

## **Course Analysis DD2459 2022**

**Course Name:** Software Reliability Sofrel22 (period 3 2022)

**Course code:** DD2459

**Examination components:** Labs 3hp, Examination 4.5hp

**Number of students:** 94 (last year 53)

**Student performance:** 73 students passed the take home exam of March 15 2021 (43 A, 17B, 5C, 4D, 6E. 2FX) and 2 students passed by oral reexamination.

76 students have completed all 3 lab exercises (January 11<sup>th</sup> 2023)

86 students took the exam or oral re-exam (January 11<sup>th</sup> 2023)

75 students have completed the course (January 11<sup>th</sup> 2023)

The course consisted of 8 lectures, 3 seminars and 3 laboratory classes

The examiner, teacher and lab supervisor was Karl Meinke

### **Summary of Student Questionnaire**

The response to the LEQ student questionnaire was 9 out of 94 i.e. 10% (last year 32%). 6 questions were used with 1 additional question about the filmed lectures. This was to make the questionnaire short and easy to answer – thus raising the response rate.

Overall, the students were very positive to the course, especially the lab work and the online lectures which had been pre-recorded before the course started. Area of improvement were mainly improved access to the teacher. This was more difficult than in previous years due to increased administrative responsibilities (prefect).

The questionnaire summary is attached as an Appendix.

### **Analysis**

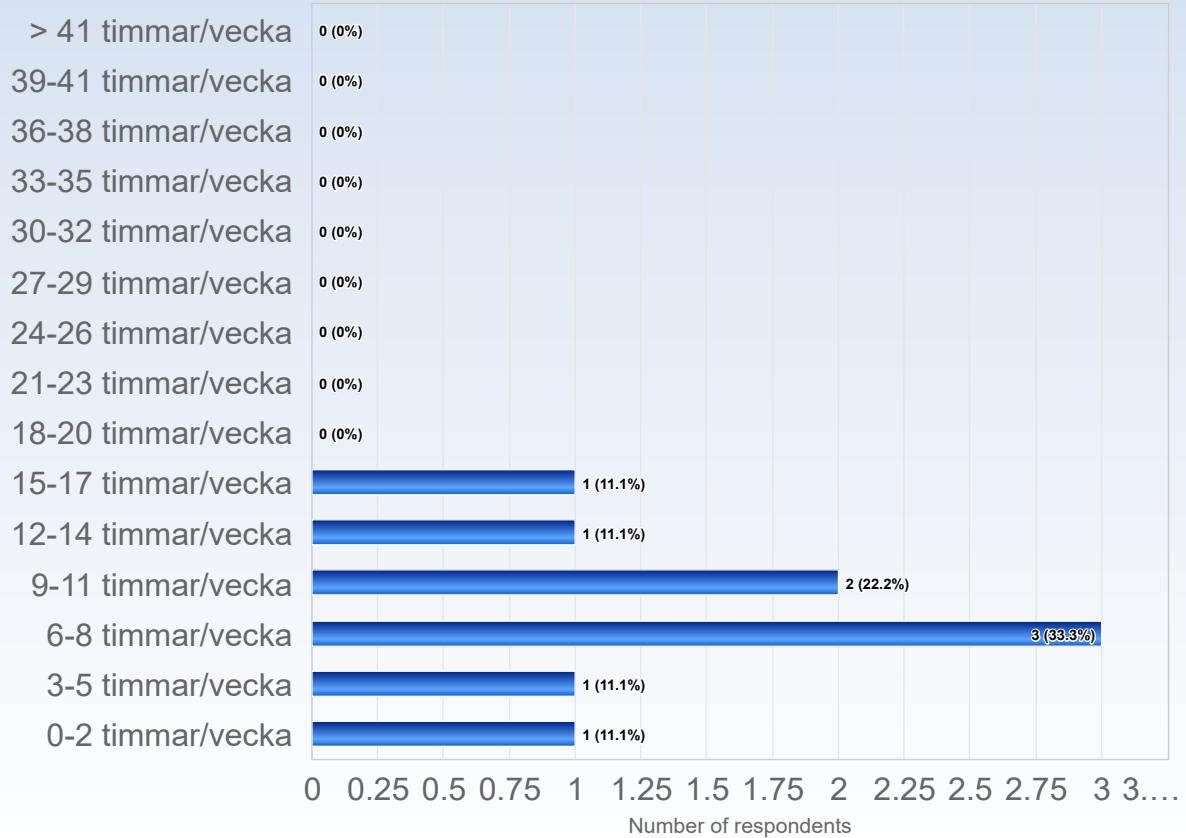
The course was well adapted this year to online teaching, by revising and improving the lecture slides to be more self-contained, better connected to the course book, and by recording each lecture as a film (using Loom and iMovie) in the previous year (2021). In addition, in 2022 I recorded each live online lecture with student consent, and added the live lecture alongside the prerecorded lecture. This was in response to the previous course analysis of 2021. The strengths of the course are that it addresses theory and practice equally, and the labs are greatly appreciated. The main weakness this year was the limited access to the teacher outside class times.

# DD2459 - 2022-02-21

Antal responder: 94  
Antal svar: 9  
Svarsfrekvens: 9,57 %

## ESTIMATED WORKLOAD

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



### Comments

Comments (I worked: 0-2 timmar/vecka)

I went to all the lectures and was able to do the labs so i felt that i did not need to put in any more effort.

Comments (I worked: 3-5 timmar/vecka)

The workload is too low. And the three labs really don't take too much time.

Comments (I worked: 6-8 timmar/vecka)

The work load was well distributed over the whole period.

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

I also went to another course (DD2480) where I learned many things about testing. So some of the learning time was to the other course and not here.

# LEARNING EXPERIENCE

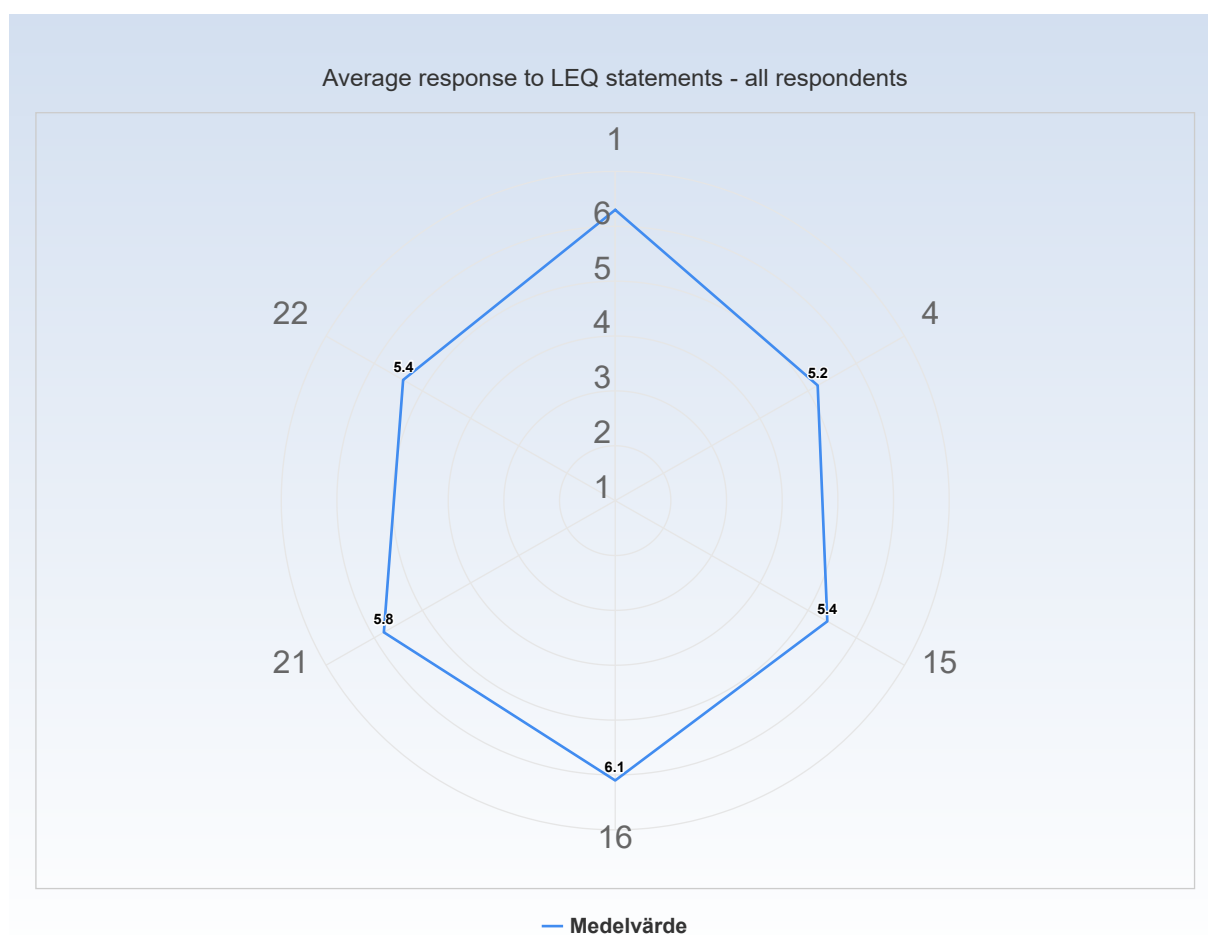
The polar diagrams below show the average response to the LEQ statements for different groups of respondents (only valid responses are included). The scale that is used in the diagrams is defined by:

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.

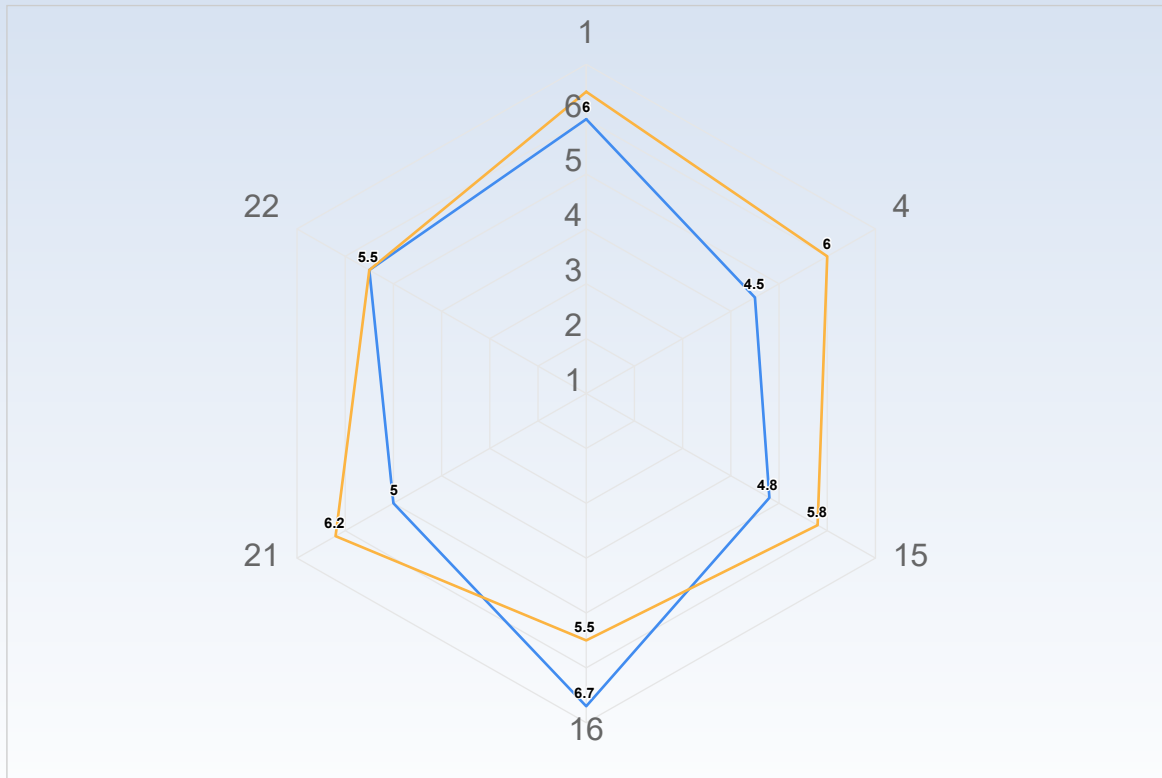
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

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



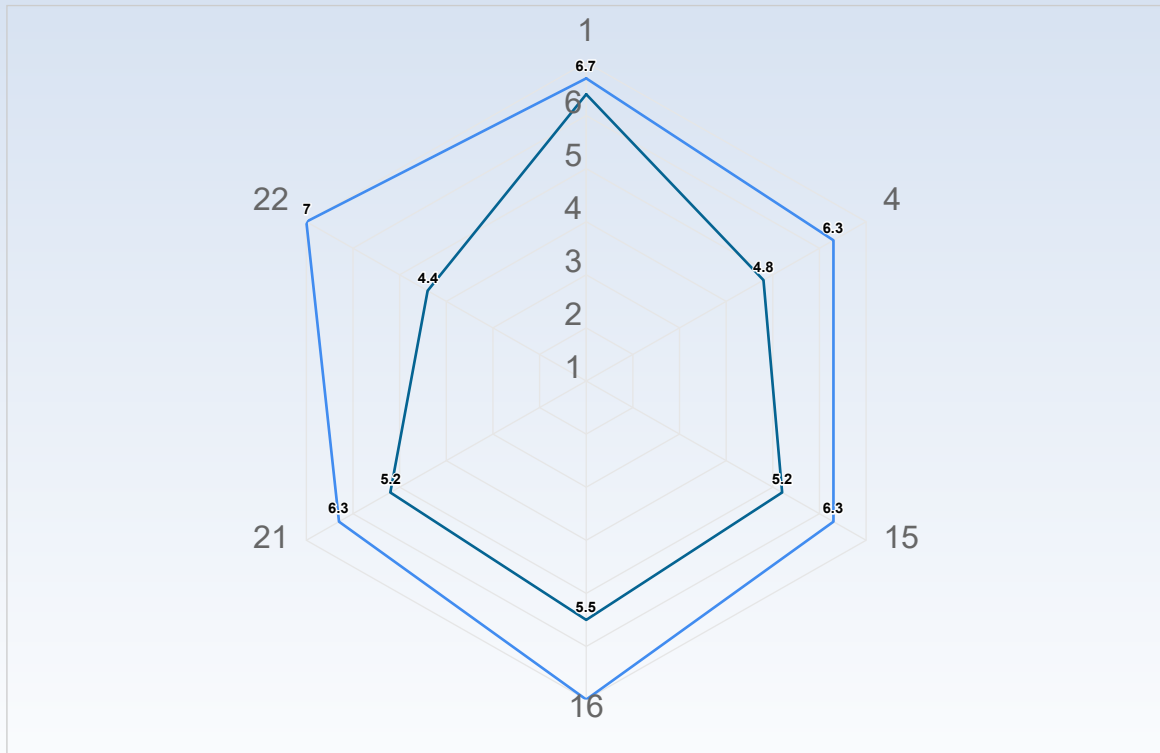
— Kvinna — Man — Annat — Vill ej uppge

Comments

Comments (I am: Kvinna)

No impact.

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

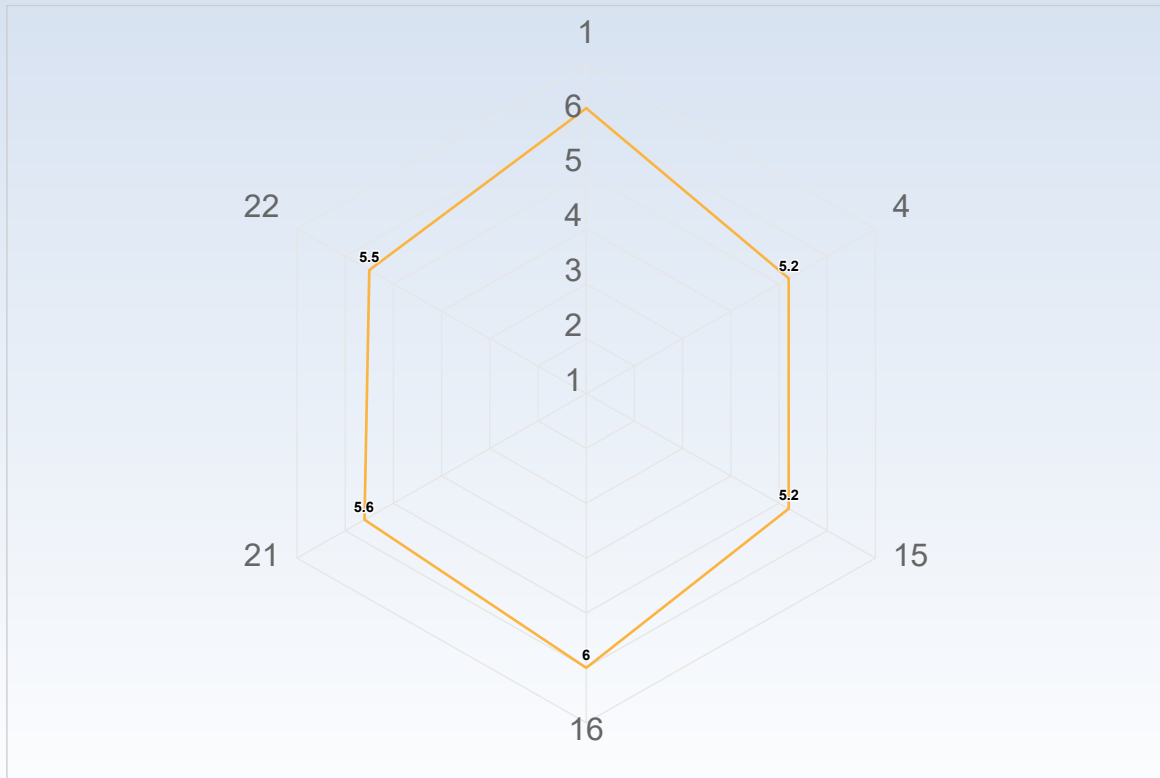
Comments (I am: Internationell masterstudent)

No impact.

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

The course felt a lot easier than most DD courses so far.

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: 0-2 timmar/vecka)

The labs

What was the best aspect of the course? (I worked: 6-8 timmar/vecka)

The lab session really exercised my knowledge.

The 3 assignments allow you to put the lectures into practice and realize how hard it can be to build test suites.

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

Great lecturer and educational labs

The labs really taught you why test automation is so important which was good.

The pace of the lectures was good

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

Karl is a good lecturer.

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

That the video was recorded, which makes it possible to look back if I missed something during the lecture or could not go to the lecture due to other courses or other private events (e.g. hospital time).

What would you suggest to improve?

What would you suggest to improve? (I worked: 3-5 timmar/vecka)

More materials should be covered. For a 7.5-credit course, only 7 lectures are used for teaching new knowledge is apparently insufficient. The labs can be discussed by TAs while professor can spend more time delivering new concepts.

What would you suggest to improve? (I worked: 6-8 timmar/vecka)

It would be better if more examples are included.

A concrete example of what is done in the industry could be presented to put in relief what we have seen during the lectures and assignments.

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

Maybe have TAs that can help Karl since he does not seem to have a lot of time for answering emails.

Maybe use groups on canvas so that both members of a lab group don't need to submit the pdfs. Then, only one comment on the submission is needed and both students can read them I believe

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

It is a pity that Karl has so little time for this course as it is an important topic and the lectures are good.

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

maybe publish the preferred deadlines for labs if you want to follow the course schedule. It's good that there are no specific deadline for the labs but it would be good to have some schedule to go after, which would make it easier to plan.

What advice would you like to give to future participants?

What advice would you like to give to future participants? (I worked: 0-2 timmar/vecka)

Go to the lectures and use Karl's notes from the website as supplement when working on the labs

What advice would you like to give to future participants? (I worked: 6-8 timmar/vecka)

Pay more attention to what professor said.

Start the assignments as soon as possible to get the most of the lab sessions.

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

Listen during the lectures and just ask whenever there is something you do not understand.

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

if you have the digital version of the course book, you can try to use the search function to get the relevant information.

Is there anything else you would like to add?

Is there anything else you would like to add? (I worked: 6-8 timmar/vecka)

Thanks you for this course!

## SPECIFIC QUESTIONS

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## RESPONSE DATA

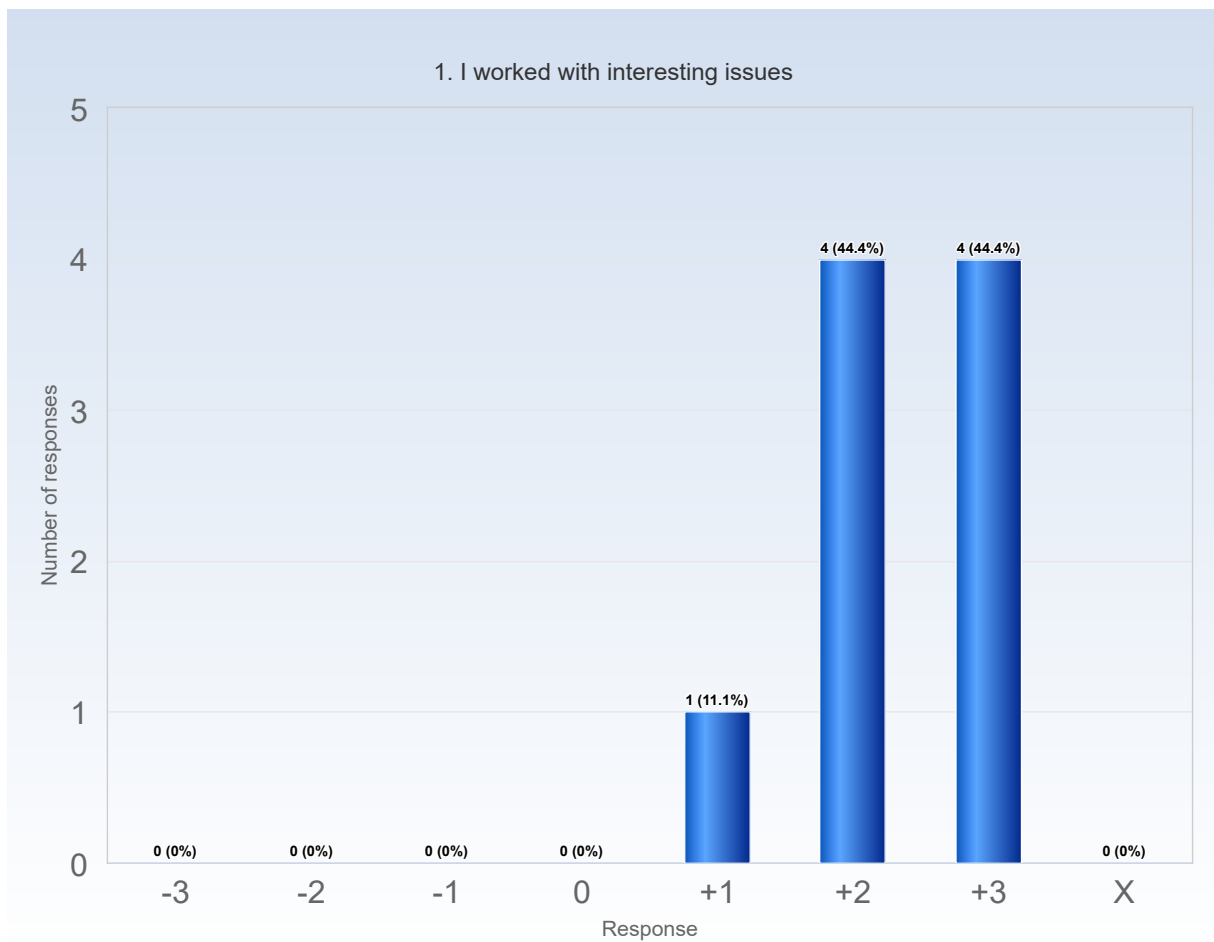
The diagrams below show the detailed response to the LEQ statements. The response scale is defined by:

-3 = No, I strongly disagree with the statement

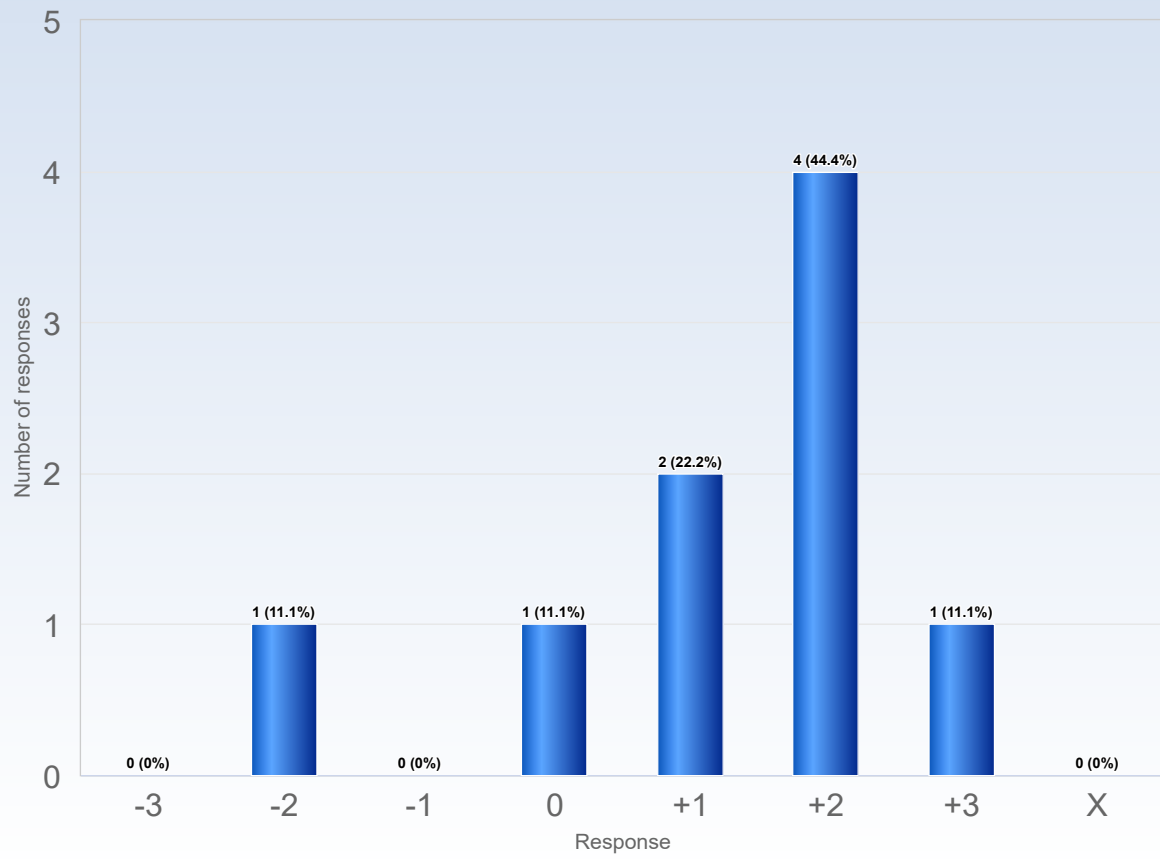
0 = I am neutral to the statement

+3 = Yes, I strongly agree with the statement

X = I decline to take a position on the statement



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



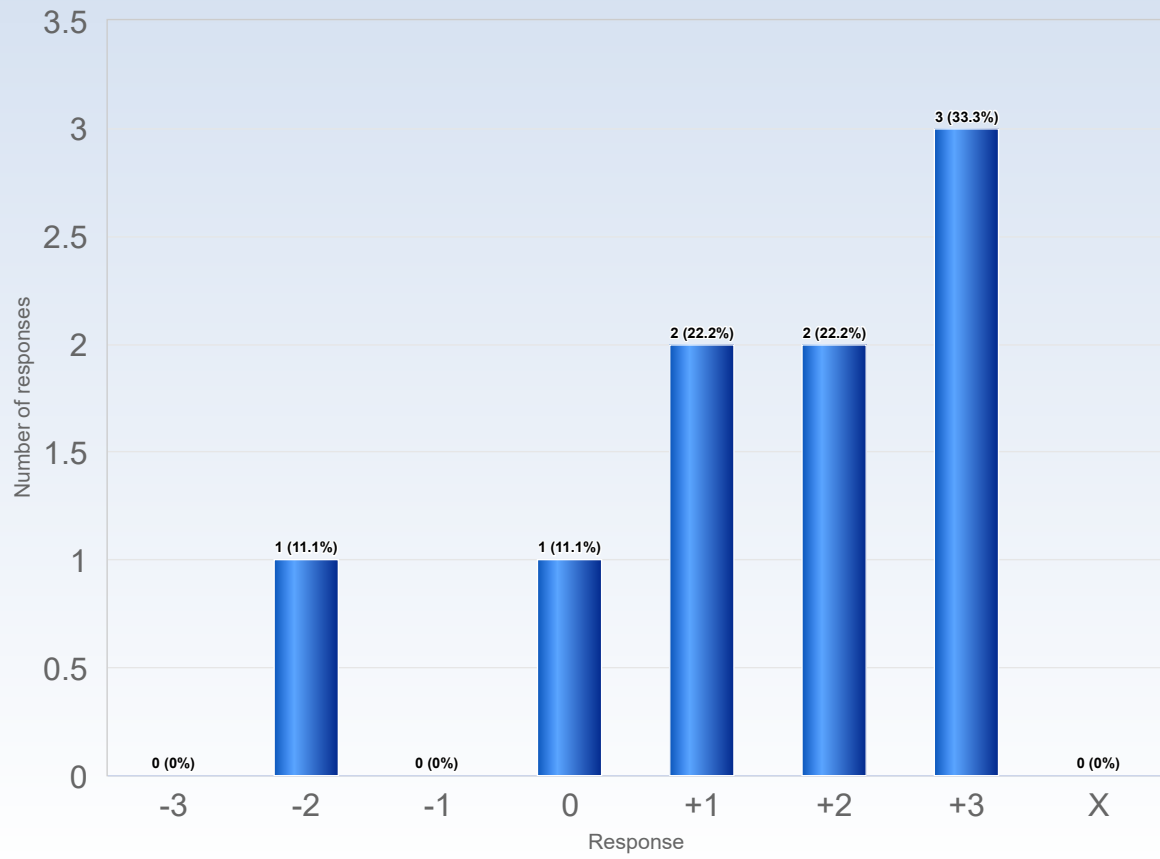
#### Comments

Comments (My response was: +2)

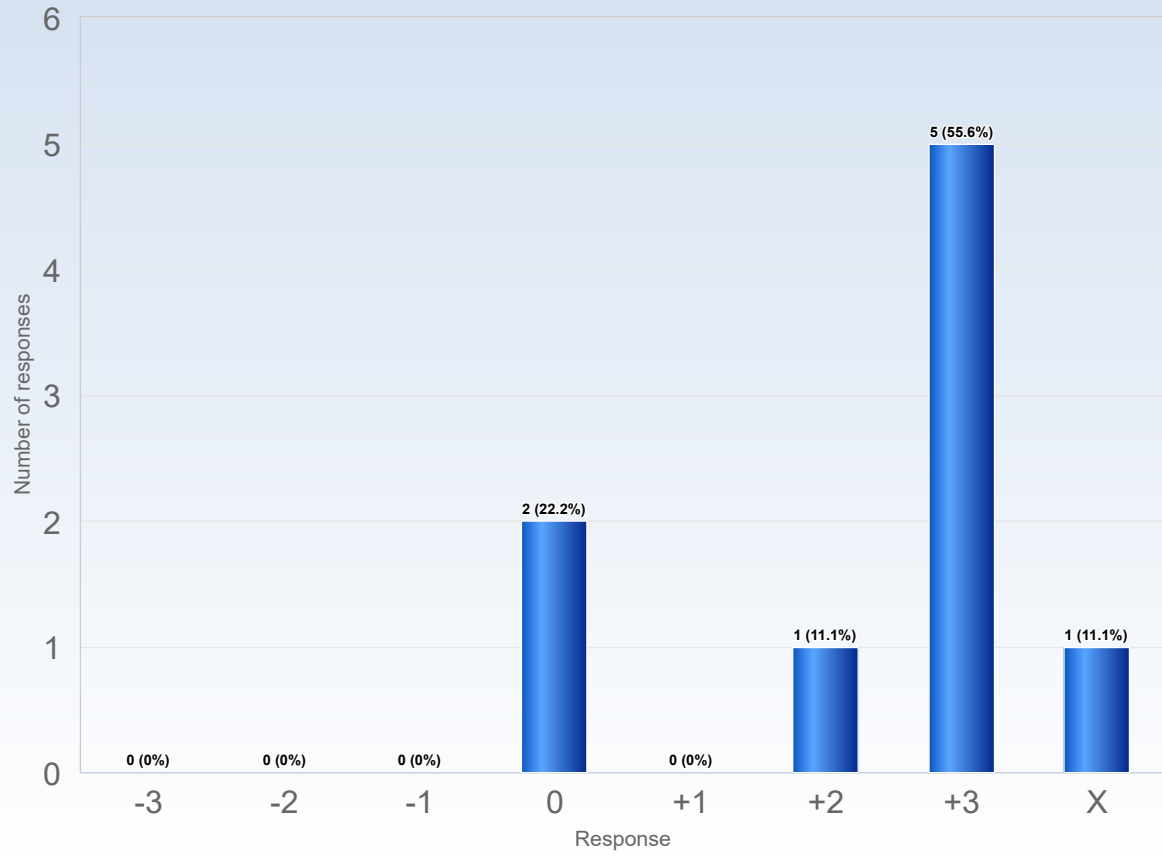
Lab 3 could be a little more challenging



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



16. The assessment on the course was fair and honest

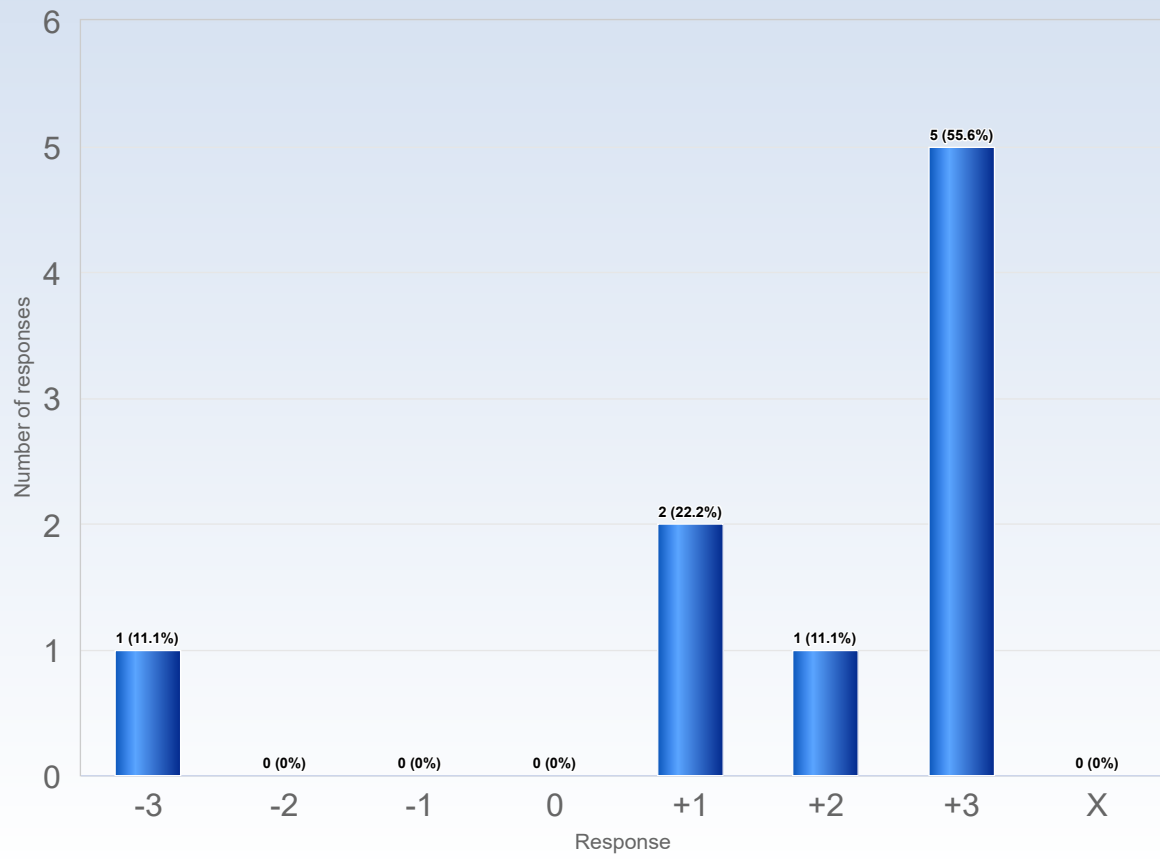


Comments

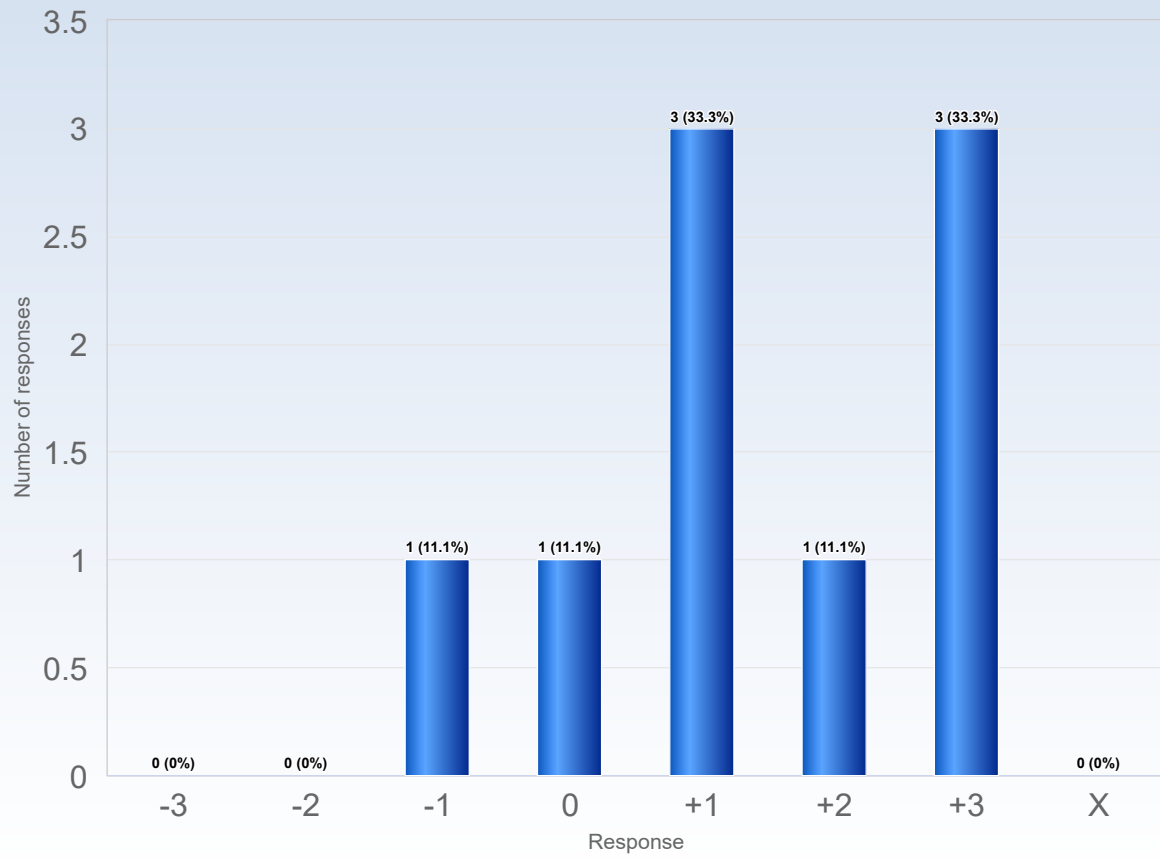
Comments (My response was: X )

Have not get any grade yet

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



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



Comments

Comments (My response was: +1)

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Karl seems to not have much time for this course because of other responsibilities, which makes it difficult to get support

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