

# Report - EL2520 - 2022-09-05

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

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

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

Elling W. Jacobsen

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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 evaluation was mainly carried out with an online survey. Invitation to the survey was sent out after the final exam, with repeated invitations to those who did not take the survey.

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**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.)**

Due to Covid, all teaching was online (second time). The lecturer and course responsible (the signature) had weekly meetings with all students, divided into two groups to have manageable size groups, in Zoom where they were invited to give feedback on the course content and format.

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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 consists of 14 lectures, 10 exercises, 4 computer lab assignments in groups of 2 students with hand-in, and one lab project in groups of 4 with hand-in. The grade is based on a final written 5h exam, performed in Zoom this year.

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**THE STUDENTS' WORKLOAD**

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

Most of the students spent around 20 hours per week, which is reasonable for a 7.5hp course.

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**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?**

Somewhat lower grades and more students who did not pass compared to previous years, but on par with 2020. Most students did however pass on the re-exam in August. The main reason for the somewhat worse results is most likely that we went over to pure online teaching due to Covid. This is not optimal for the students, and not for the teaching as such either.

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**STUDENTS' ANSWERS TO OPEN QUESTIONS**

**What does students say in response to the open questions?**

Most students are happy to have access to online material in the form of videos and lecture notes, since then they can study the material more in their own pace.

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**SUMMARY OF STUDENTS' OPINIONS**

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

The (few) students who answered seem to be happy with the course, both with the teaching and the content. Several students missed the social aspect and physical meetings with the teachers and other students.

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**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.**

Having pure online teaching is far from optimal, not the least because it is difficult to get feedback on how the students are performing /progressing. In the future, we will instead use some form of combined on campus teaching and videos, e.g., in the form of flipped classroom.

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**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?

Too few students answered the survey to draw any conclusions on this.

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**PRIORITIZED COURSE DEVELOPMENT**

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

Tailor the course for flipped classroom teaching in the future.

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**OTHER INFORMATION**

**Is there anything else you would like to add?**

Despite the negative experiences with online teaching, we are learning a lot on how to use digital media in teaching so as to hopefully provide an optimal mix on on campus teaching and digital classrooms in the future.

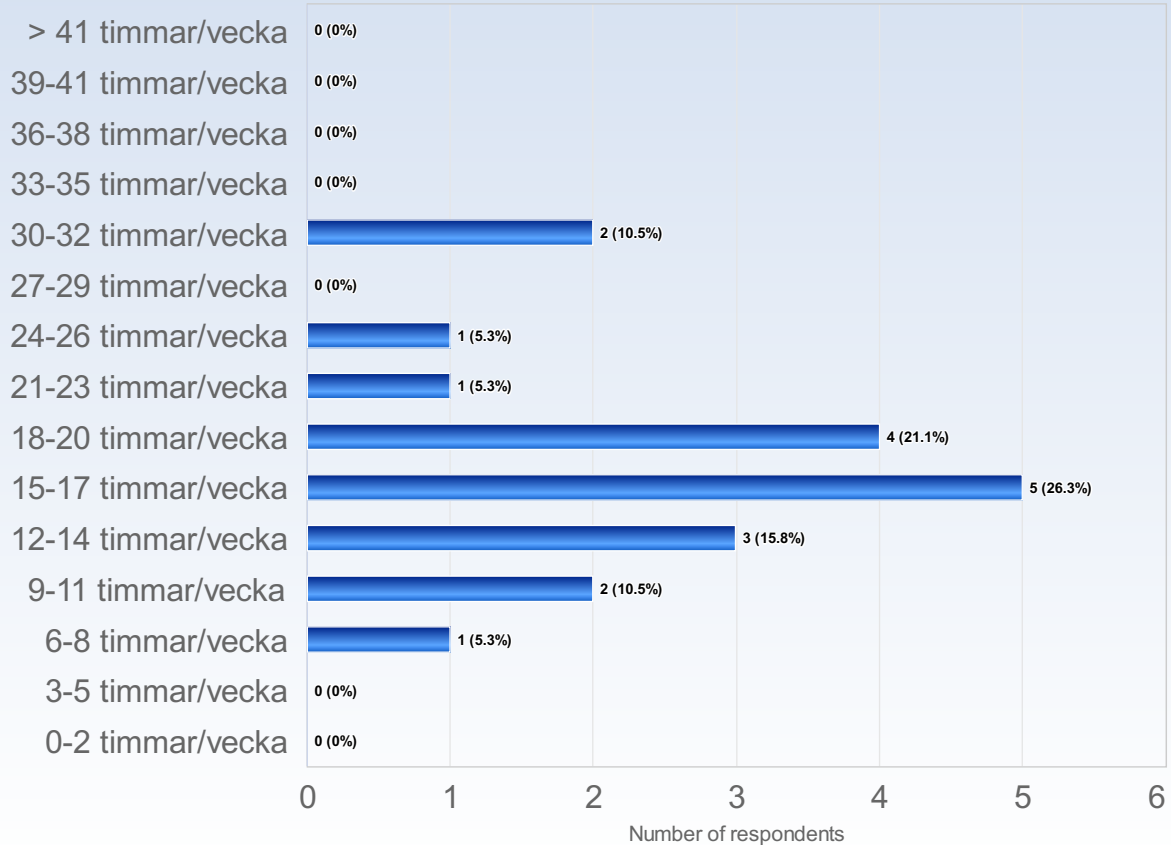
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# EL2520 - 2021-06-23

Antal respondenter: 116  
Antal svar: 19  
Svarsfrekvens: 16,38 %

## ESTIMATED WORKLOAD

On average, how many hours/week did you work with the course (including scheduled hours)?



### Comments

Comments (I worked: 12-14 timmar/vecka)

I think the workload was appropriate

Comments (I worked: 15-17 timmar/vecka)

Not too heavy

Hard to approximate how much time, as always

Comments (I worked: 21-23 timmar/vecka)

I liked the thought of being able to ask questions live but I felt like the sessions were not that interactive.

Comments (I worked: 30-32 timmar/vecka)

The workload was more than regular courses

## LEARNING EXPERIENCE

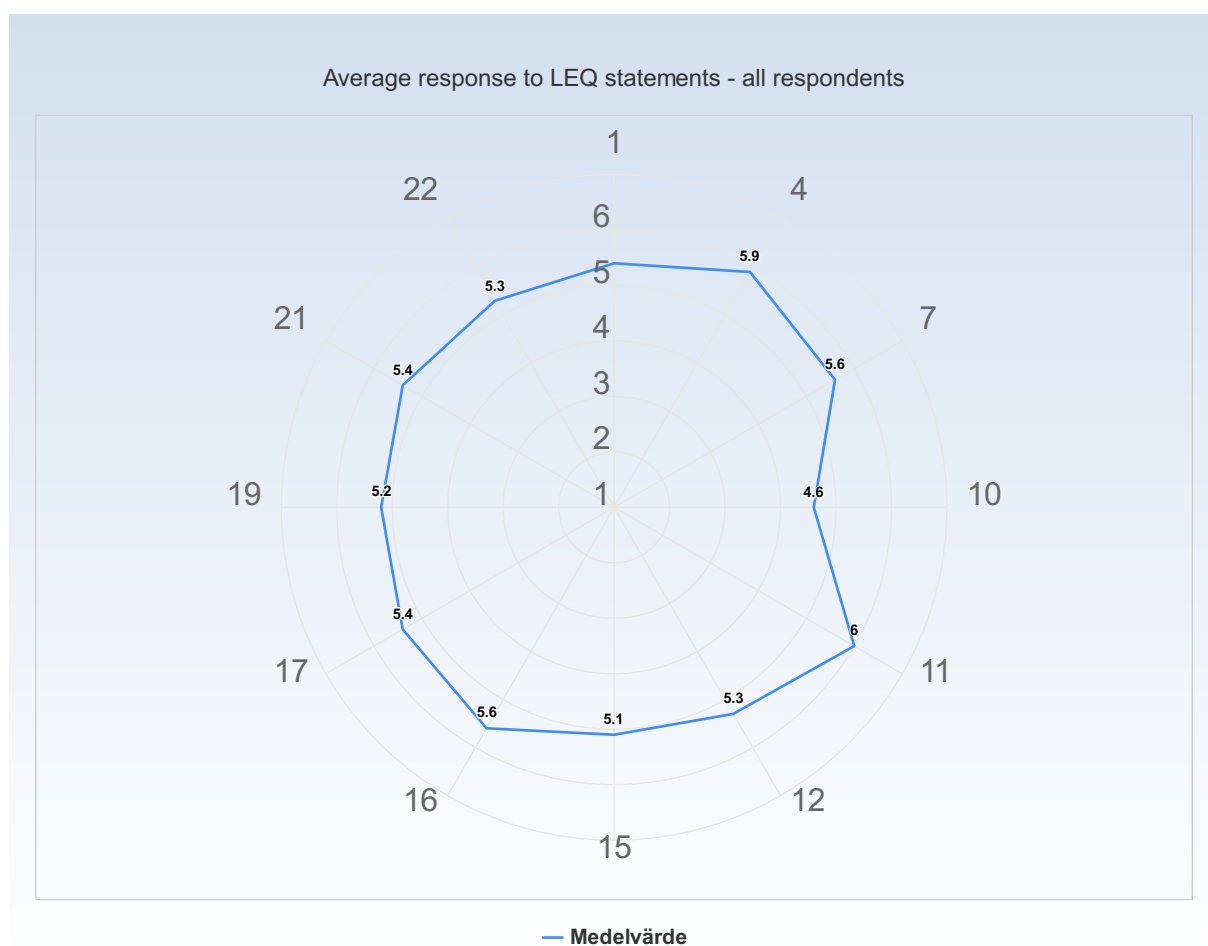
The polar diagrams below show the average response to the LEQ statements for different groups of respondents (only valid responses are included). The scale that is used in the diagrams is defined by:

1 = No, I strongly disagree with the statement

4 = I am neutral to the statement

7 = Yes, I strongly agree with the statement

**Note! A group has to include at least 3 respondents in order to appear in a diagram.**



## **KTH Learning Experience Questionnaire v3.1.4**

### **Meaningfulness - emotional level**

#### *Stimulating tasks*

1. I worked with interesting issues (a)

#### *Exploration and own experience*

2. I explored parts of the subject on my own (a)
3. I was able to learn by trying out my own ideas (b)

#### *Challenge*

4. The course was challenging in a stimulating way (c)

#### *Belonging*

5. I felt togetherness with others on the course (d)
6. The atmosphere on the course was open and inclusive (d)

### **Comprehensibility - cognitive level**

#### *Clear goals and organization*

7. The intended learning outcomes helped me to understand what I was expected to achieve (e)
8. The course was organized in a way that supported my learning (e)

*Understanding of subject matter*

- 9. I understood what the teachers were talking about (f)
- 10. I was able to learn from concrete examples that I could relate to (g)
- 11. Understanding of key concepts had high priority (h)

### *Constructive alignment*

- 12. The course activities helped me to achieve the intended learning outcomes efficiently (i)
- 13. I understood what I was expected to learn in order to obtain a certain grade (i)

### *Feedback and security*

- 14. I received regular feedback that helped me to see my progress (j)
- 15. I could practice and receive feedback without being graded (j)
- 16. The assessment on the course was fair and honest (k)

## **Manageability - instrumental level**

### *Sufficient background knowledge*

- 17. My background knowledge was sufficient to follow the course (f)

### *Time to reflect*

- 18. I regularly spent time to reflect on what I learned (l)

### *Variation and participation*

- 19. The course activities enabled me to learn in different ways (m)
- 20. I had opportunities to influence the course activities (m)

### *Collaboration*

- 21. I was able to learn by collaborating and discussing with others (n)

## *Support*

22. I was able to get support if I needed it (c)

## **Learning factors from the literature that LEQ intends to examine**

We tend to learn most effectively (in ways that make a sustained, substantial, and positive influence on the way we think, reflect, act or feel) when:

a) We are trying to answer questions, solve problems or acquire skills that we find interesting, exciting or important

b) We are able to speculate, test ideas (intellectually or practically) and learn from experience, even before we know much about the subject

c) We are able to do so in a challenging and at the same time supportive environment

d) We feel that we are part of a community and believe that other people have confidence in our ability to learn

e) We understand the meaning of the intended learning outcomes, how the environment is organized, and what is expected of us

f) We have adequate prior knowledge to deal with the current learning situation

g) We are able to learn inductively by moving from concrete examples and experiences to general principles, rather than the reverse

h) We are challenged to develop a true understanding of key concepts and gradually create a coherent whole from the content

i) We believe that the work we are expected to do will help us to achieve the intended learning outcomes

j) We are able to try, fail, and receive feedback before, and separate from, each summative assessment of our efforts



k) We believe that our work will be considered in an honest and fair way

l) We have sufficient time for learning and devote the time needed to do so

m) We believe that we have control over our own learning, and not that we are being manipulated

n) We are able to collaborate with other learners struggling with the same problems

## Literature

Bain, K. (2004). *What the Best College Teachers Do*, Chapter 5, pp. 98-134. Cambridge: Harvard University Press.

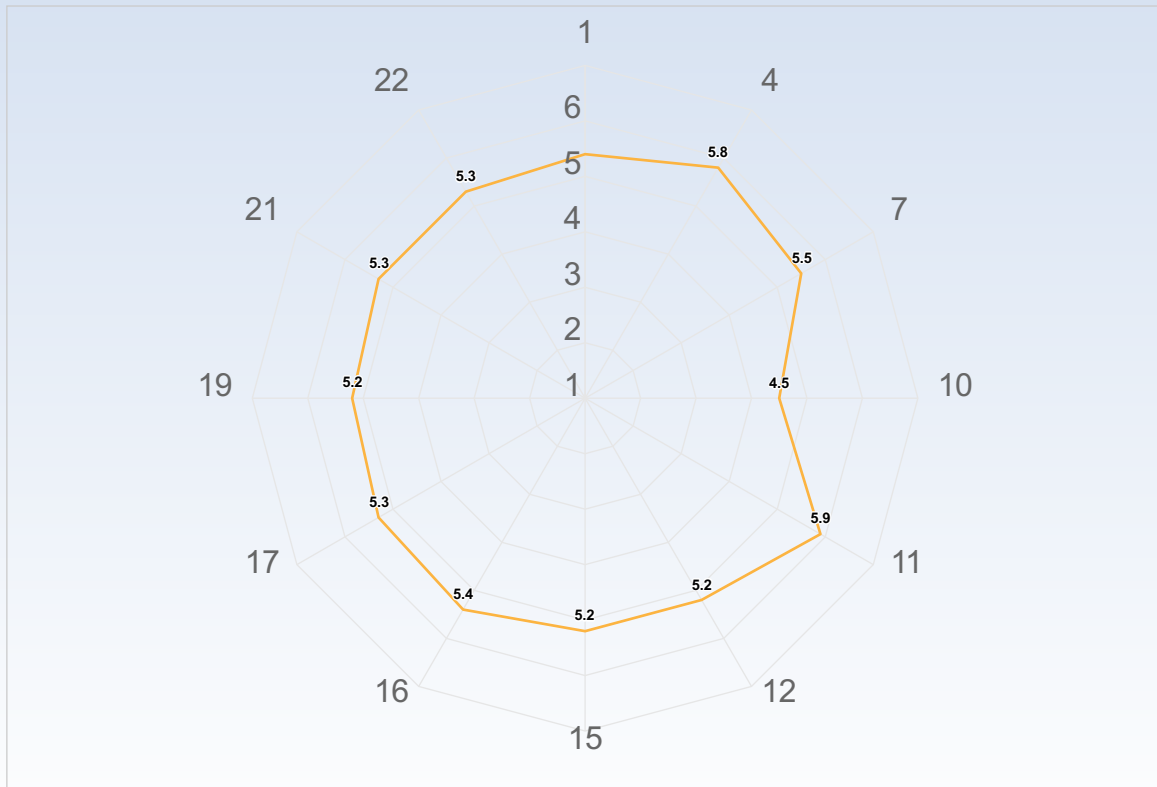
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

Elmgren, M. & Henriksson, A-S. (2014). *Academic Teaching*, Chapter 3, pp. 57-72. Lund: Studentlitteratur.

Kember, K. & McNaught, C. (2007). *Enhancing University Teaching: Lessons from Research into Award-Winning Teachers*, Chapter 5, pp. 31-40. Abingdon: Routledge.

Ramsden, P. (2003). *Learning to Teach in Higher Education*, Chapter 6, pp. 84-105. New York: RoutledgeFalmer.

Average response to LEQ statements - per gender



— Kvinna — Man — Annat — Vill ej uppge

Comments

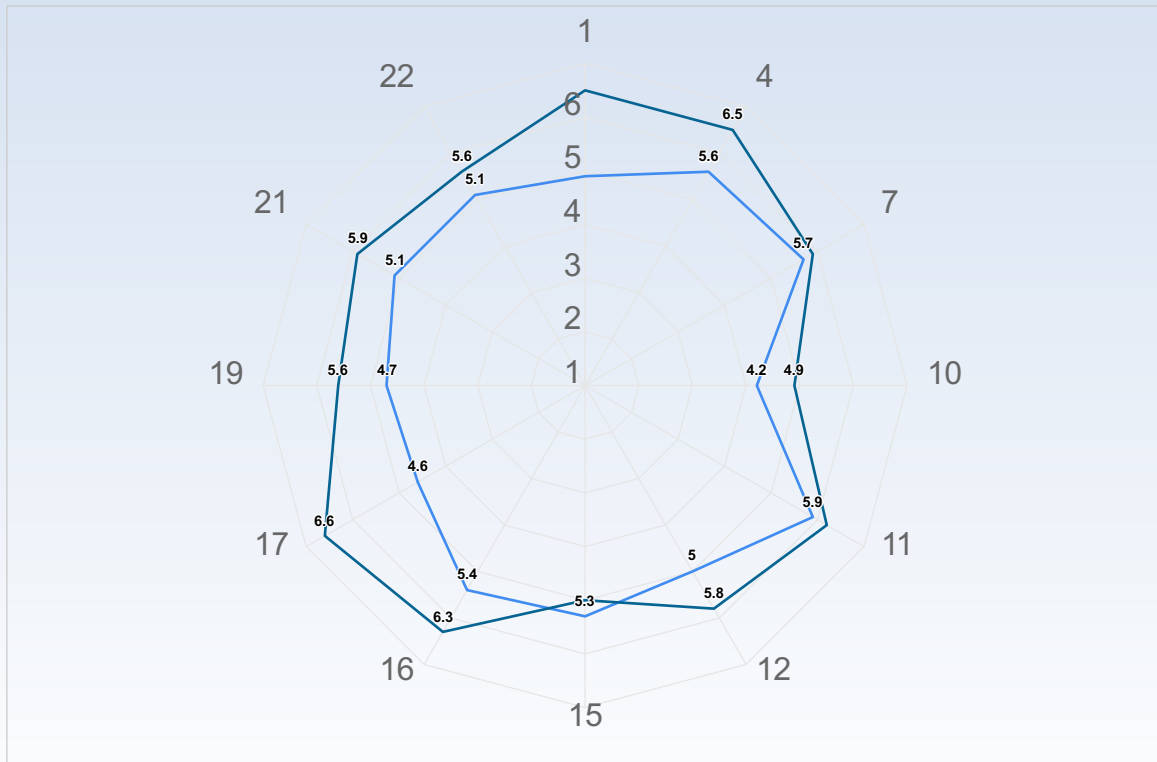
Comments (I am: Kvinna)

It was okay

Comments (I am: Man)

I did not feel like it had any impact on the course

Average response to LEQ statements - per type of student



- Internationell masterstudent
- Svensk student i årskurs 4-5
- Internationell utbytesstudent
- Annan typ av student
- Svensk student i årskurs 1-3
- Vill ej uppge

Comments

Comments (I am: Internationell masterstudent)

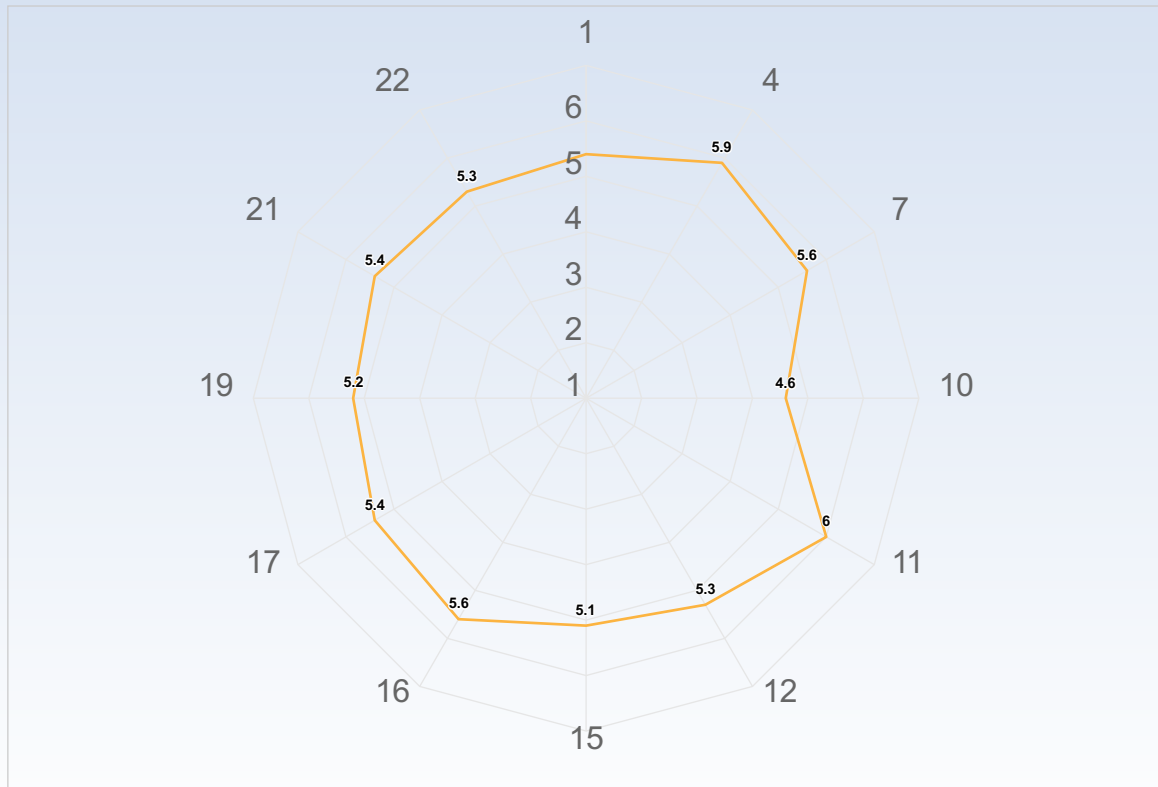
Coming from another countré was in no way detrimental to the learning experience

Comments (I am: Svensk student i årskurs 4-5)

Suitable for masters degree

I' lucky I already had friends here before I started because it is not easy to connect with people and find study buddies in these times and distance studies

Average response to LEQ statements - per disability



— Ja — Nej — Vill ej uppge

## GENERAL QUESTIONS

What was the best aspect of the course?

What was the best aspect of the course? (I worked: 9-11 timmar/vecka)

To collaborate with teammates and solve the task together. Could ask other students on zoom.

What was the best aspect of the course? (I worked: 12-14 timmar/vecka)

I think the course was really interesting, and the lessons were very well explained

What was the best aspect of the course? (I worked: 15-17 timmar/vecka)

Att man kunde lära sig på olika sätt, dels genom räkneuppgifter och dels genom labbar.

The lecture notes

The recorded excercises, they were very well made and informative.

- Perfect flipped classroom setup
- Good exercise videos
- Helpful labs that were quite easy

What was the best aspect of the course? (I worked: 18-20 timmar/vecka)

Labs

The lecture notes and slides were really good and extremely helpful to prepare for class.

That it presented you with newer concepts in control theory

What was the best aspect of the course? (I worked: 21-23 timmar/vecka)

The material. The suggested exam questions for each week.

## What would you suggest to improve?

What would you suggest to improve? (I worked: 9-11 timmar/vecka)

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What would you suggest to improve? (I worked: 12-14 timmar/vecka)

The idea of using the theory sessions for answering questions did not work as expected. I think students prefer to ask in private. Maybe that time could be better used by showing some practical information on the topic.

What would you suggest to improve? (I worked: 15-17 timmar/vecka)

De inspelade övningarna var katastrof. Inspelningsmaterialet hade mycket snabbare tempo än vad som hade känts bekvämt. En inspelad video på 25 minuter kunde ta över 2 timmar att kolla på eftersom man var tvungen att pausa varannan sekund.

The way the lab sessions were done by the TA

The instructions on lab 1 was unclear imo, which made me spend much time on that one compared to the other labs

What would you suggest to improve? (I worked: 18-20 timmar/vecka)

No flipped classroom

labs were borderline useless as the TA did not provide any feedback (nor much learning as they were more like a tutorial than a lab). Exercise lectures were also a repetition of lectures/pre-recorded video of the ex. lecture so again not really helpful as no info/new help was added. Much better the two times the TA engaged with us with new exercises to solve.

We need live lectures. The pre-recorded lectures was not very engaging and pretty monotonous, pp- slide after pp-slide with black text on a white background. They would be good as a complement to live lectures though.

What would you suggest to improve? (I worked: 21-23 timmar/vecka)

Better exercises to practice on apart from old exams. I felt like some of the exercises in the compendium were very different and hard to understand compared to the ones that were on the exam.

## What advice would you like to give to future participants?

What advice would you like to give to future participants? (I worked: 9-11 timmar/vecka)

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Read the lecture notes before each lecture sessions.

What advice would you like to give to future participants? (I worked: 12-14 timmar/vecka)

Be sure to get comfortable with the main concepts of the course

What advice would you like to give to future participants? (I worked: 15-17 timmar/vecka)

Gör de rekommenderade uppgifterna och lägg tid på att hänga med i början av kursen. Printa ut föreläsninganteckningar kontinuerligt, läs dem och stryk under de viktiga uttrycken!

Practice with previous exams and try to grasp all the concept well

Take time to follow the excercises, and make sure to understand everything yourself.

What advice would you like to give to future participants? (I worked: 18-20 timmar/vecka)

Understanding is key

read lecture notes/slides in advance.

Get the basics down ASAP!! Get a grip on all of the TF's and what they mean, learn how to find MIMO poles, system gain, zero directions. You can go ahead and practice q 1 and 2 in past exams and check yourself anytime during the course. If you have this down early in the course, it will be a lot easier to follow everything

What advice would you like to give to future participants? (I worked: 21-23 timmar/vecka)

Do not worry if you do not understand the exercises

## Is there anything else you would like to add?

Is there anything else you would like to add? (I worked: 9-11 timmar/vecka)

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Is there anything else you would like to add? (I worked: 15-17 timmar/vecka)

The zoom proctored exam was quite terrible, the time was split in a way that heavily penalized the student and it had repercussions on the performance. I do not think that during a pandemic the modality of an exam can change while the exam remains unchanged, I felt there was lack of interest by the professor.

Additionally we never received feedback for the last 2 labs and final project.

This would have been needed to understand if the concepts were understood.

We got the results several weeks after taking the exam. I think it is unacceptable.

Is there anything else you would like to add? (I worked: 18-20 timmar/vecka)

The exam was one of the most unfair of my recent career. One cannot take a sit in exam and use it in a different setup as nothing changed; even worse, the forced pause in between, although necessary had me do nothing for around 45 minutes after finishing the first part, while having to rush exercises of the second part. Finally, grading was not fair(answer seemngly needed to be very specifi) given how general and vague the question were.

The exercise sessions go waay to fast

Is there anything else you would like to add? (I worked: 21-23 timmar/vecka)

The computer exercises were good.

## SPECIFIC QUESTIONS

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## RESPONSE DATA

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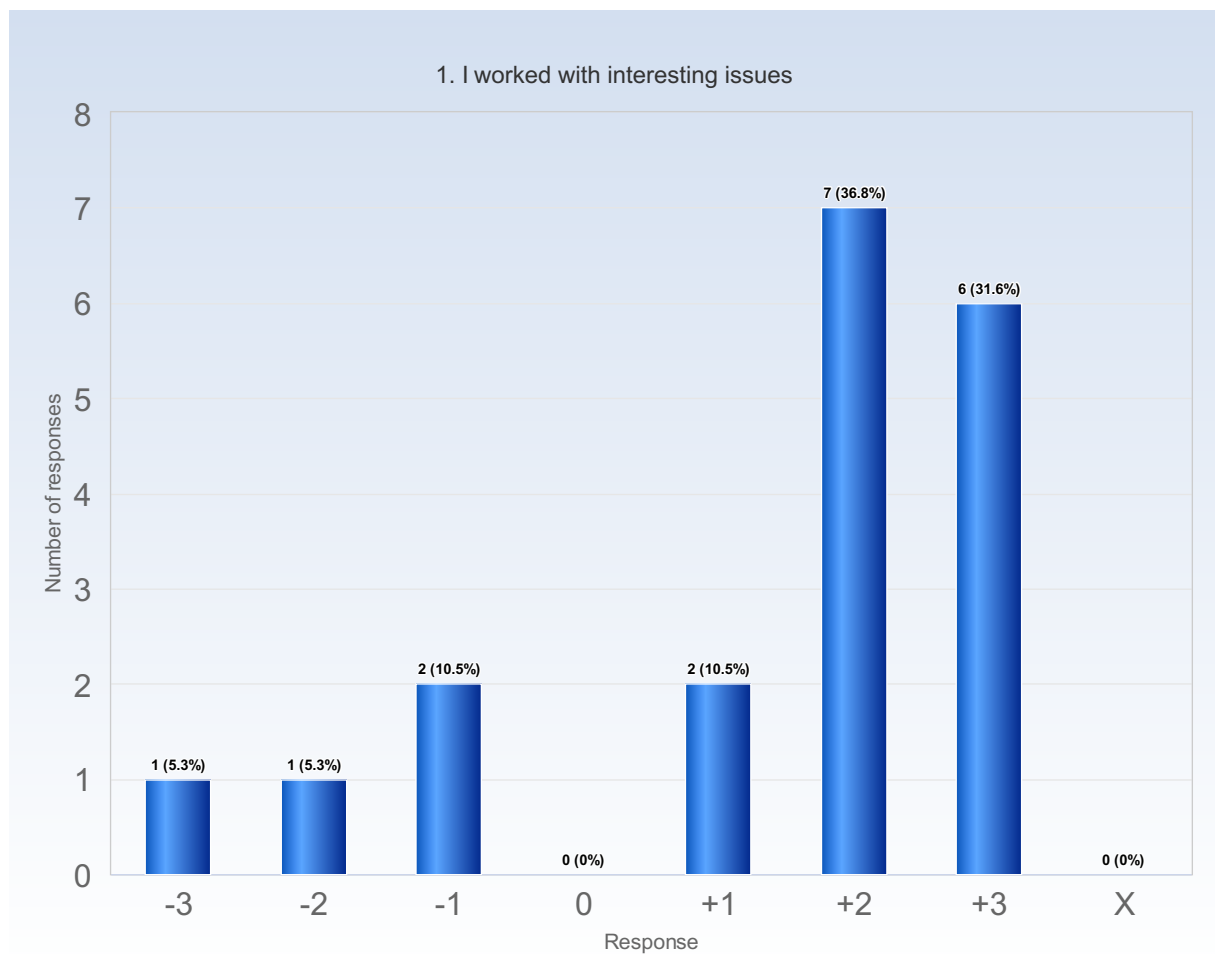
The diagrams below show the detailed response to the LEQ statements. The response scale is defined by:

-3 = No, I strongly disagree with the statement

0 = I am neutral to the statement

+3 = Yes, I strongly agree with the statement

X = I decline to take a position on the statement



Comments

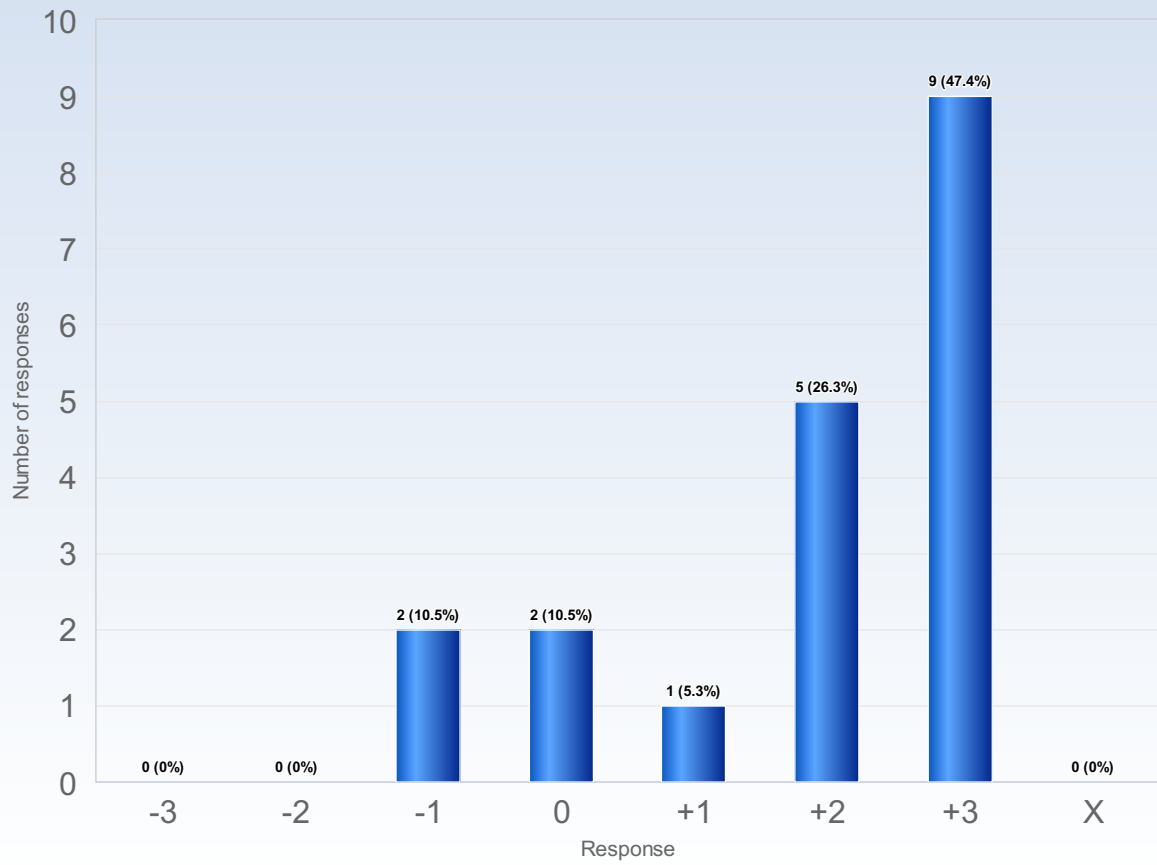
Comments (My response was: +1)

More practical examples would be welcomed, in a similar fashion as in the course book

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#### 4. The course was challenging in a stimulating way

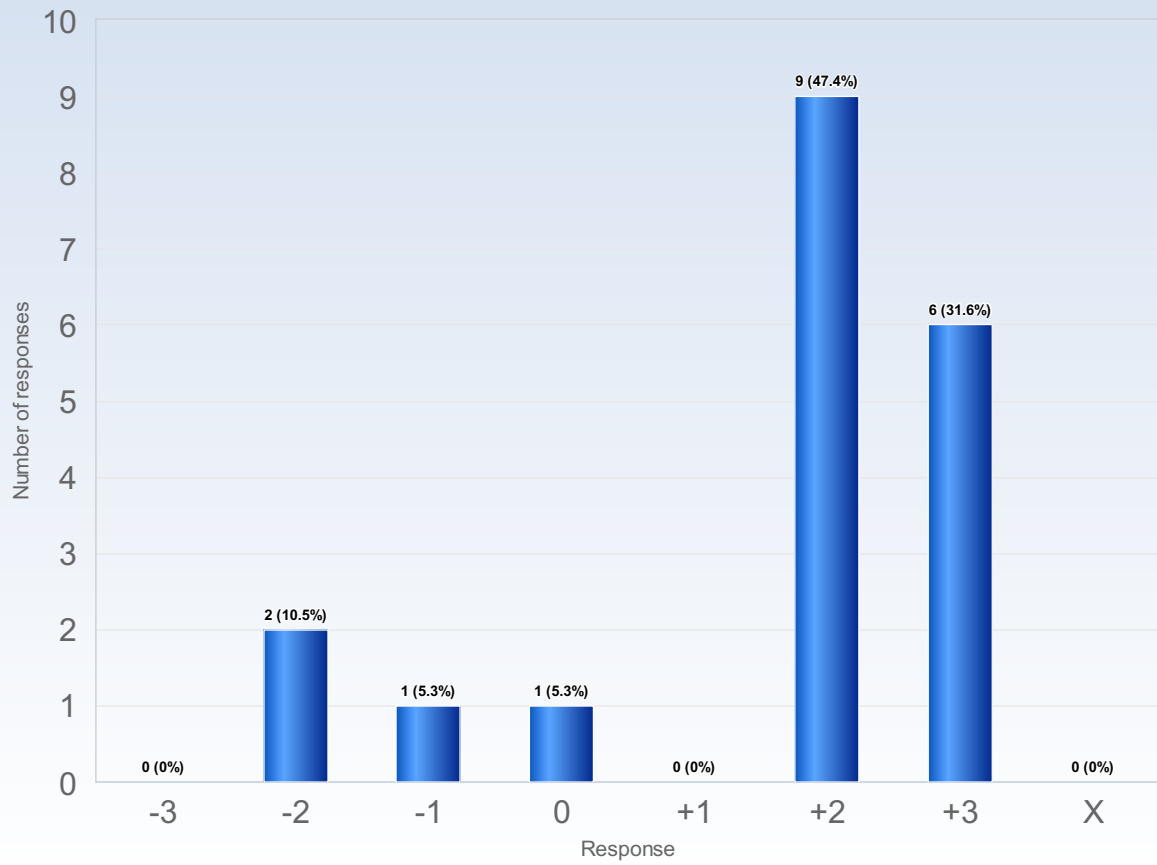


#### Comments

Comments (My response was: 0)

Yes and no. It would've been only yes i think if it hadn't been for that it felt like you were completely left on your own due to nothing beeing on campusz

7. The intended learning outcomes helped me to understand what I was expected to achieve



Comments

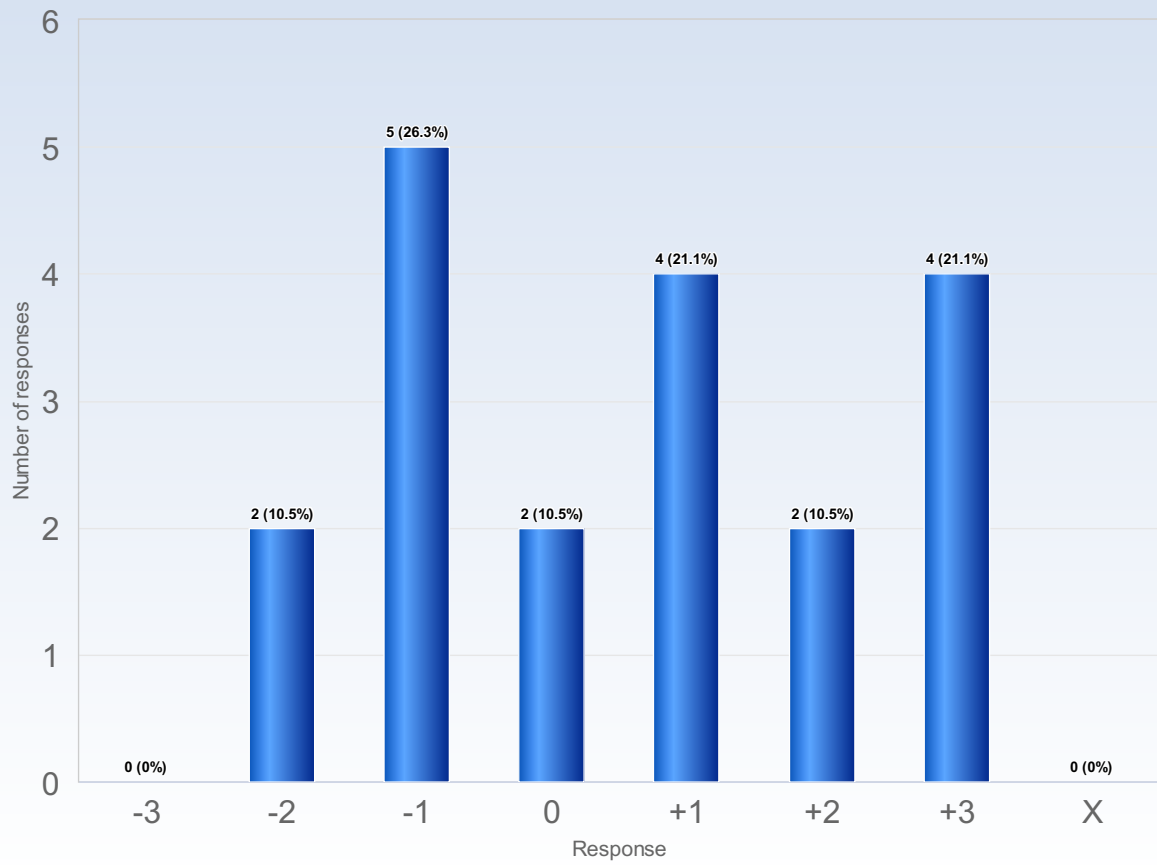
Comments (My response was: -1)

That's not something that you keep in mind. You just focus on completing the upcoming assignment

Comments (My response was: +3)

Quite clear learning goals throughout the course

10. I was able to learn from concrete examples that I could to relate to



Comments

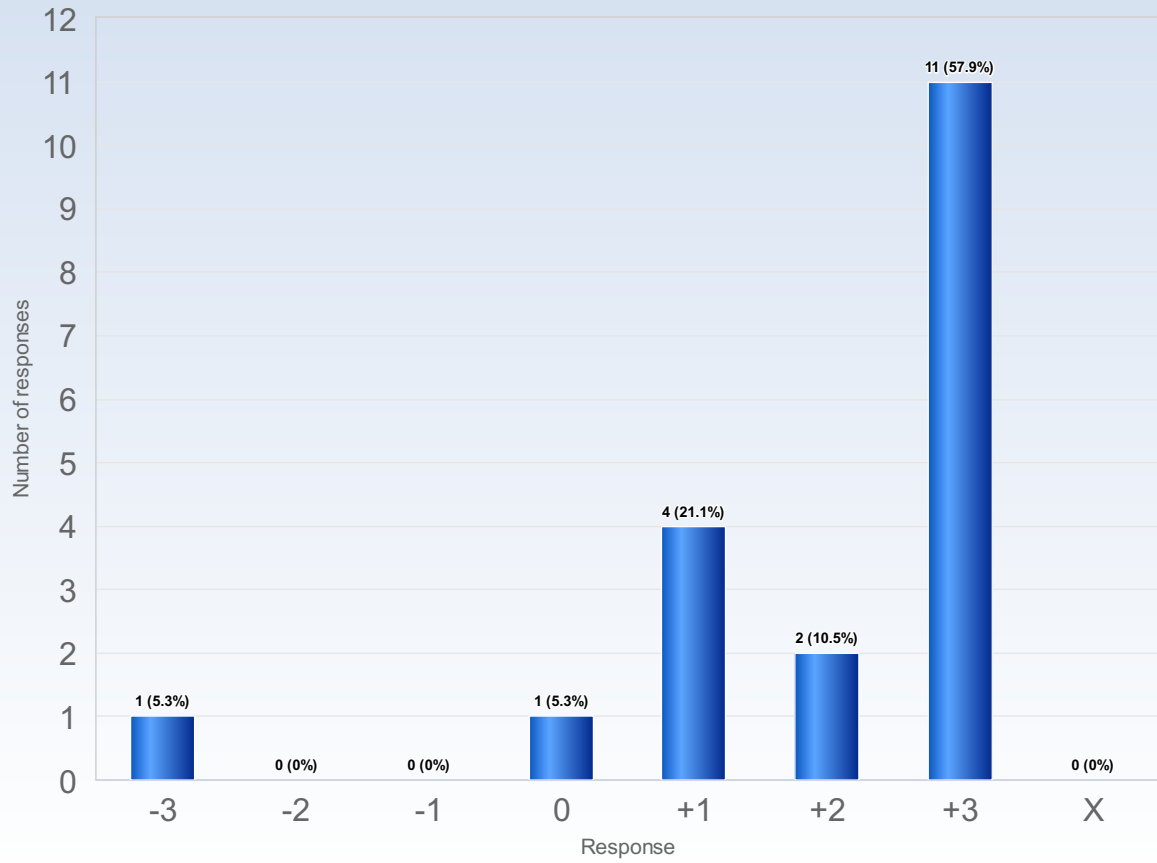
Comments (My response was: -2)

Besides the Jas Gripen story can I not remember any other concrete example that I could relate to.  
As said before, I think this is a great point of improvement for the course

Comments (My response was: +1)

Quite few reality-based examples

### 11. Understanding of key concepts had high priority

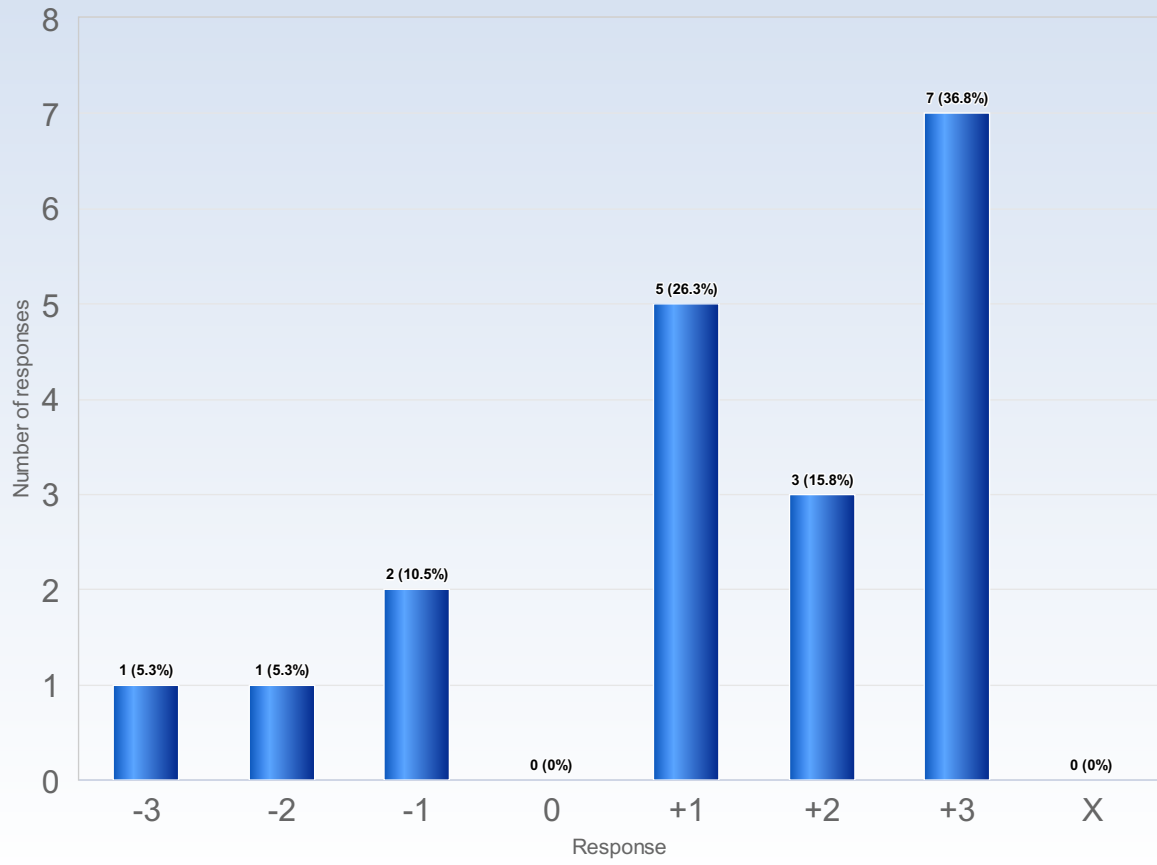


#### Comments

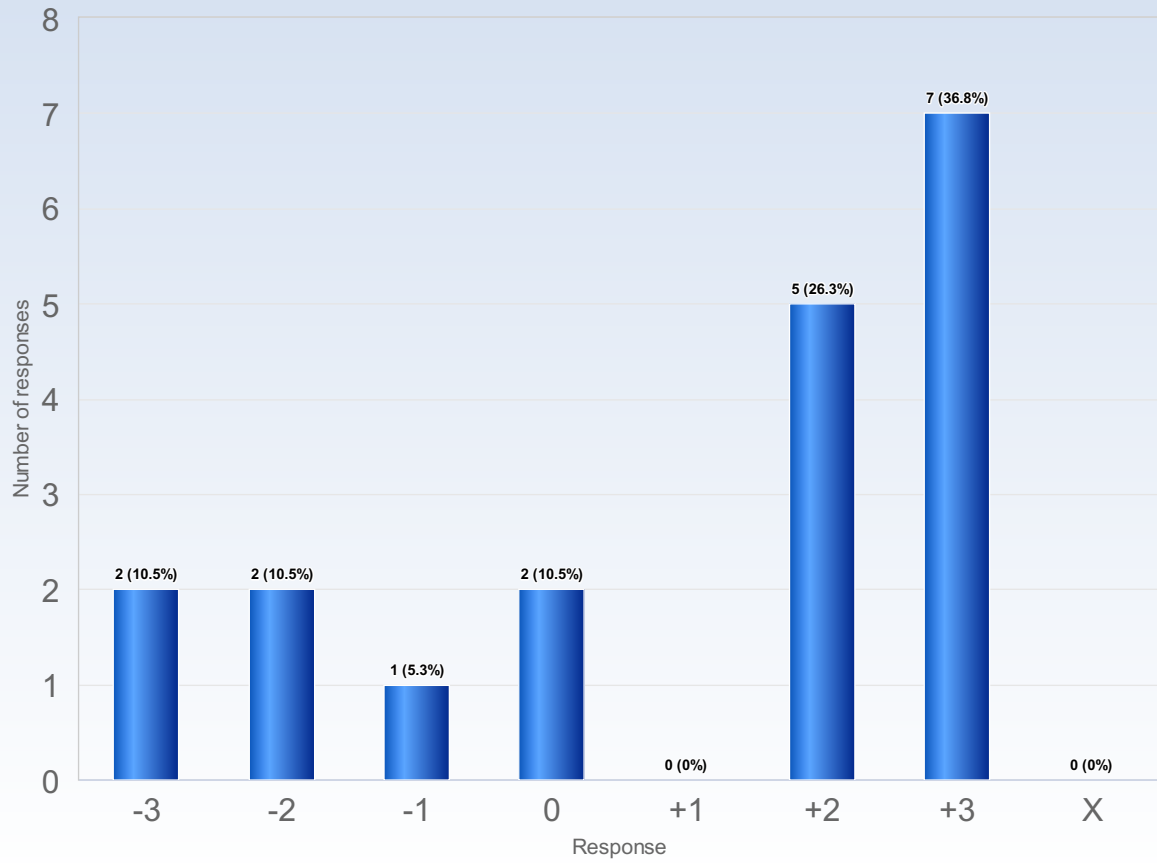
Comments (My response was: +1)

Probably. But it would've been good to hear what those were everytime we came across them in lectures, assignments and exercises

12. The course activities helped me to achieve the intended learning outcomes efficiently



15. I was able to practice and receive feedback without being graded

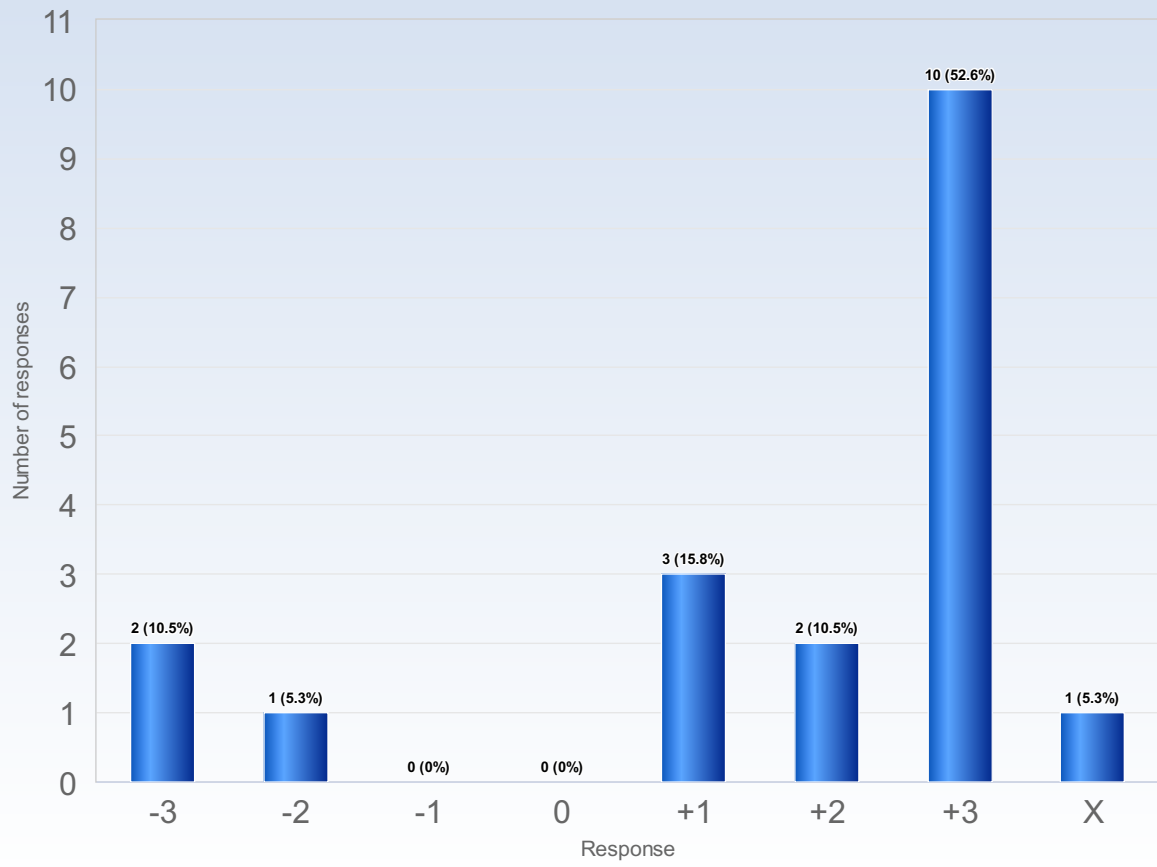


Comments

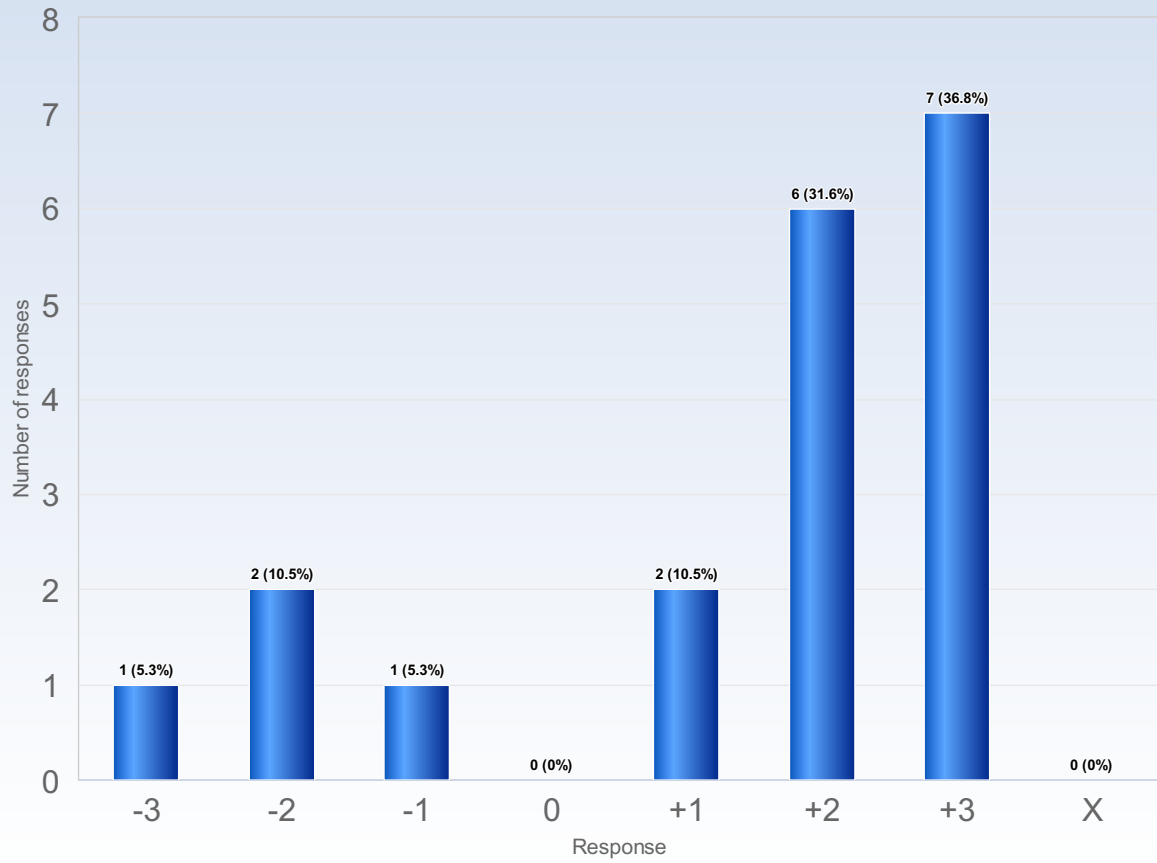
Comments (My response was: +3)

The labs felt low pressure in this regard, which was nice

16. The assessment on the course was fair and honest



17. My background knowledge was sufficient to follow the course



Comments

Comments (My response was: -2)

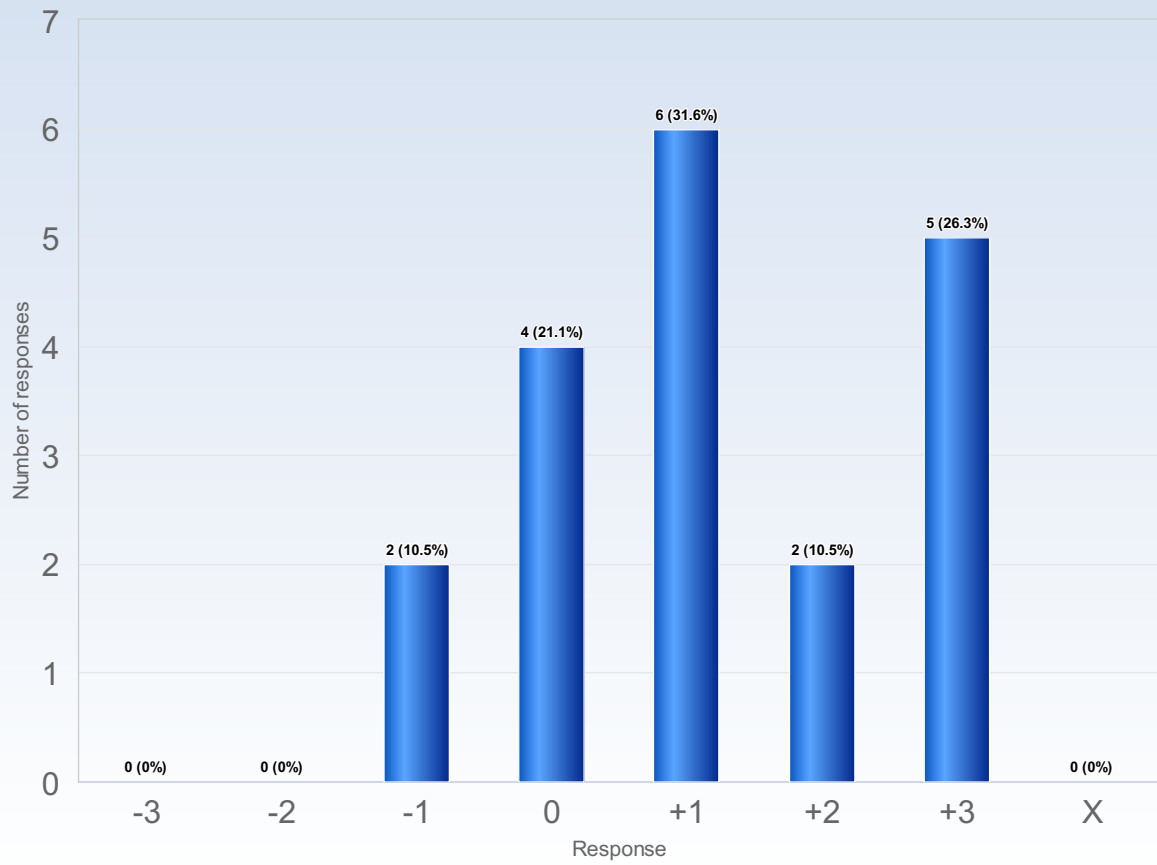
Although my previous knowledge on control theory was insufficient, the course was for the most parts easy to follow

Comments (My response was: +2)

It was, but a recap ok GoF would've been nice



19. The course activities enabled me to learn in different ways



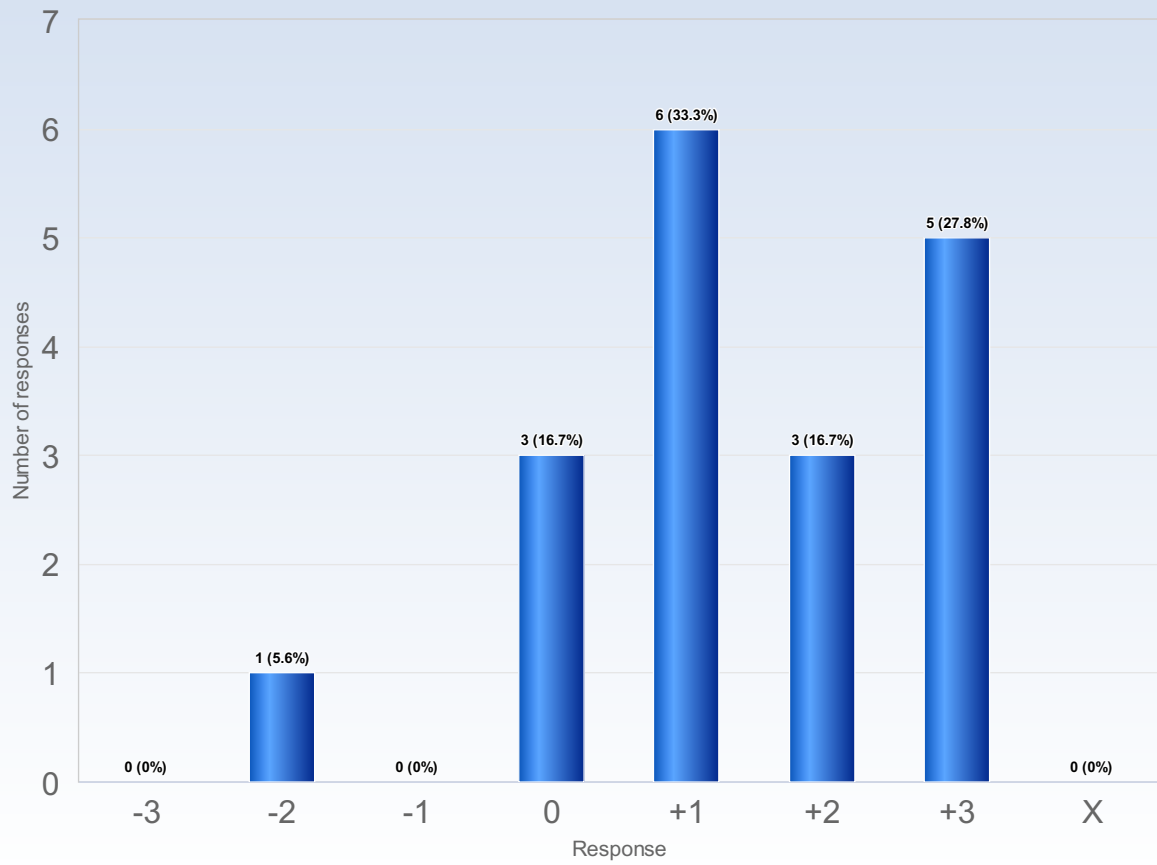
Comments

Comments (My response was: 0)

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No physical labs. So no, the only way was via theory

21. I was able to learn by collaborating and discussing with others

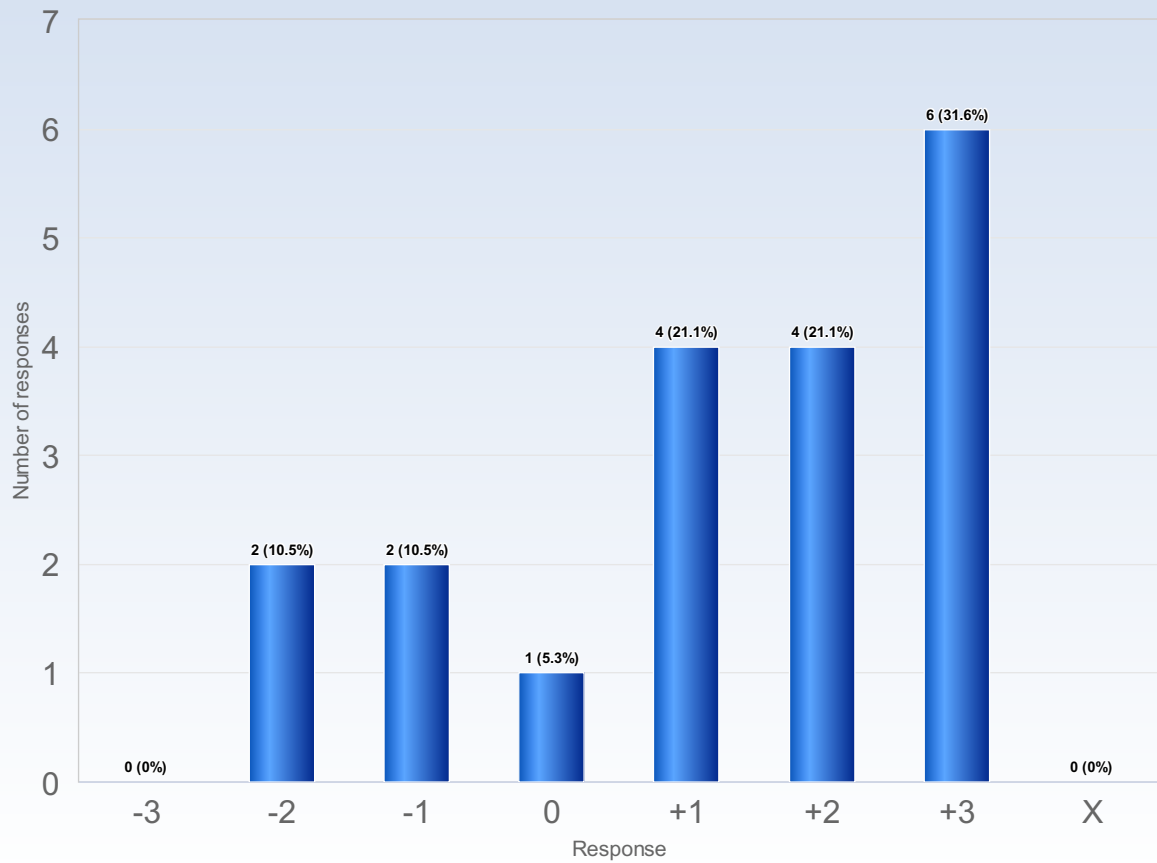


Comments

Comments (My response was: +1)

The separated rooms in the practice sessions are a great idea, but oftenly I found myself in rooms in which none of us had any idea on what to do

22. I was able to get support if I needed it



Comments

Comments (My response was: +1)

Support was given but questions on canvas could be unanswered for days.

Comments (My response was: +3)

Rijad förtjänar en stor eloge för sitt arbete! Hans hjälp var guld värd!

Yes you could always reach out to TA's etc. But you had to make the effort to do so, which is higher now when you never see in person