

## Course analysis SK1118, HT21

Author: Max Yan, [maxyan@kth.se](mailto:maxyan@kth.se)

Date: 2022-01-31

### Course information

Course code: SK1118

Course name (English): Electromagnetism and waves

Course name (Swedish): Elektromagnetism och vågrörelselära

Points: 7.5

Programme: CINTE (Swedish), TCOMK (English), (and students from previous IF1613)

Period: 2

Responsible: Max Yan

Examiner: Urban Westergren

Teacher of lectures: Max Yan

Teacher of exercises: Richard Schatz

Teacher of Labs: Richard Schatz, Felix Vennberg, Albert Peralta Amores, (logistics coordination: Marina Zelenina)

### Course design

Physical lectures (13), exercises (9), and labs (2) were given without online streaming or recording. Pre-exam (1 session, 3hrs) and final exam (5 hrs) were held physically. One extra exercise (räknestuga) was coordinated by Richard just before final exam.

Other major changes of the course since its last instance: The course was reverted back to be on-site. English compendium “Electromagnetism under 100 pages” was improved before and under the course period. Paces for the lectures were slowed down compared to 2020.

### Meeting with students during the course

No special meeting was arranged during the course. Constant feedbacks were obtained during the lectures/exercises or through Email. Richard reported that some TCOMK students complained about heavy workload of another course and therefore did not try to take “Multi-variable calculus” which could be helpful for problem solving for this course. Some reported that they had COVID just before the final exam, so they had to take the re-exam.

### Students’ results

Registered for course: 57. Registered for exam: 51. Attended for exam: 40

Passed exam: 22 (55%) (Re-exam to be held in April is not considered.)

### Students’ opinions

Questionnaire was electronically sent out to students after the course (Appendix). 18 submitted replies (Appendix). The questionnaire comprises of five sections: **General**, **Lectures**, **Exercises**, **Labs**, **Others**. Below are summaries of the student’s opinions on the sections.

- **General:** Most students were very clear about the goal of the course in the beginning, satisfied with the course description, well informed during the course, and found the course material easily. Like last year, most students (14 out of 18) used the English compendium; among them, 12 students think it’s “good” or “very good”

while 4 think it is “neutral”. In comparison, opinions about the Swedish textbook were averaged a bit above “neutral” (9 replies in totals), which were similar to opinions in the last year. Majority of the students liked “having a pre-exam”.

- **Lectures:** (Throughout the course, Max observed there were usually 20-30 students attending the lectures.) Out of 19 students who responded, 10 followed all lectures. Others followed partially. Generally the students think the lecture difficulty level is a bit high and tempo should be slowed down somewhat.
- **Exercise:** Attendance to the exercise sessions is mixed. Most students surveyed attended >75% sessions. They though difficulty level is in general OK but slightly on the difficult side. Tempo were just perfect, as was in last two years.
- **Labs:** Lab instructions, difficulty levels, and tempo are all very good.
- **Others:** When it comes to preparedness to the course, answers were mixed, reflecting dynamic background of the students. At least more than half who replied said they were properly prepared by their previous studies. Most of them think mathematics in this course is manageable. The course does not combine that well with other course(s) under P2, as pointed out by some. Workload per credit is found to be OK. Time spent on the course per week is quite diverse for different students, but usually one needs to spend >10 hrs/week. Both the pre-exam and the final exam are found to be a bit difficult.

### **Analysis and comments**

#### ***Issues identified:***

- Students wanted more examples during lectures with “step-by-step solutions”, better yet using “blackboard” (not slides).
- They also want more examples in the English compendium.
- “The lectures could have a more general approach and less focus on the math”.

#### ***Positive observations:***

- Most students think the English compendium is very good.
- “I thought the course was interesting and giving.”
- “Jag känner mig nöjd med kursen i helhet.”

### **Planned course development**

- Further editing of compendium. More examples will be added for each subject.
- Lecture content: Besides lecturing with slides, adding problem solutions in step-by-step manner using blackboard.
- More applications even demos can be mentioned during lectures.

## SK1118 HT2021 Course survey results

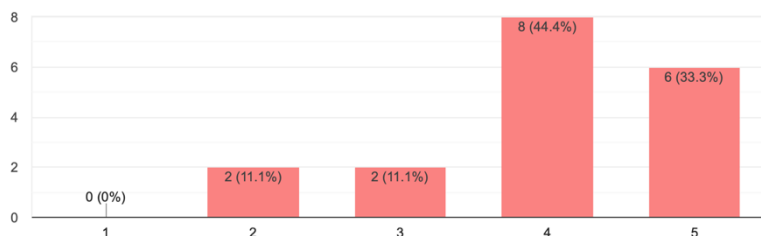
Sent: 2022-01-11; closed: 2022-01-30

(18 responses in total)

### GENERAL (ÖVERGRIPANDE FRÅGOR)

How clear were the goals of the course when it started? (Hur bra framgick kursens mål vid kursstart?) [1-Not clear at all; 5-Very clear]

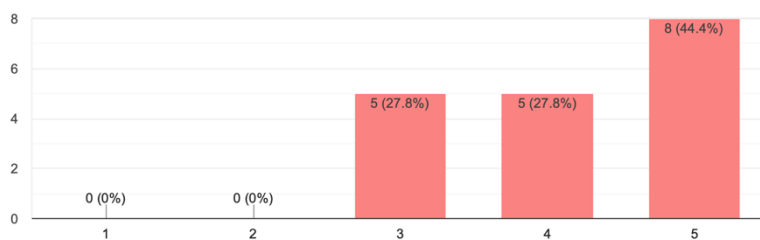
18 responses



How was the information in the course description? (Hur var information i kursbeskrivningen?)

[1-Not clear at all; 5-Very clear]

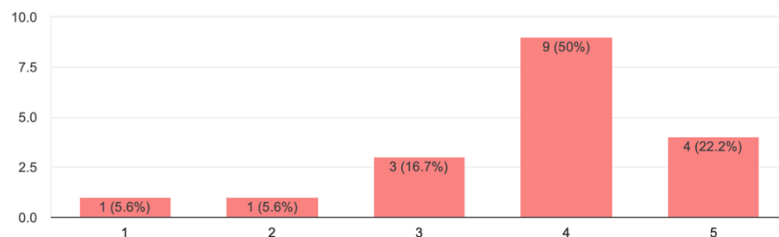
18 responses



How was the information during the course? (Hur har informationen varit under kursens gång?)

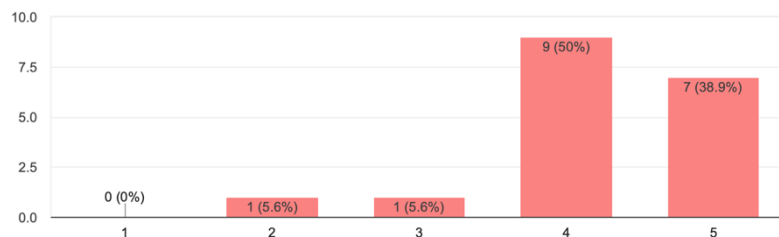
[1-Not clear at all; 5-Very clear]

18 responses



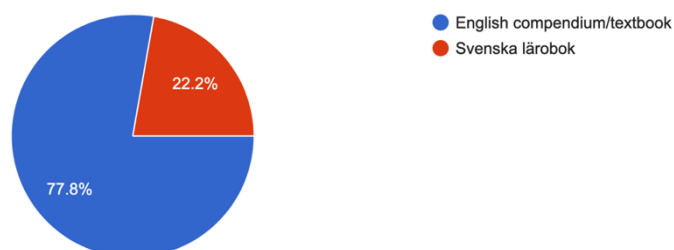
How was the access to the course material? (Hur var tillgången på kursmaterial?) [1-Very difficult to locate; 5-Very easy]

18 responses



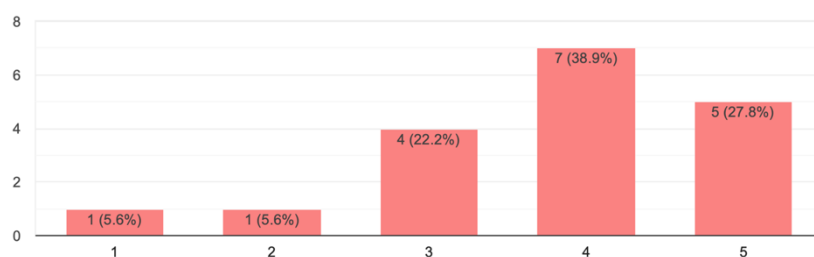
Which textbook you have used mostly? (Vilken lärobok har du mest använt?)

18 responses



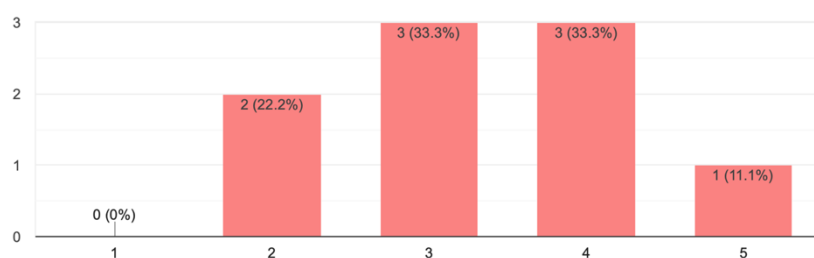
What do you think about the English compendium? [1-Not good at all; 5-Very good]

18 responses



Vad tycker du om den svenska läroboken? [1-Mycket dåligt; 5-Mycket bra]

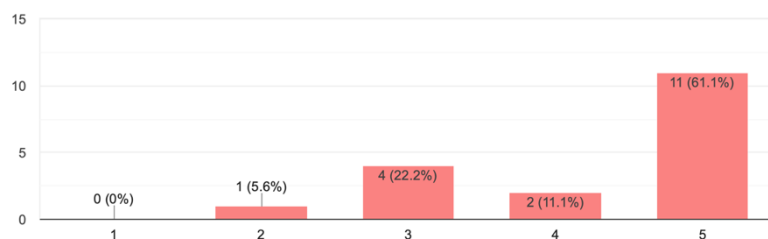
9 responses



What do you think about having a pre-exam? (Vad tycker du om att det finns en kontrollskrivning?)

[1-Not helpful; 5-Very helpful]

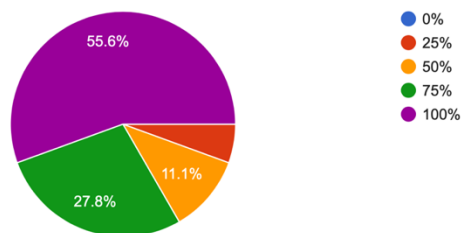
18 responses



LECTURES (FÖRELÄSNINGARNA)

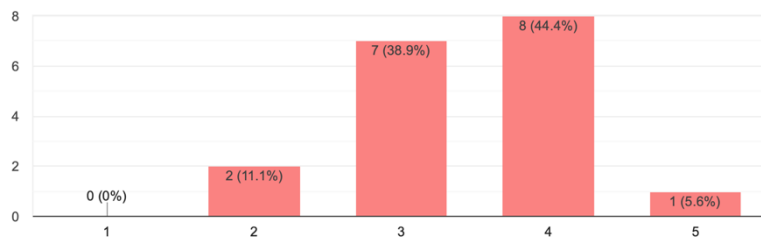
How many per cent of the lectures did you participate in? (Hur stor procentdel av föreläsningarna deltog du i?)

18 responses



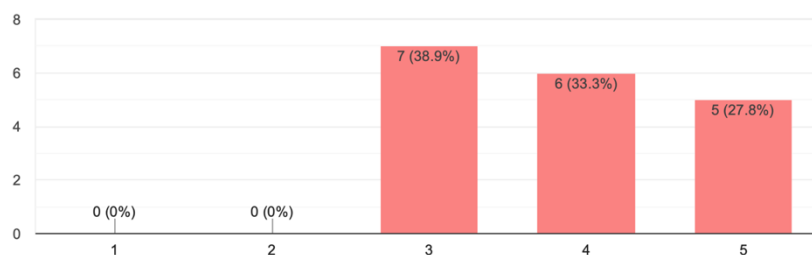
How was the difficulty level of the lectures? (Hur var svårighetsnivån på föreläsningarna?) [1-Too easy; 5-Too difficult]

18 responses



How was the tempo of the lectures? (Hur var takten på föreläsningarna?) [1-Too slow; 5-Too fast]

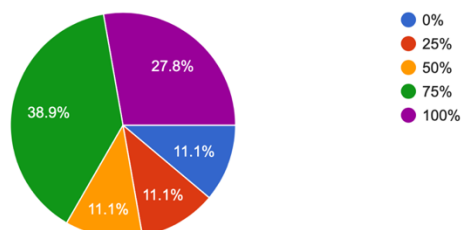
18 responses



## EXERCISES (ÖVNINGARNA)

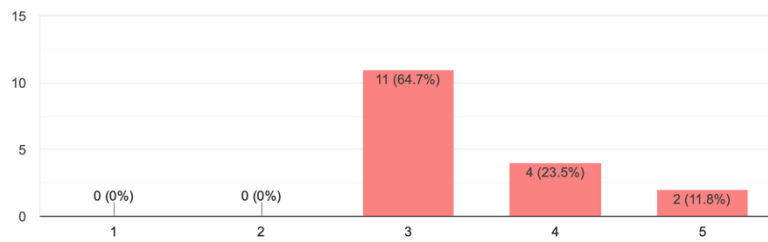
How many per cent of the exercises did you participate in? (Hur stor procentdel av övningarna deltog du i?)

18 responses



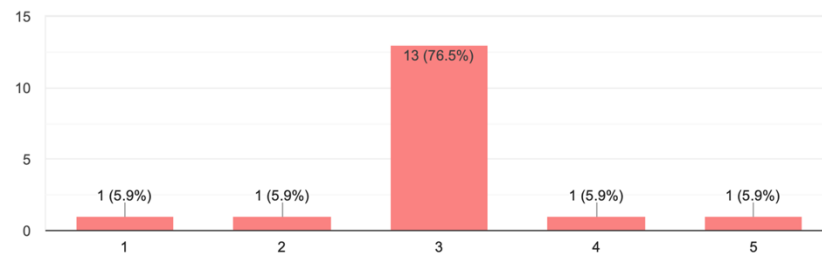
How was difficulty level of the exercises? (Hur var svårighetsnivån på övningarna?) [1-Too easy; 5-Too difficult]

17 responses



How was the tempo of the exercises? (Hur var takten på övningarna?) [1-Too slow; 5-Too fast]

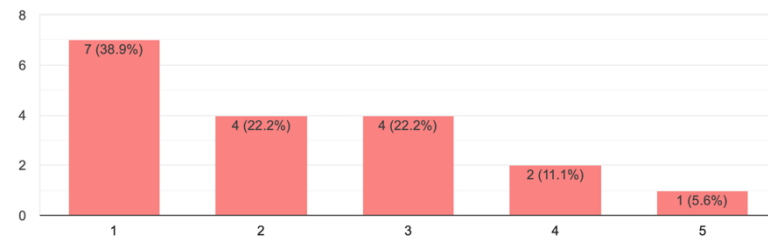
17 responses



## LABS (LABORATIONERNA)

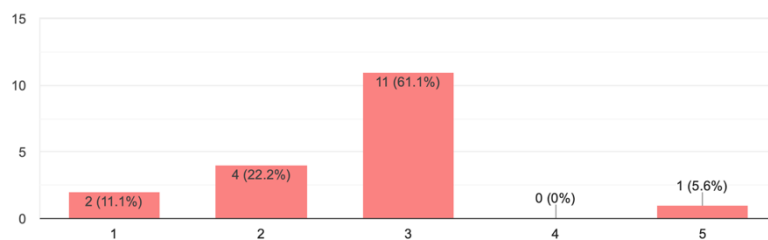
What do you think about the laboratory instructions? (Vad tycker du om laborationsanvisningarna?) [1-Very good; 5-Very poor]

18 responses



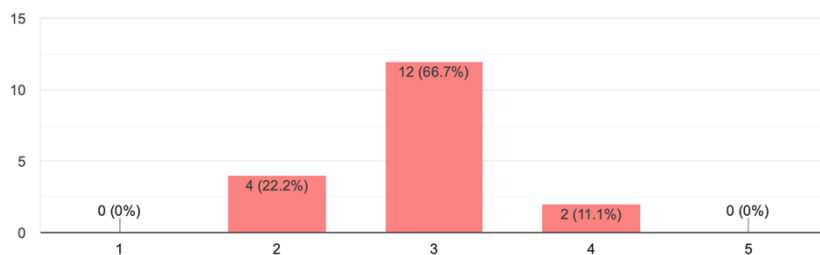
How was the difficulty level of the labs? (Hur var svårighetsnivån på labbarna?) [1-Too easy; 5-Too difficult]

18 responses



How was the time length for the labs? (Hur var tiden på labbarna?) [1-Too long; 5-Too short]

18 responses

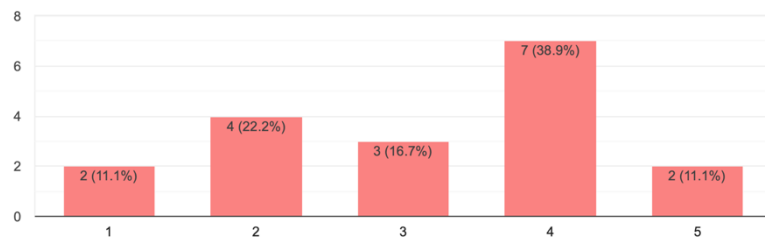


## OTHER QUESTIONS (ÖVRIGA FRÅGOR)

How well have your previous studies prepared for this course? (Hur bra var dina förkunskaper?)

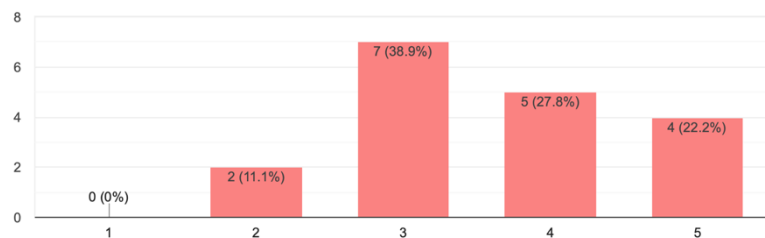
[1-Very poorly; 5-Very well]

18 responses



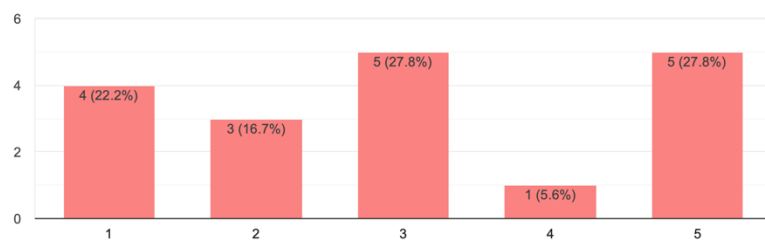
How was the level of mathematics in the course? (Hur var den matematiska nivån i kursen?) [1-Too easy; 5-Too difficult]

18 responses



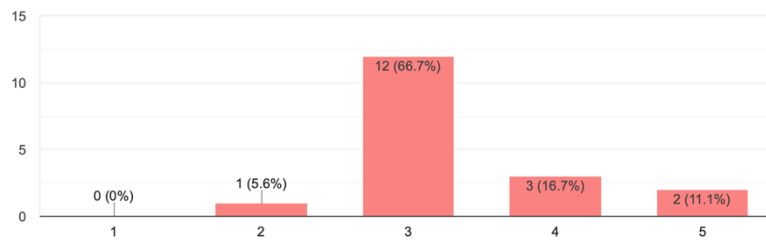
How was the combination with other parallel course(s) in period 2? (Hur gick studierna att kombinera med den parallella kursen i period 2?) [1-Difficult to combine; 2-Easy to combine]

18 responses



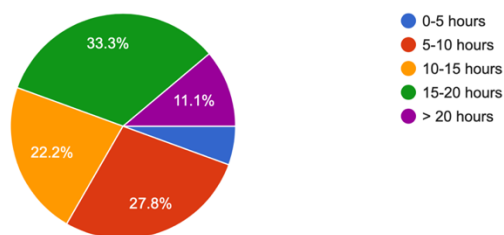
How was the workload in comparison to the number of credits? (Hur var arbetsbördan i förhållande till kurspoängen?) [1-Too little work; 5-Too much work]

18 responses



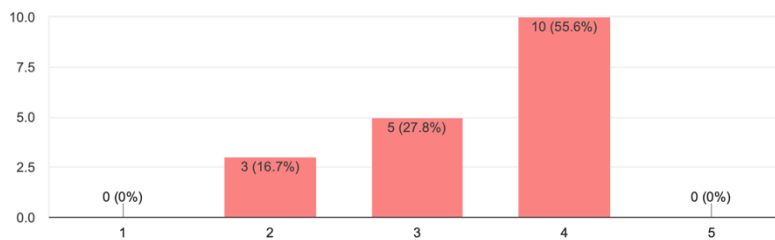
How many hours per week did you study during the course? Include lectures etc. (Hur många timmar per vecka studerade du under kursen? Inkludera föreläsningar etc.)

18 responses



What do you think about difficulty of the pre-exam? (Vad tyckte du om svårighet av kontrollskrivningen?) [1-Too easy; 5-Too difficult]

18 responses



What do you think about difficulty of the final exam? (Vad tyckte du om svårighet av tentan?) (1-Too easy; 5-Too difficult)

18 responses

