

Report - SG1102 - 2022-05-09

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). The LEQ survey is open for cca. 3 weeks after examination. The response rate on the LEQ survey was 14.7% (VT2022), lower than during VT2021 (21.24%).

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) programme-wide meetings (31/08/2021).

Tasks: introduce the SG1102-"Mechanics I/Mekanik Mindre Kurs" (main content, prerequisites, industrial applications, course format, pedagogical methods, examination, literature) to the first year students and to the fellow faculty active in parallel courses within CENMIs programme.

Energy and Environment (CENMIs) preparatory and follow-up meetings (so-called "link-meetings/länkmöter") with the student representatives and fellow faculty during the Spring Semester. Last meeting: 26/01/2022, KTH.

Responsible teachers from all parallel courses coordinate with each other and in consultation with the student representatives on how the course activities are distributed during the semester. Moreover, during the "link-meetings" feedback from the students is received with respect to the course activities including lectures, teaching method, exercise sessions and the mid-term examinations. The student representative gather information from fellow students also via social media platforms (for example Facebook).

Coordinators: Patrik Hilber (Program Director, Energy and Environment BSc and MSc program, hilber@kth.se).

COURSE DESIGN

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

The lectures have been given on-line using Zoom platform due to the Covid-19 pandemic.

The exercise sessions were given hybrid (on Campus & Zoom)

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

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Lectures/Föreläsningar (via Zoom)

15 x 2h

Föreläsningarna i kursen är organiserade enligt undervisningsmetoden Peer Instruction (kamratlärande på svenska).

- 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.

- The peer-instruction based lectures were complemented with an overview on the theory to refresh the information already read by the students prior to the lectures and with examples where problems/exercises were resolved. 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 peer-instruction based lectures were given digital, using Zoom. Break-out rooms were generated to create an environment for students to interact, discuss, and analyze the questions (multiple choice) posed during the lecture.

- The exercise sessions were offered on Campus with the possibility to join also via Zoom.

- Pre-recorded lectures from N. Apazidis were provided to the students via Canvas to complement the peer-instruction based lectures. The recommendation has been to visualize them before the peer-instruction based lectures.

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Exercise sessions/Övningar (on KTH Campus AND digital using Zoom)

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 allows 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 slutförslaget.

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Examination: Problemdel, Tentamen (TENC, 3.0 hp)

Sluttentamen innehåller en problemdel där studentens förmåga att individuellt lösa mekanikproblem examineras.

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Changes from the last course offering are summarized below.

- The exercise sessions were offered on Campus AND Digital (via Zoom).

- Pre-recorded lectures (not peer-instruction based) were provided to the students via Canvas to complement the peer-instruction based lectures. The recommendation has been to visualize each of them before the peer-instruction based lectures.

- INL1 & INL2 were submitted by students on Canvas and corrected by examiner using SpeedGrader function for a rapid feedback to the students.

- KS1 & KS2 (TENB, during the course): Quizzes on Canvas; multiple-choice questions; answers automatically corrected in Canvas (with direct feedback to students)

- The final course examination (TENB & TENC) has been on Campus.

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 kurs, 6 hp
Expected students' workload level: 160 hours over 9 weeks (15-17 hours of studying/week)
Antal responder: 109
Antal svar: 16
Svarsfrekvens: 14.68%

18-23 hours/week
VT17 / VT18 / VT19 / VT20 / VT21 / VT22
20.0% / 7.4% / 11.5% / 11.2% / 16.6% / 6.7%

15-17 hours/week
VT17 / VT18 / VT19 / VT20 / VT21 / VT22
11.4% / 11.1% / 19.2% / 11.1% / 8.3% / 6.7%

12-14 hours/week
VT17 / VT18 / VT19 / VT20 / VT21 / VT22
11.4% / 7.4% / 19.2% / 0% / 25% / 0%

9-11 hours /week
VT17 / VT18 / VT19 / VT20 / VT21 / VT22
20.0% / 40.7% / 23.1% / 22.2% / 29.2% / 46.7%

6-8 hours /week
VT17 / VT18 / VT19 / VT20 / VT21 / VT22
14.3% / 22.2% / 23.1% / 33.3% / 12.5% / 20%

below 5 hours /week
VT17 / VT18 / VT19 / VT20 / VT21 / VT22
14.3% / 11.1% / 3.8% / 16.7% / 8.4% / 20%

13.4% of the students participating in the poll worked more than 15 hours per week during VT22 less than VT21 (24.5% work more than 15 hours/week during VT2021).

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?

Approximately 75% of first-time registered students obtained grades between A-E. This is aligned with the previous years.
About 7% of students obtained an "A" grade; this is a lower number as compared with the previous years.

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?

De förinspelade videoföreläsningarna av Apazidits var fantastiskt bra, och jag hoppas att dessa är tillgängliga i framtiden även om kursen skulle genomföras på plats eftersom de är ett väldigt bra komplement till live-föreläsningar. Särskilt bra är dessa för repetition inför tentamen ifall studenten missat någon aspekt.

Det är ett intressant ämne, och spännande att lära sig mer om.

Att KS var relativt bra utformade, där konceptet var bra.

Att övningarna var i lugnt tempo. Att det finns KSar.

Mihai var en väldigt trevlig föreläsare. Man kunde alltid komma med frågor om man undrade över något. Jag uppskattade verkligen att vi delades in i grupper under föreläsningarna och fick diskutera. Om vi inte var inne på rätt spår på frågan kunde Mihai hjälpa oss på ett bra sätt.

Det bästa med kursen var att kunna gå in på mekanik lite mer djupgående jämfört med gymnasiefysiken. Det var mer verklighetsanpassad vilket gjorde det mer intressant. Quizerna var också bra.

Övningstillfällena var bra för att få en djupare förståelse för ämnet men även kunna ställa frågor.

Att Arne hade så bra upplägg på sina övningar. Han körde både live och via zoom, så man kunde välja att vara på plats eller delta digitalt. Gillar också att Nicolas inspelade föreläsningar finns digitalt, det är perfekt om man vill spola tillbaka, repetera något eller titta flera gånger. Vissa koncept är svåra att greppa första gången.. Gillar också quizz så man kunde testa sig själv på teorin.

What advice would you like to give to future participants?

Att satsa på KS:arna, lägga tid på att plugga på båda.

Jobba kontinuerligt med att lösa uppgifter redan från vecka ett så blir det inte lika mycket att repetera till tentaperioden.

Börja plugga i tid, häng med, gör många uppgifter, tentor, KSar osv.

Nöt många uppgifter! Både i boken och gamla tentor.

Jag skulle nog säga att man inte ska bli för skrämmd av kursen. Det kommer en del nya saker och det kan lätt bli överväldigande men ta det lugnt och repetera det som gicks igenom på föreläsningarna. Gör alla ks:ar och tentor också för det gjorde det lättare att hänga med.

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 "länkmöte" agree on many points. The students' results were in line with previous course offerings and the received evaluations were in general positive. The overall impression in terms of students' experience is that they were working with interesting issues. The students believed that the course was challenging in a stimulating way. They were active outside of the class room (spending time on task) thanks to the online quizzes implemented on Canvas. These are quizzes intended for students to practice without being graded.

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. About 75% of students that participated in the period 3 examination (VT2022) had grades between (A-E). The problem exam (TENC) is usually the most difficult to handle. The on-line quizzes implemented on Canvas for SG1102 during VT2020 were appreciated by students. The fact that the exercise sessions were hybrid (both on KTH campus and on-line via Zoom) has been also appreciated by the students. The materials available on Canvas (including the recorded lectures and exercise sessions) were considered useful.

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?
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Most students found the course challenging in a stimulating way and they felt that they could practice and receive feedback without being graded (e.g., via on-line CANVAS Quizzes). The assessment on the course was fair and honest. The students were able to learn by collaborating and discussing with others.

The fact that the exercise sessions were given also on Campus has been perceived beneficial.

Based on the survey, there are no significant differences between students identifying as female/male, international/national, 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?

Even if the teaching is back on campus, one can have a page on Canvas where links to recorded lectures are available.

The challenge may be to release the material in an optimal way; if the entire course material is released all from the beginning, it may affect negatively some students way of studying.

The "peer-instruction" based lectures are to be revisited for an optimal integration with concrete problems and examples.
