

# Report - SG1102 - 2023-10-19

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):**

Mihai Mihaescu, mihaescu@kth.se

---

**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 was open for cca. 3 weeks after examination. The response rate on the LEQ survey was 16.8% (VT2023), slightly higher than VT2022 (14.7%).

---

**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 (CENMs) preparatory and follow-up meetings (so-called "link-meetings/länkmöter") with the student representatives and fellow faculty during the Spring Semester. I had two meetings that involved the student representatives the first on 18/01/2023 and the second on 02/02/2023. During the first meeting I met only the student representatives. During the second one, I met the student representatives and the responsible teachers from all parallel courses to discuss on how the course activities are distributed during the Period 3. 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 representatives gather information from fellow students also via social media platforms (for example Facebook).

---

**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.

--

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.

--

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.

--

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.

--

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.

--

Examination: Problemdel, Tentamen (TENC, 3.0 hp)

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

---

Changes from the last course offering are summarize below.

---

-The lectures have been given in person, unlike during VT2022 when were given on-line using Zoom platform due to the Covid-19 pandemic.

-The exercise sessions were given on Campus

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

-Pre-recorded lectures (by Nicholas Apazidis during pandemic) were provided to the students via Canvas after each lecture. These materials are not replacing but complementing the in-class lectures.

-INL1 & INL2 were submitted by students on Canvas and corrected by examiner using SpeedGrader function for a rapid feedback to the students. Result graded (G or F)

- KS1 & KS2 (TENB, during the course): Examination moment on theory part (KTH campus). Grades according to ECTS grading scale.

- Quizzes on Canvas (not graded); multiple-choice questions; answers automatically corrected in Canvas (with direct feedback to students)

- The final course examination (TENB & TENC) has been on Campus Grades according to ECTS grading scale.

---

## 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 respondenter: 95 (NOTE: 74 students is the Number of first registration students according to kursinfoadmin <https://app.kth.se/kursinfoadmin/kursutveckling/SG1102> for VT2022)

Antal svar: 16

Svarsfrekvens: 16.8% (21% for first registration students )

-----  
18-23 hours/week

VT17 / VT18 / VT19 / VT20 / VT21 / VT22 / VT23

20.0% / 7.4% / 11.5% / 11.2% / 16.6% / 6.7% / 12.5%

-----  
15-17 hours/week

VT17 / VT18 / VT19 / VT20 / VT21 / VT22 / VT23

11.4% / 11.1% / 19.2% / 11.1% / 8.3% / 6.7% / 12.5%

-----  
12-14 hours/week

VT17 / VT18 / VT19 / VT20 / VT21 / VT22 / VT23

11.4% / 7.4% / 19.2% / 0% / 25% / 0% / 6.2%

-----  
9-11 hours /week

VT17 / VT18 / VT19 / VT20 / VT21 / VT22 / VT23

20.0% / 40.7% / 23.1% / 22.2% / 29.2% / 46.7% / 50%

-----  
6-8 hours /week

VT17 / VT18 / VT19 / VT20 / VT21 / VT22 / VT23

14.3% / 22.2% / 23.1% / 33.3% / 12.5% / 20% / 12.5%

-----  
below 5 hours /week

VT17 / VT18 / VT19 / VT20 / VT21 / VT22 / VT23

14.3% / 11.1% / 3.8% / 16.7% / 8.4% / 20% / 6.2%

25% of the students participating in the poll work with course related activities for more than 15 hours per week during VT23. This is more than VT22 (with 13.4% that work more than 15 hours/week during VT2022). This is positive. It may be related with the fact that all the course activities were on Campus, and 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?

---

62 students (approximately 83% of first-time registered students) obtained grades between A-E. 74 students is the Number of first registration students according to kursinfoadmin <https://app.kth.se/kursinfoadmin/kursutveckling/SG1102> for VT2022).

The 83% of first-time registered students that obtained grades between A-E is aligned with the years prior to Covid-19 pandemic.

About 2.7% of students obtained an "A" grade; this is a lower number as compared with the previous years.

Students comments:

- Vi hade flervariabel samtidigt, det är jättesvårt att hinna med två tunga kurser.
  - Kursen gick samtidigt som Flervariabel tyvärr så mycket tid gick där.
-

## 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?

- Bra att man kan göra prov på teoridelen innan.
- Bra engagemang från lärare och assistenter.
- Mekanik är viktigt, så det är förståeligt att vi läser det. KS:arna var bra.
- Att man kunde klara teorisalen med kontrollskrivningar. Fanns mycket bra material på canvas. Bra med mycket uppgifter på genomgång, samteleveraktivitet med clickers.
- Det var tydligt vad som förväntades av en och jag tyckte även att det var bra med inlämningsuppgifter under kursens gång, så att man fick bättre koll på hur väl man förstätt materialet.
- Quizzes.
- Ämnet! Ett otroligt kul ämne som verkligen känns som en viktig grund i framtida studier. Mihai lyfte verkligen intresset extra och gjorde föreläsningarna givande och hans genuina intresse för mekanik fick mig att se det med en ännu positivare blick. Allt ifrån hur han kastade pennan över klassrummet för att visa på en kastparabel till hans exempel på relevansen att lära sig dämpad och odämpad svängning visar på att han verkligen passar för att undervisa och är en bra pedagog.
- Det bästa med kursen var att det var intressanta områden som lästes, och så var metoden med 'clickers' som vi använde på föreläsningarna väldigt lärorikt och interaktivt på samma gång! Pedagogisk och engagerad föreläsare.

What would you suggest to improve?

- Jag tyckte quizzarna var bra, men att det hade varit till större hjälp om det fanns lösningsförslag till varje quiz, även om frågorna är på grundnivå. Jag tror det skulle ha hjälpt många, inklusive mig själv, för att få bättre resultat på KS:n. Även på gamla KS:n så tror jag att det skulle vara till nytta för eleverna om man fick se hur man kan tänka för att komma till resultatet.
- Göra fler uppgifter på övningen.
- Mer tid på att räkna ihop. Jag tycker filmerna var för omfattande och långa för vår kurs. Teori som härledningar är bra på film tycker jag. Kanske går det att klippa filmerna eller lägga angivelser vad man bör se för just denna kurs. Eller spela in nya, Tommy Ekolas mattefilmer är superinstruktiva jämfört m Nicholas. Så kunde en två timmar till i veckan läggas på räkna? Kanske kunde läraren anpassa vissa symboler mer till vad vi kört i gymnasiet? Tänker på  $r_0 \times mm$  som skrevs annorlunda o möjligt att förväxla.
- Förklaringar till rätt svar på quiz och kontrollskrivningar. Att man kan delta via zoom om man vill.
- Ett till övningsstillfälle (kanske varannan vecka) för frågor, då övningsstillfällena gått ut på enbart teori och uppgifter som räknas av assistenterna.

What advice would you like to give to future participants?

- Läs kapitlen noga innan föreläsningen.
- Arbeta med uppgifterna i boken kontinuerligt varje vecka, även om det kan kännas svårt ibland. Se exempel i boken och hur föreläsaren /boken/assen resonerar olika uppgifter.
- Läs i boken och gå på all undervisning.
- Plugga kontinuerligt.
- Läs boken innan, föreläsningarna går snabbt. Gör många övningsuppgifter.
- Gå på övningarna.
- Följ med i kursens gång och anteckna. Föreläsningar är givande för förståelse till teoridelen på tentan och gör sedan gamla tentor.
- Gör de övningsuppgifter ni rekommenderas att göra under kursens gång, så blir det mycket lättare att förbereda sig inför tentan när tenta-perioden kommer.
- Plugga kontinuerligt.

## 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 (prior to Covid-19 pandemic) and the received evaluations were in general positive. The students participating in the survey thought that the atmosphere on the course was open and inclusive. The overall impression in terms of students' experience (based on the received answers from the survey made) is that the students were working with interesting issues. 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 task) thanks to the online quizzes implemented on Canvas. These are quizzes intended for students to practice without being graded. The assessment on the course was fair and honest. 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 and that they were able to learn from concrete examples. They understood that understanding key concepts had high priority. They were able to learn by collaborating and discussing with others and were able to get support if needed.

## 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 and better than VT2022. About 83% of first-time registered students obtained 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 exercise sessions were appreciated as well. 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?

87.5% of the participating students in this survey found the course challenging in a stimulating way and 94% of them thought that the atmosphere was open and inclusive. 81.2% 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. The students were able to learn by collaborating and discussing with others. The male students mostly agreed with the LEQ statements (average response closer to 6 out of 7), while the female students strongly agreed with the LEQ statements (average response closer to 7). Based on the survey, there are no significant differences between students identifying as international/national, or students with/without disabilities. Student comment:  
- Kursen är välanpassad för dyslektiker.

#### **PRIORITIZED COURSE DEVELOPMENT**

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

---

I believe that a balance have been found now between the theory presented, derivations, exercises, examples, and peer-instruction type of questions.

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

The challenge is still 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.

---