regarding the labs.
For the lectures, more demonstrations and experiments would be appreciated, as well as going beyond what is covered in the book.
Several respondents suggested to split the lectures into 2 mechanics + 2 electromagnetism per day, instead of 4 hours of one topic.
Some would prefer more challenging exercises with guidance how to solve them.
Several respondents said they had expected more help during the SI sessions.
The main reason for criticism of the exam was that one question was missing the information on the radius of the earth.

B) Comments/reflections from the teacher

The evaluation results were discussed together with the course representatives and J Knudsen. This discussion was very helpful in interpreting the outcome of the evaluation and completing the picture.

I was glad to hear that the course representatives found the questionnaire itself very good and covering all relevant aspects.

I fully agree that the organisation of the course as a whole and in particular the lab part was way too chaotic this term, but this was mostly related to major changes and reshuffling in the responsibilities for the teaching and people taking these responsibilities. Meaning it was not a problem intrinsic to the mechanics course, and it likely will not happen again, since next time everything should be more clear to everybody involved. It is, however, unfortunate that the students had to suffer from it. This should clearly be avoided in the future.

I also agree that more demonstrations should be integrated in the lectures. Personally, I am in favour of a 2+2 split of the lectures, simply because I think the teaching will become better if done in shorter sessions, but this depends also on the other teachers involved in the parallel courses. However, perhaps including more demonstrations in the lectures will already help.

Regarding the feedback on the SI sessions, this is something to be taken seriously, but I am also wondering if it was maybe an issue of the concept not becoming clear, i.e. a mismatch between expectations on the student and teacher side, respectively. Regardless, I am wondering if it would not be good to introduce hand-ins and exercise sessions to the course again.

For some of the other points, I believe it will not be easy to find a solution that everybody is happy with, as already in the questionnaire conflicting views were expressed. However, an attempt can certainly be made towards making the course useful and attractive for students at different levels.

One point that was not so prominent in the survey, but during the course, was the request for more previous exams with their solutions. This is something I do not see the benefit for the students of. I understand that having a few examples is useful to get an impression what a typical exam looks like in terms of length, types and difficulties of questions, variety of topics etc., but I do not think that having a large number of old exams is helpful, especially since there are plenty of exercises that can be used for practicing in the book. Studying the old exams to me has no benefit for achieving the learning outcomes of the course.

C) Evaluation of changes since the course was given last

The main change in the course this time was how the labs were organised. This was, however, not specific to the mechanics course, but to the whole first part of FYSA01. I personally was not involved in the discussions that led to this change, but I understood that it was a reaction to student feedback from previous years that said four labs with reports was too much stress.
While the students this term seemed to generally appreciate the labs themselves, the organisation was unclear to students as well as lab supervisors and teachers, which apparently and understandably led to confusion and frustration on all sides. This certainly needs to be improved. In particular, the grading for the labs without a report was too unclear and differed too much between the labs.

D) Suggestions for modifications and measures until next time the course is given (VT2020)

The first-year course is currently undergoing a restructuring, so some changes will happen independent of this evaluation.
I'd like, however, to take up several of the suggestions made in the comments in the survey and

during the discussion with the course representatives.
Some of these will require agreements with the teachers in other parts of the course, though.

I agree with the students that we need to take more care with the overall organisation of the course. It is somewhat special with the division in several subcourses, that are mostly independent, but then there are some moments of the course that are common for several or all subcourses, like for example the introduction to labs. I will strive to work more closely together with other teachers on the course to make sure the overall structure is clear to us, the students, and the lab supervisors. One thing to be discussed with the other teachers is also if we should split the lectures differently, instead of having 4h lectures on the same topic having 2+2 on different topics, for example.

Specific to the mechanics, I will work on making my lectures less tightly connected to the book, try to incorporate demonstrations/experiments and more examples in the lectures. For the latter, I am going to consult with Stanley Micklavzina during his sabbatical at LU, and Tomas Brage who is the course responsible for the autumn term.
I also aim to prepare the exams even more carefully to prevent confusion about the questions during the exam.

For the next time I am responsible for this course, I would like to have a series of hand-in exercises that the students can do to practice solving problems, presenting their solutions in a way that is understandable to others, and to monitor their progress and understanding. These exercise sheets could include a range of difficulty levels so that students can choose their challenges. The hand-ins will be voluntary, but bonus points for the exam can be gathered. The exercises should be corrected by teaching assistants (Ph.D. students) and the corrections and solutions should then be discussed in exercise sessions with groups of preferably not more than 20 students. These sessions can also be used to complement the lectures and discuss any questions the students have. This of course requires resources in the form of teaching assistants and rooms for the exercise sessions, so I will have to see if that can be arranged.