

Report - SG1102 - 2024-04-26

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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DESCRIPTION OF THE COURSE EVALUATION PROCESS

Describe the course evaluation process. Describe how all students have been given the possibility to give their opinions on the course. Describe how aspects regarding gender, and disabled students are investigated.

The course was evaluated by participating to the meetings with the student representatives and through the LEQ survey conducted after the examination (period 3, VT2024). The LEQ survey was open for 3 weeks after examination.
The response rate on the LEQ survey was 14.53% (VT2024, 17 students that answered to the survey out of 117 registered students in total), slightly lower higher than VT2023 (16.8%).

DESCRIPTION OF MEETINGS WITH STUDENTS

Describe which meetings that has been arranged with students during the course and after its completion. (The outcomes of these meetings should be reported under 7, below.)

Energy and Environment (CENMIs) usually organizes preparatory and follow-up meetings (so-called "link-meetings/länkmöter") with the student representatives and fellow faculty during the Spring Semester. I had a meeting that involved the student representatives on 2024/03 /05. The student representatives a-priori prepared for the meeting by collecting feedback from their fellow students regarding the course activities (lectures, exercises, Canvas quizzes, examination: KS1 & KS2).
Feedback from the students has been received with respect to the course activities including lectures, teaching method, exercise sessions and the mid-term examinations.

COURSE DESIGN

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

Lectures/Föreläsningar (in person, KTH campus) 15 x 2h

- The lectures combine elements of theory including derivations, concrete examples where problems/exercises are resolved, and Peer Instruction (kamratlärande på svenska) elements (by generating an environment for students to interact, discuss, and analyze multiple choice questions posed during the lecture; clickers are used by students to answer to questions and the teacher has the possibility to analyze the answers and the statistics gathered via clickers).
- It has been emphasized to the students the importance of reading the course material prior to the lecture.
- The sections in the book recommended to be read by the students are specified in the course program.
- Lecture notes were provided on the course's website.
- Particular exercises from the course book were suggested as homework to the students for complementing the course material discussed in the class-room.
- The exercise sessions were offered on Campus.

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Exercise sessions/Övningar (on KTH Campus) 7 x 2h

Vid övningarna tränar studenterna att på egen hand lösa uppgifter av den typen som kommer på problemdelen på tentamen. Ett aktivt deltagande på övningarna ökar därmed chanserna att klara problemdelen.

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Practice quizzes on Canvas

- Multiple-choice questions/quizzes in Canvas learning management system are implemented for SG1102 (since VT20). A quiz corresponding to a particular chapter is made public after that chapter is covered during the lectures. No grades are given. This allow SG1102 students to practice on-line tests/quizzes based on multiple-choice questions using the Canvas platform and thus dedicate more time on task. Moreover, this stimulates continuous learning during the course.

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Examination: Inlämningsuppgifter (INL1 & INL2, 1.5 hp)

- Dessa är obligatoriska och godkända inlämningsuppgifter ger 1,5 kurspoäng.
- INL1 & INL2 were submitted by students on Canvas and corrected by examiner using SpeedGrader function for a rapid feedback to the students.

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Examination: Teoritentamen/ 2 Kontrollskrivningar KS1 & KS2 (TENB, 1.5 hp)

Sluttentamen består av två delar: en "teoridel" (TENB) och en "problemdel" (TENC). "Teoridelen" examinerar studenternas konceptuella förståelse av mekanik och kan examineras innan sluttentamen genom kontrollskrivningar (KS:ar). Även om studenten har klarat "teoridelen" på tentamen genom KS:arna så har studenten rätt att skriva den delen på sluttentamen för att kunna förbättra sitt resultat. Det gynnsammaste resultatet är det som räknas för slutbetyget.

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Examination: Problemdel, Tentamen (TENC, 3.0 hp) Sluttentamen innehåller en problemdel där studentens förmåga att individuellt lösa mekanikproblem examineras.

THE STUDENTS' 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?

SG1102

The expected students' workload level is 160 hours over 9 weeks (15-17 hours of studying/week).

18-23 hours/week

VT17 / VT18 / VT19 / VT20 / VT21 / VT22 / VT23 / VT24
20% / 7.4% / 11.5% / 11.2% / 16.6% / 6.7% / 12.5% / 18.7%

15-17 hours/week

VT17 / VT18 / VT19 / VT20 / VT21 / VT22 / VT23 / VT24
11.4% / 11.1% / 19.2% / 11.1% / 8.3% / 6.7% / 12.5% / 6.2%

12-14 hours/week

VT17 / VT18 / VT19 / VT20 / VT21 / VT22 / VT23 / VT24
11.4% / 7.4% / 19.2% / 0% / 25% / 0.0% / 6.2% / 18.8%

9-11 hours /week

VT17 / VT18 / VT19 / VT20 / VT21 / VT22 / VT23 / VT24
20,0% / 40.7% / 23.1% / 22.2% / 29.2% / 46.7% / 50% / 18.8%

6-8 hours /week

VT17 / VT18 / VT19 / VT20 / VT21 / VT22 / VT23 / VT24
14,3% / 22.2% / 23.1% / 33.3% / 12.5% / 20% / 12.5% / 31.2%

below 5 hours /week

VT17 / VT18 / VT19 / VT20 / VT21 / VT22 / VT23 / VT24
14,3% / 11.1% / 3.8% / 16.7% / 8.4% / 20% / 6.2% / 6.2%

24.9% of the students participating in the poll work with course related activities for more than 15 hours per week during VT24. This is the same level as during the year before, VT23, and with 11% more than during VT22. This is positive, confirming the fact that the students are re-adjusting to the routines prior to Covid-19 pandemic.

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?

70 students (approximately 77% of first time registered students) obtained grades between A-E and passed the course. This is aligned with the previous years.

8.7% had E grades

45% of the students had C & D grades

13.1% had B grades

9% obtained "A" grades (cca. 6% more than VT23).

Students comments:

- Det var tydligt sedan början hur betygsättningen sattes enligt den matris som stod i kursplanen, mycket tydligt och bra.
 - Flervariabeln har tagit mycket tid denna period men jag har tänkt lite på mekaniken också.
 - Bra med KS:ar som fokuserade på teori och sedan TENC som fokuserade på problemlösning.
 - bra med peer review frågor där man kan svara anonymt, liksom quiz.
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STUDENTS' ANSWERS TO OPEN QUESTIONS

What does students say in response to the open questions?

Below are some of the students responses to the open questions.

What was the best aspect of the course?

- Tycker det var mycket tillfredställande att se en så tydlig koppling mellan linjär algebra, flervariabelanalys och mekanik. Tycker också Mihai är en bra föreläsare och det märks att han tycker det är kul att lära ut.
- Många konkreta exempel, mycket givande.
- Olika sätt att lära sig och delta i kursen.
- Gillade upplägget med peer instructions mycket.
- Väldigt bra föreläsningar där vi fick vara delaktiga och svara på frågor för att både vi och läraren kunde se vad vi kunde och behövde gå igenom mer. Jag tyckte om att det fanns quiz som man kunde öva på.
- Det bästa. med kursen alla quiz och att man kunde göra teoridelen av tentan innan själva tentan för att eventuellt klara denna i förväg. Quizen var bra riktade till teoridelen och stämde överens med tentan. Det var även ett stort plus att man kunde göra om dem flera gånger.
- engagerad lärare som försökte förklara svåra sektioner på ett pedagogiskt sätt. Han var mån om att studenterna skulle förstå. * bra med peer review frågor under lektionerna och viktigt att man kan svara anonymt, pga få vill verka tröga framför andra. också bra att förklara varför vissa alternativ är rätt/fel. Bra med quiz där man får testa sig själv inför KS och inför att räkna uppgifter. * bra tillgång till gamla KS:ar och tentor * trevlig och kompetent lärare som försöker hjälpa till så mycket det går.
- bra examinationsformat.

What would you suggest to improve?

- Ha längre avstånd mellan INL1 och INL2, kanske flytta fram INL1 någon vecka?
- Jag tycker att i tentan skulle man kunna behöva använda någon sorts formelblad.
- skulle vara gynnsamt med tex labbar så man förstod räkneexempel bättre. Tex någon labb om fjäderkonstanten etc.
- Eventuellt lite mindre fokus på att härleda formler och istället lite mer tid till exempel på hur och när de används.
- Jag hade också önskat att vi skulle räknat mer tillsammans på tavlan. Den sista föreläsningen som bara bestod av räkning var bra!

What advice would you like to give to future participants?

- Plugga ständigt i kursen tidigt. Se till att behärska de tidigare kapitlarna tidigt innan det är dags för tentan.
- Delta på föreläsningar, gör quizen, gör uppgifter från boken. Men framförallt börja titta på gamla tentatal tidigt. Upplevde att det var lite skillnad på tentauppgifterna och bokens uppgifter, så bättre att få en känsla över hur tentatalen ser ut.
- Gör uppgifter kontinuerligt. sammanfatta teorin efter varje vecka; arbeta regelbundet, kämpa på med kursen. skriv ned centrala begrepp, räkna i boken och gamla tentor.
- Gå på all schemalagd undervisning för jag lärde mig väldigt mycket på den. Läs i boken innan föreläsningen för då är det lättare att hänga med. Gör gamla ks och tentor för det lär man sig mycket av.
- häng med i kursen från början. Det är jättehögt tempo och gäller att man lägger ner mycket tid från start för att hänga med. Föreläsningarna som finns inspelade är kanon och kan verkligen rekommendera dem starkt.

SUMMARY OF STUDENTS' OPINIONS

Summarize the outcome of the questionnaire, as well as opinions emerging at meetings with students.

The feedback from the course survey and that received during the face-to-face meeting with the student representatives agree on all points. The students' results were in line with previous course offerings (prior to Covid-19 pandemic) and the received evaluations were in general very positive.

The students participating in the survey felt togetherness with others on the course and thought that the atmosphere on the course was open and inclusive. The students participating in the survey were able to learn from concrete examples that they could relate to and understanding of key concepts had high priority. They could practice and receive feedback without being graded (using the Quizzes on Canvas). They were active outside of the class room, spending time on tasks given, i.e. quizzes implemented on Canvas (using Möbius, one quiz with 8 questions per chapter), INL1 & INL2. The quizzes on Canvas were intended for students to practice without being graded. 75% of the students participating in the evaluation believe that the assessment of the course was fair and honest and that the course activities enabled them to learn in different ways. The students believed that the course was challenging in a stimulating way and they felt togetherness with others on the course. They believe that the course was organized in a way that supported their learning.

OVERALL IMPRESSION

Summarize the teachers' overall impressions of the course offering in relation to students' results and their evaluation of the course, as well as in relation to the changes implemented since last course offering.

Most of the students managed to complete the elements that were included in the course. The results are in line with what was expected. The problem exam part (TENC) is usually the most difficult to handle. The on-line quizzes implemented on Canvas for SG1102 were highly appreciated by students. The exercise sessions were appreciated as well. The materials available on Canvas (including the recorded lectures and exercise sessions) were considered useful. The fact that the students can pass the theory part by completing KS1 and KS2 has been appreciated by the course participants. The examples and problems resolved during the lectures were appreciated.

ANALYSIS

Is it possible to identify stronger and weaker areas in the learning environment based on the information you have gathered during the evaluation and analysis process? What can the reason for these be? Are there significant difference in experience between:

- students identifying as female and male?
- international and national students?
- students with or without disabilities?

Strong areas: Most of the participating students in this survey found the course challenging in a stimulating way, they were able to learn from concrete examples; they felt togetherness with others and the atmosphere was open and inclusive. Most of them felt that they could practice and receive feedback without being graded (e.g., via Quizzes). The assessment on the course was fair and honest. They were able to learn by collaborating and discussing with others and were able to get support if needed.

Weak areas: The students participating in the evaluation believe that they didn't had many opportunities to influence the course activities. Based on the survey, there are no significant differences between students identifying as female/male, international/national students or students with/without disabilities.

PRIORITIZED COURSE DEVELOPMENT

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

A balance have been found between the theory presented, derivations, exercises, examples, and peer-instruction type of questions. Even if the teaching is on campus, on Canvas there are links to recorded lectures available as complementing material to the in-class lectures.