Report - SF1811 - 2023-02-20

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.
Students' opinions have been collected through an LEQ questionnaire. The response rate was rather low. There has been a "kursnämnd", which has met once during the course and when the course was concluded.

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.)
I have offered office hours weekly during the course and prior to the exam, and more frequently if requested.

COURSE DESIGN
Briefly describe the course design (learning activities, examinations) and any changes that have been implemented since the last course offering.
This was the first time I gave this course in many years. I followed the design of last year and formed the lectures as I thought would be the best. Lectures were given in a traditional way. Exercise sessions were given in parallel in two groups. There are three compulsory homework assignments in addition to the final written exam.

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?
Based on the survey the students average workload was around 14 hours per week. There is a big spread. This is on a level which I think can be expected.

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?
The result on the exam in January was as follows: A 15%, B 17%, C 20%, D 17%, E 9%, Fx 6%, F 16%. In total 88 students wrote the exam. This performance is slightly lower than last year, but slightly higher than two years ago. It is my conclusion that the difficulty of the exam was acceptable.

STUDENTS´ANSWERS TO OPEN QUESTIONS
What does students say in response to the open questions?
There is overall a positive tone in the comments of the students. Students like the homework assignments, the exercise sessions and the lectures. Recorded lectures from an offering of a sister course from perevious years were available. This was appreciated of students who claimed there were time conflicts. One student asks for more focus on projects. We have deliberately left focus on projects to the continuation courses.

SUMMARY OF STUDENTS' OPINIONS
Summarize the outcome of the questionnaire, as well as opinions emerging at meetings with students.
The outcome of the questionnaire is that the setup of the course is working. I have been able to assist students when meeting them. One student asks for more help in the questionnaire. In my opinion, students have been offered help on a reasonable level.

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.
My overall impression is that the course has a functioning setup. The student group has a rather diverse background, coming from different programs. Overall, there seems to be a balance that works.

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?
No significant differences have been observed.

PRIORITIZED COURSE DEVELOPMENT
What aspects of the course should be developed primaily? How can these aspects be developed in short and long term?
The homework assignments could be more aligned with particular parts of the course. I could also develop the lectures further now that I have given the course once.

OTHER INFORMATION
Is there anything else you would like to add?
Attendance at lectures was not as high as I had expected. However, I did feel that the students in the classroom were active and found the lectures meaningful.
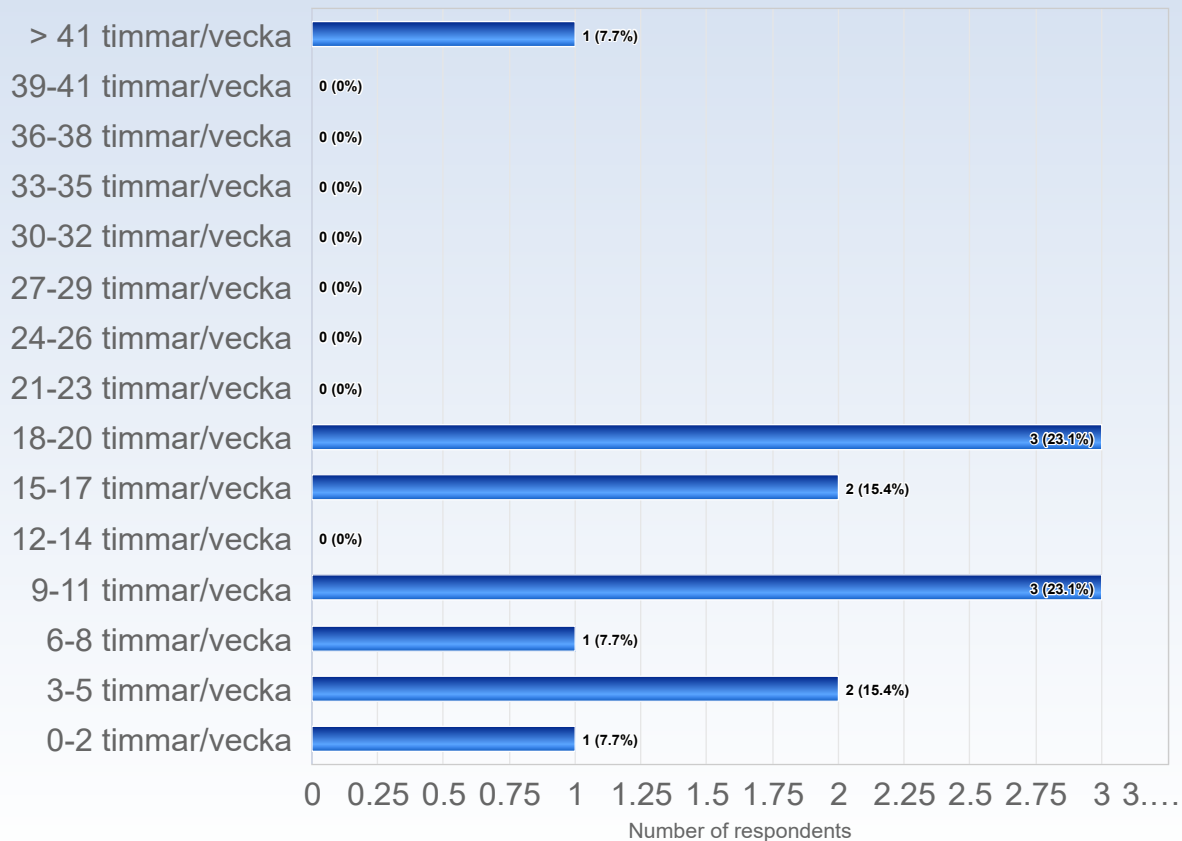
SF1811 - 2023-01-12

ESTIMATED WORKLOAD

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

Category	Value
> 41 timmar/vecka	1 (7.7%)
39-41 timmar/vecka	0 (0%)
36-38 timmar/vecka	0 (0%)
33-35 timmar/vecka	0 (0%)
30-32 timmar/vecka	0 (0%)
27-29 timmar/vecka	0 (0%)
24-26 timmar/vecka	0 (0%)
21-23 timmar/vecka	0 (0%)
18-20 timmar/vecka	3 (23.1%)
15-17 timmar/vecka	2 (15.4%)
12-14 timmar/vecka	0 (0%)
9-11 timmar/vecka	3 (23.1%)
6-8 timmar/vecka	1 (7.7%)
3-5 timmar/vecka	2 (15.4%)
0-2 timmar/vecka	1 (7.7%)

Number of respondents

Comments

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

had a busy semester, mostly studied what I needed for the homework

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

Fairly low effort given the number of HP allotted to this course.

I only watched the pre-recorded lectures and did the home assignments. So probably around 3-4 hours most weeks, and 6-7 hours when there was an assignment.

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.

Average response to LEQ statements - all respondents

— Medelvärde
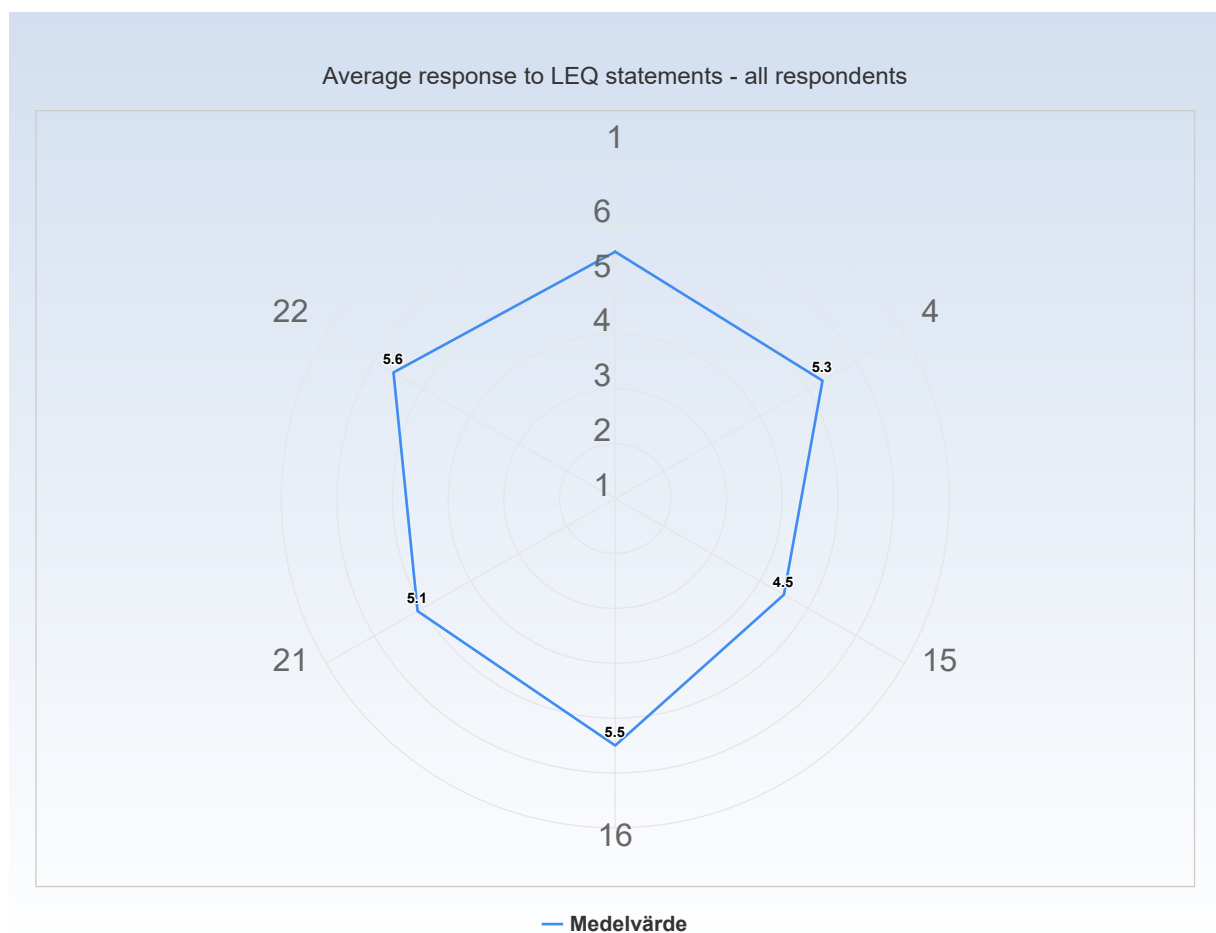
KTH Learning Experience Questionnaire v3.1.4

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.
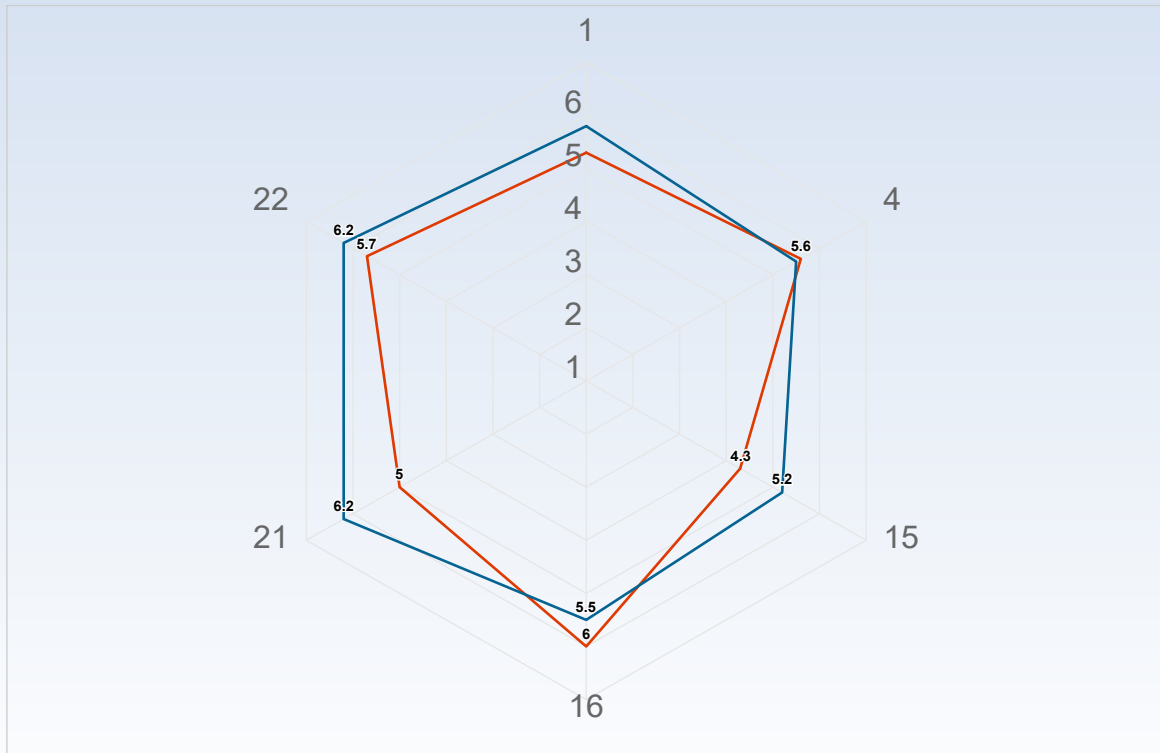

Ramsden, P. (2003). *Learning to Teach in Higher Education*, Chapter 6, pp. 84-105. New York: RoutledgeFalmer.

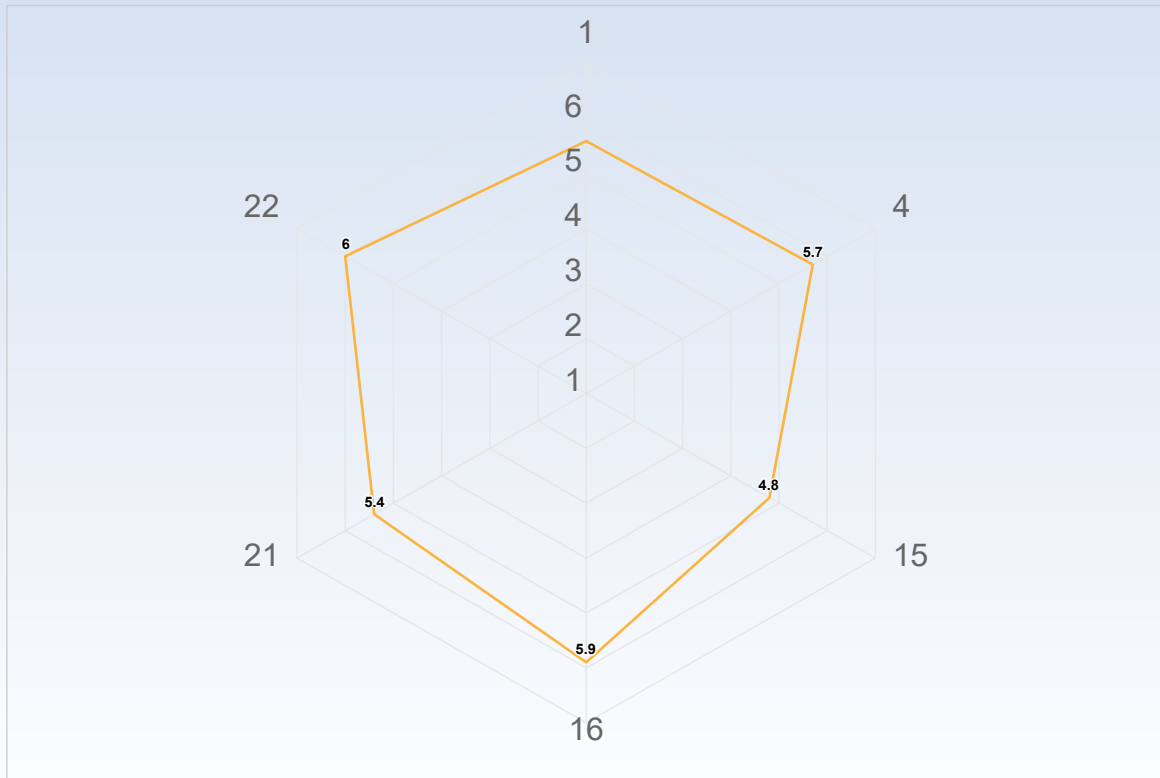Average response to LEQ statements - per gender
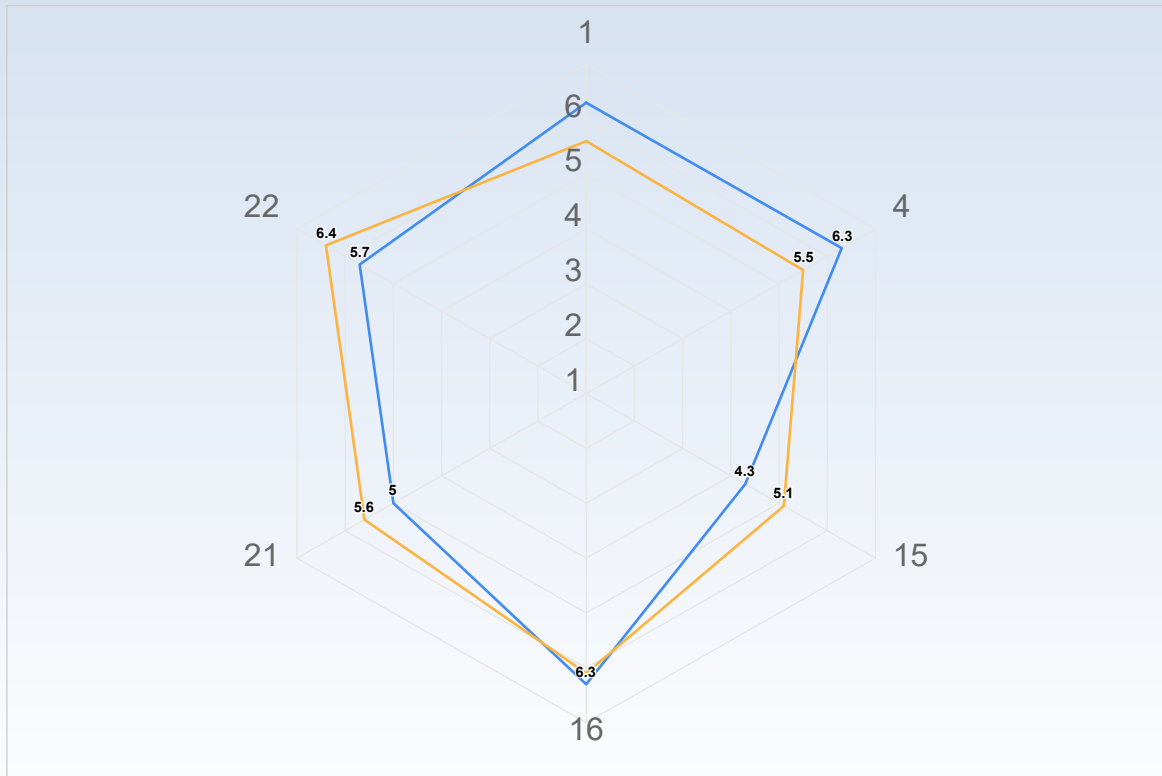
Kvinna — Man — Annat — Vill ej uppge

Average response to LEQ statements - per type of student

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

Average response to LEQ statements - per disability

Legend: — 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 course material was good so I did not need to attend any class

What was the best aspect of the course? (I worked: 9-11 timmar/vecka)
Övningarna var väldigt bra! Det var bra att det fanns inspelat material att tillgå när det var schemakrockar.
I liked the course book

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

What was the best aspect of the course? (I worked: 18-20 timmar/vecka)
Course literature and exam problems were similar - it did help to actually read the book (the compendium).

What was the best aspect of the course? (I worked: > 41 timmar/vecka)
Good lectures

What would you suggest to improve?

What would you suggest to improve? (I worked: 3-5 timmar/vecka)
The labs should be given significantly more focus in the future. I think most students would agree that the most interesting part of this course was the application of the methods to real-world problems. The first two labs felt very small and uninteresting however and given the intended workload of the course we could have had much larger assignments. This would also have been more interesting for the students overall.

What would you suggest to improve? (I worked: 9-11 timmar/vecka)
Att inlämningsuppgifterna var mer av olika typ. Dvs att inte både första och andra uppgiften innehåller simplex.
-

What would you suggest to improve? (I worked: 15-17 timmar/vecka)
A group work (teams of 4 or 5).

What would you suggest to improve? (I worked: 18-20 timmar/vecka)
Time in the schedule to work with the home assignments and be able to get help. I felt quite lost and did not know who to ask for help.

What would you suggest to improve? (I worked: > 41 timmar/vecka)
After lesson six, the tutor lost me. I did not understand anything

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)
Gå på övningarna.
Read the course book as well

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

What advice would you like to give to future participants? (I worked: 18-20 timmar/vecka)
Read the book, attend "övningar", and work with the recommended exercises.

Is there anything else you would like to add?

Is there anything else you would like to add? (I worked: 3-5 timmar/vecka)
I enjoyed the course; it was interesting to learn about different optimization problems and techniques for solving them.

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

Is there anything else you would like to add? (I worked: > 41 timmar/vecka)
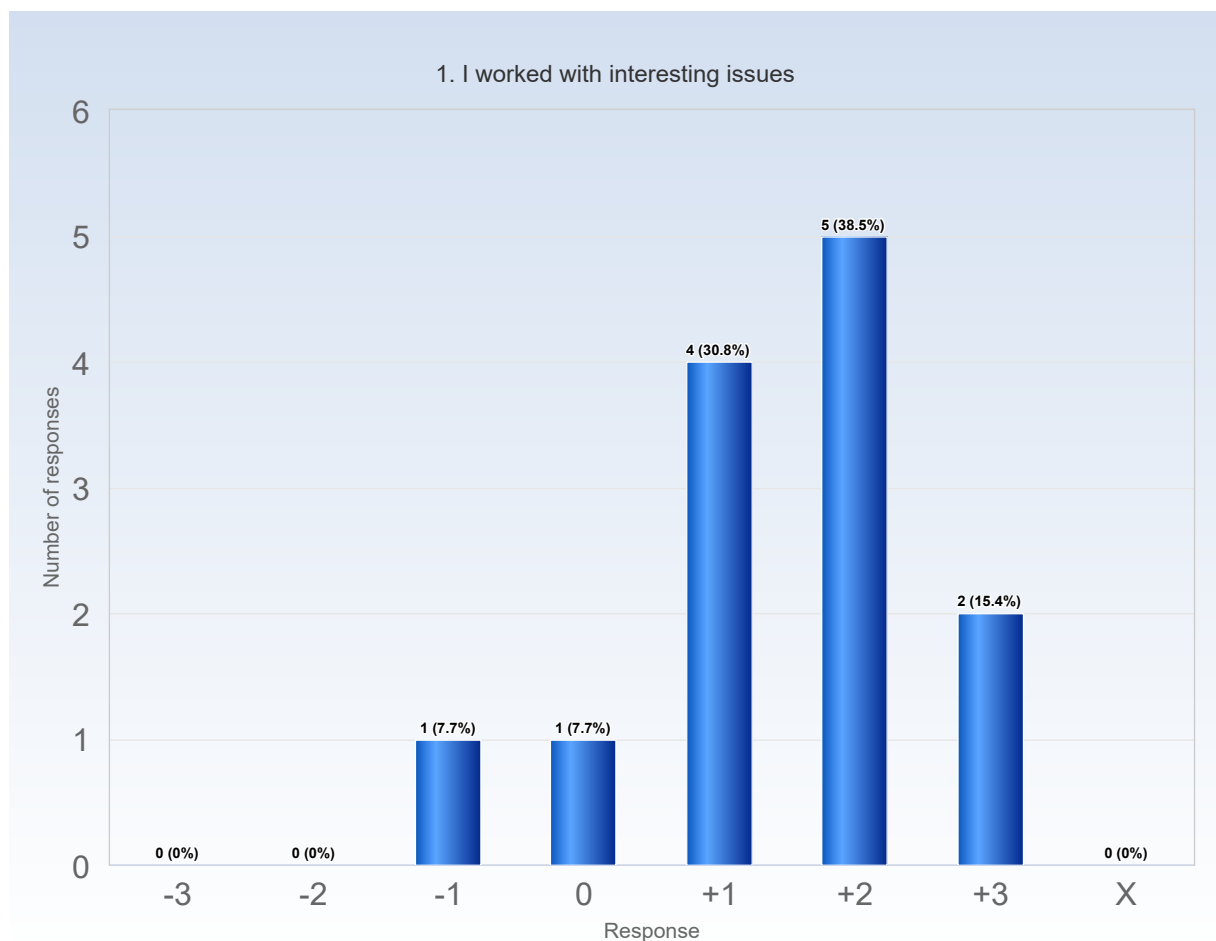Please give better help.

SPECIFIC QUESTIONS

RESPONSE DATA

The diagrams below show the detailed response to the LEQ statements. The response scale is defined by:
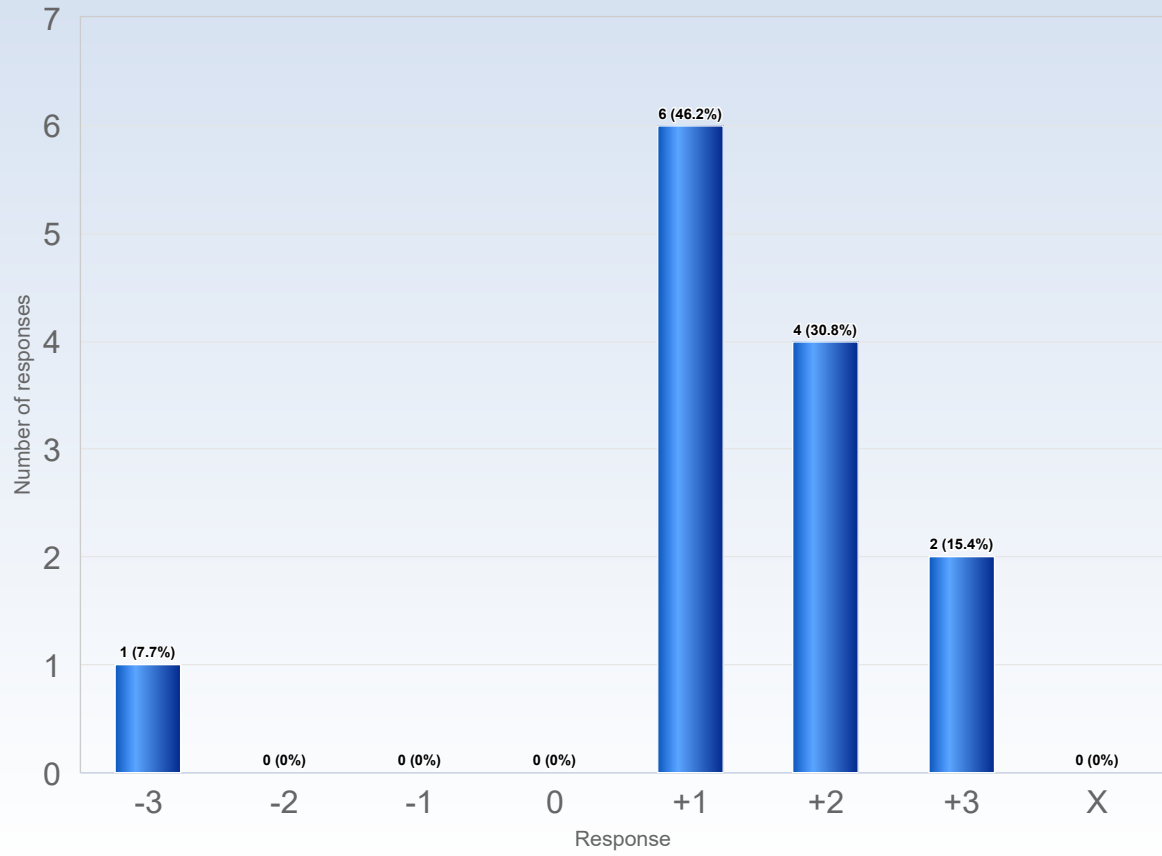
-3 = No, I strongly disagree with the statement
0 = I am neutral to the statement
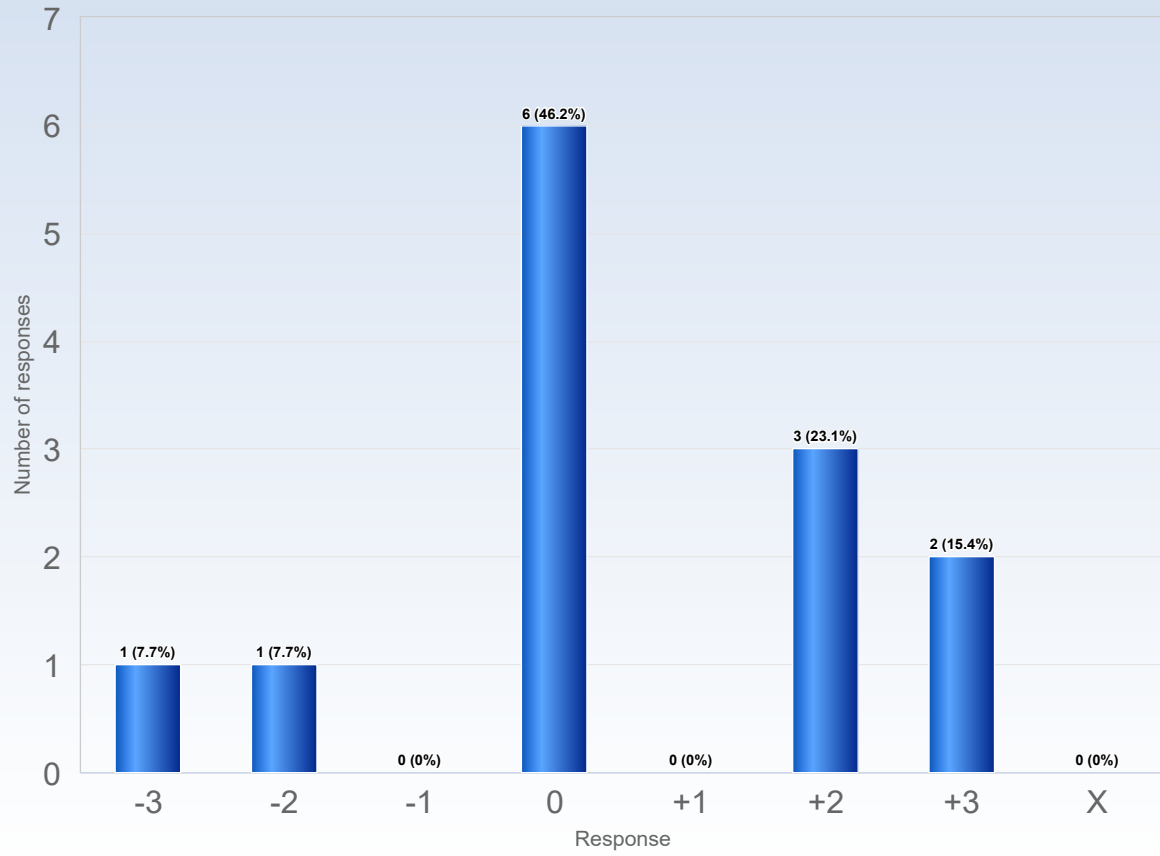+3 = Yes, I strongly agree with the statement
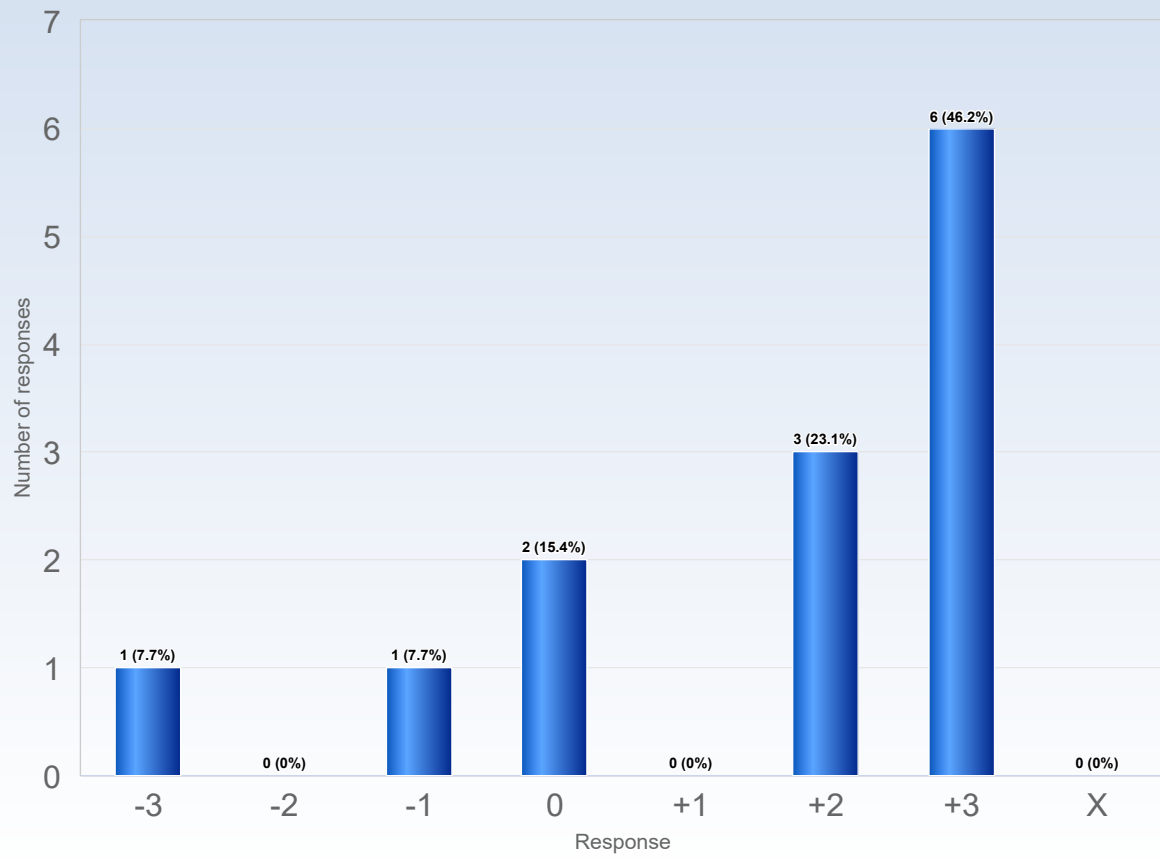
X = I decline to take a position on the statement

1. I worked with interesting issues

4. The course was challenging in a stimulating way

Number of responses

Response	
-3	1 (7.7%)
-2	0 (0%)
-1	0 (0%)
0	0 (0%)
+1	6 (46.2%)
+2	4 (30.8%)
+3	2 (15.4%)
X	0 (0%)

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

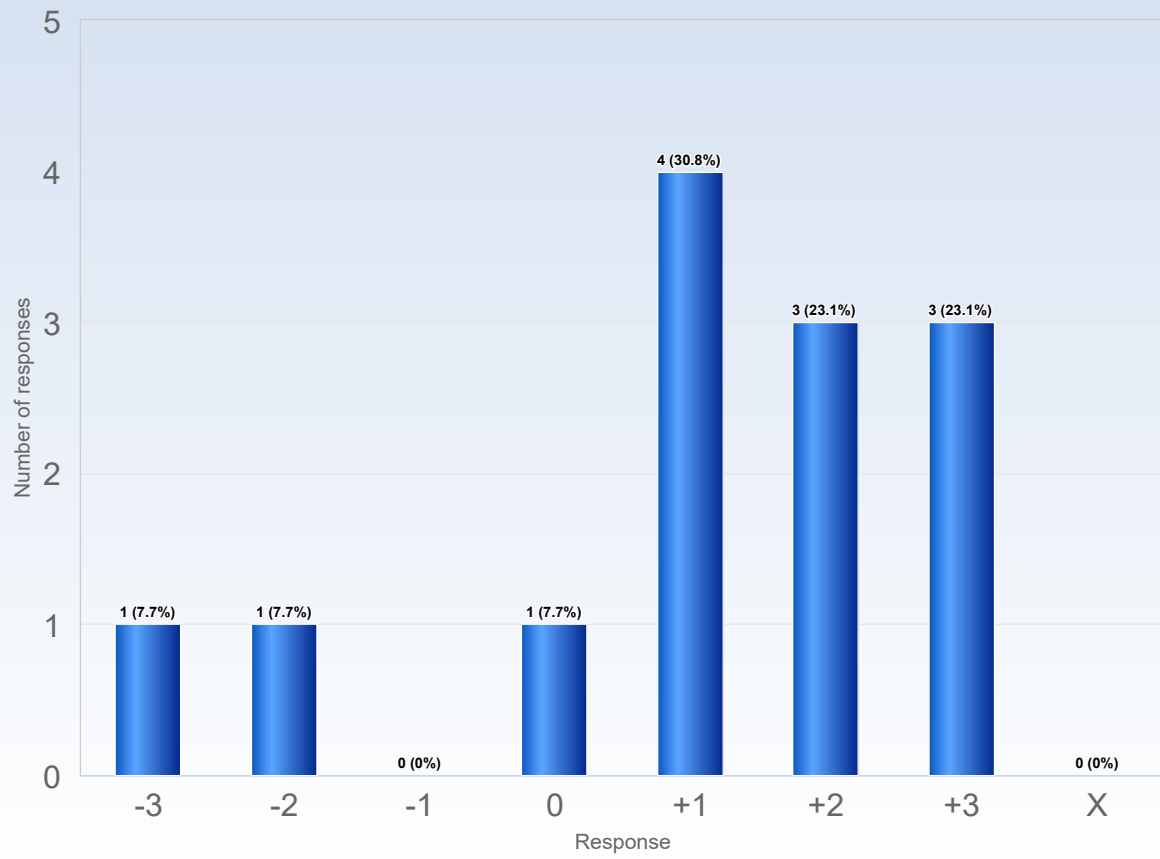## 16. The assessment on the course was fair and honest

Comments

Comments (My response was: 0)

Myself and several others I spoke to found the grading of the labs quite arbitrary. Apparently one of the TAs were more strict than the other.

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

Number of responses

Response	
-3	1 (7.7%)
-2	1 (7.7%)
-1	0 (0%)
0	1 (7.7%)
+1	4 (30.8%)
+2	3 (23.1%)
+3	3 (23.1%)
X	0 (0%)

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