



Report - SG1120 - 2019-04-01

Respondents: 1
Answer Count: 1
Answer Frequency: 100.00 %

Please note that there is only one respondent to this form: the person that performs the course analysis.

Course analysis carried out by (name, e-mail):

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COURSE DESIGN

Briefly describe the course design (learning activities, examinations) and any changes that have been implemented since the last course offering.

The course is on basic Mechanics, a general introduction to methods from physics and engineering for the first year of engineering students. We typically have three sessions of 2 hours per week: two of them are theory lessons (föreläsning) and the third one is a practice session.

There are three types of practice sessions:

- Problem solving (övning): here the teacher solves different problems on the board, and the students are given the chance to participate, ask questions and interact with each other to contribute towards the problem solving.
- Seminar (seminarium): here the students prepare problem solutions before the class and submit them online. Then they can present those solutions in teams, in front of the class, and the teacher asks questions about the solution process and interpretation of the results. The submitted solutions and presentations are evaluated by the teacher, and the students get a Pass/Fail grade which corresponds to 1.5 hp out of the total of 9 from the course. This is a necessary condition to pass the course.
- Workshop: here the students have the opportunity to work on previous exams and sample problems, individually or in groups, and they can ask questions and discuss with the teacher.

The evaluation consists of three parts: seminars (1.5 hp), theory (3 hp) and problems (4.5 hp). In addition to the seminars described above, the other two parts of the evaluation are carried out as follows:

- Theory (teoridel): there are two partial exams (kontrollskrivning) during the course, which the students can take in order to complete the theory part of their grade. If they reach a minimum grade (6/16) they pass this part of the evaluation. If not, they need to solve a theory part of the final exam (tenta). They are free to anyway solve the theory part of the final exam in order to increase their theory grade (the highest of the theory grades will be assigned to the student).
 - Final exam (tenta: teoridel och problemdel): as stated above, the students are free to solve the theory part of the final exam to compensate or increase their theory grade. Additionally, the final exam includes 4 problems to be solved by the students. This is the problems part of the exam, which constitutes 4.5 out of the 9 credits in the course.
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THE STUDENT'S WORKLOAD

Does the students' workload correspond to the expected level (40 hours/1.5 credits)? If there is a significant deviation from the expected, what can be the reason?

This course has a total of 9 credits, equivalent to 240 h of work. Based on the answers from the students, the majority of them are within 12 h of work per week approximately including the lectures. There are 13 weeks of lectures, plus a couple of weeks without lectures for them to prepare exercises and another week before the final exams, so one can estimate a total of 16 weeks. This means that, in order to reach the 240 hours, they would need to work around 15 h per week, slightly above what they are currently spending.

This is an interesting observation, and it essentially highlights that we need to convey, in a better way, that they need to spend time on their own working on problem solving and asking questions when they do not understand certain concepts.



THE STUDENTS' RESULTS

How well have the students succeeded on the course? If there are significant differences compared to previous course offerings, what can be the reason?

Out of the students who took the final exam, 84% passed the course. Note that this course has been slightly modified this year, and it is not similar to the Mechanics I courses given in other programs (such as Engineering Mechanics or Vehicle Engineering). The percentage is similar to the one observed during previous years of this course, and also consistent with what is observed in the Engineering Mechanics and Vehicle Engineering programs. More than half of the students (58%) pass the course with a D or an E; then 17% obtained a C and 9% a B. Unfortunately this year nobody obtained an A, although this is also due to the fact that the group is relatively smaller than others programs (42 people took the final exam). One student had an A in theory and a B in problems, which finally gave him a B in the course. But if this student had obtained an A then 2.5% of the students would have received the highest grade, a number not far from the one in other programs. Therefore, the results can be considered as been within the normal bounds of what is observed in this course.

OVERALL IMPRESSION OF THE LEARNING ENVIRONMENT

What is your overall impression of the learning environment in the polar diagrams, for example in terms of the students' experience of meaningfulness, comprehensibility and manageability? If there are significant differences between different groups of students, what can be the reason?

Most of the students thought that they worked with interesting problems and examples, although regarding the difficulty there is a split: whereas some think that the difficulty was acceptable, some others found the course hard. Some of them complain about the book, which can certainly be complemented with additional notes. It is also important to highlight that some of the students stating that the course was difficult spent fewer hours than necessary to complete the 9 hp. Most of the students had very positive comments towards the instructor, and highlighted that he was helpful and made the course more meaningful.

ANALYSIS OF THE LEARNING ENVIRONMENT

Can you identify some stronger or weaker areas of the learning environment in the polar diagram - or in the response to each statement - respectively? Do they have an explanation?

It appears that the stronger areas are related to the meaningful examples, the course organization and structure and the activities for collaboration as well as to get support.

On the negative side, one should probably spend more time providing support for the problems, complementing the content of the book and also reformulating some of the aspects that appear to be more difficult for the students.

ANSWERS TO OPEN QUESTIONS

What emerges in the students' answers to the open questions? Is there any good advice to future course participants that you want to pass on?

As stated above, it appears that the students found the course difficult, but appreciated the help of the instructor. They could get good answers to their questions, and the course material was properly organized.

From the answers, it is clear that the course is challenging. A recurring matter is the issue of the course being split into two parts, with the Christmas break right at the middle. This should probably be discuss in the future.

PRIORITY COURSE DEVELOPMENT

What aspects of the course should primarily be developed? How could these aspects be developed in the short or long term?

I think that a good strategy would be to have more workshops/interactive sessions, and that could be developed in the short term. One could probably have just 2 seminars and 3 workshops, and go deeper into some of the problem-solving strategies. Perhaps also some of the övningar can be split, so in one group the instructor solves the problems, whereas in the other one the students take a more active role.

Furthermore, some ideas related to active learning could be added, such as questionnaires related to audiovisual material or additional reading activities for discussion.

OTHER INFORMATION

Is there anything else you would like to add?

This was a very good experience giving the course for the first time, and the feedback from the students in overall positive. The points of improvement will be adopted and implemented in the next years.