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## Report - AH2923 - 2020-02-26

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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.

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

Alizadeh Khameneh, Amin (amin.alizadeh.khameneh@wsp.com), Milan Horemuz <milan.horemuz@abe.kth.se>

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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 students were given possibility to fill in LEQ via KTH-social, 57% answered.

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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.)**

No special meetings for course evaluation, but frequent contact with the students during labs.

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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 lectures, computer labs and a field exercise.

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**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?**

Yes, the workload indicated by students is about 15 hours/week.

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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?**

All students that participated in the exam passed the course.

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**STUDENTS' ANSWERS TO OPEN QUESTIONS**

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

The LEQ report with all comments is attached to this analysis.

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#### **SUMMARY OF STUDENTS' OPINIONS**

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

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Overall, the responses were positive.

Some students asked for including oral presentation and more examples in lectures.

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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.**

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It was enjoyable to work with motivated the students with different background (coming from different programs).

They were enthusiastic and they wrote well formulated reports.

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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?

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We could not see any significant differences between different groups.

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#### **PRIORITIZED COURSE DEVELOPMENT**

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

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Examples will be added in the lectures to illustrate concept of least-squares adjustment.

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## AH2923 - 2019-06-07

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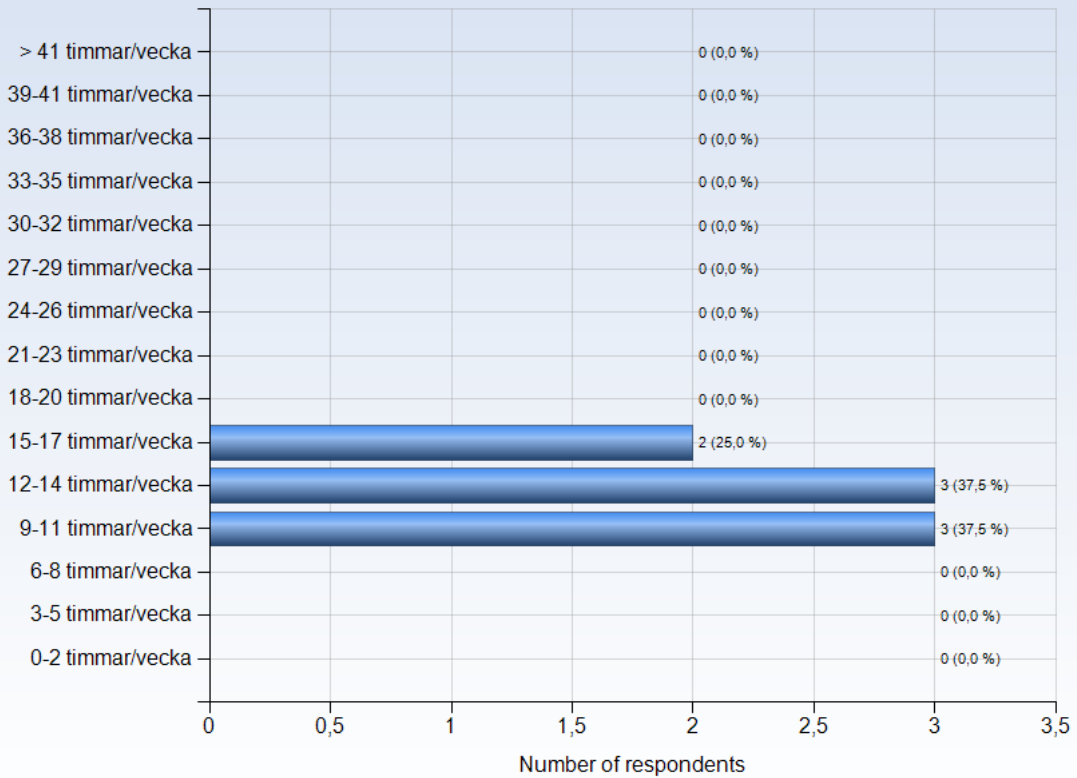
Antal respondenter: 14  
Antal svar: 8  
Svarsfrekvens: 57,14 %

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## ESTIMATED WORKLOAD

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



### Comments

Comments (I worked: 9-11 timmar/vecka)

Outside the lectures, the lab took about 4 to 5 hours to complete.

includes 4 hours of lectures + 3 hours of lab each week, with another 2-4 hours to finish the assignments

The total workload is ok for me. But I prefer one more tutored computer lab session before each submission, in order to discuss the results.

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

Adequate.

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

The course was great and the learning material was good. The professor was very helpful and understanding. He was also very knowledgeable on the subjects that we were covering.

Reasonable and evenly distributed workload.



## LEARNING EXPERIENCE

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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:

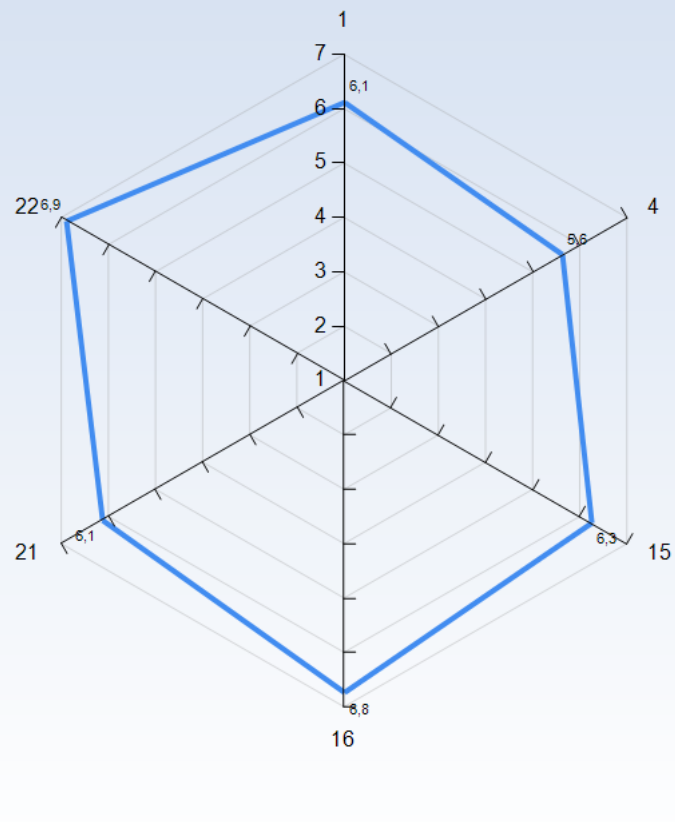
1 = No, I strongly disagree with the statement

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





## **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.

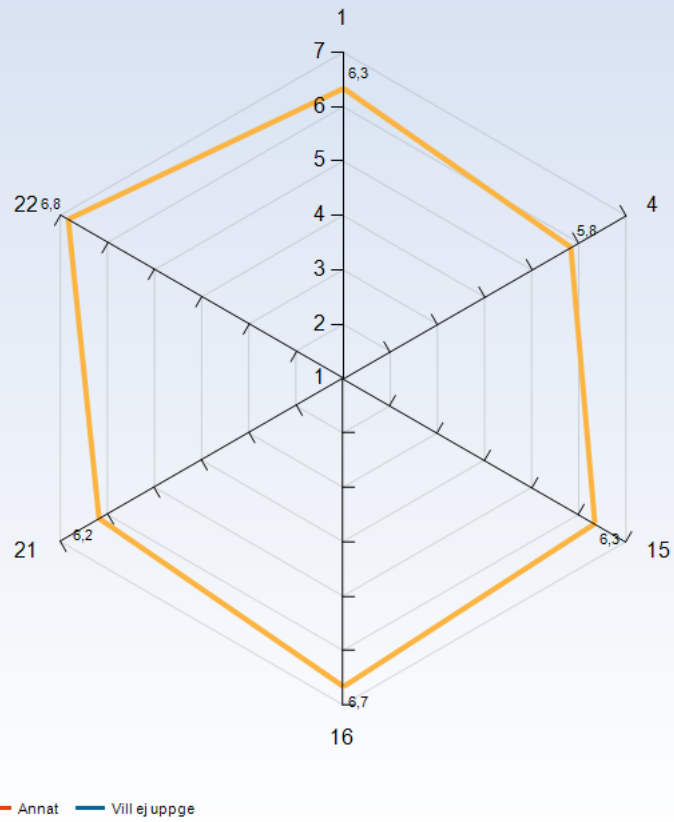
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

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.

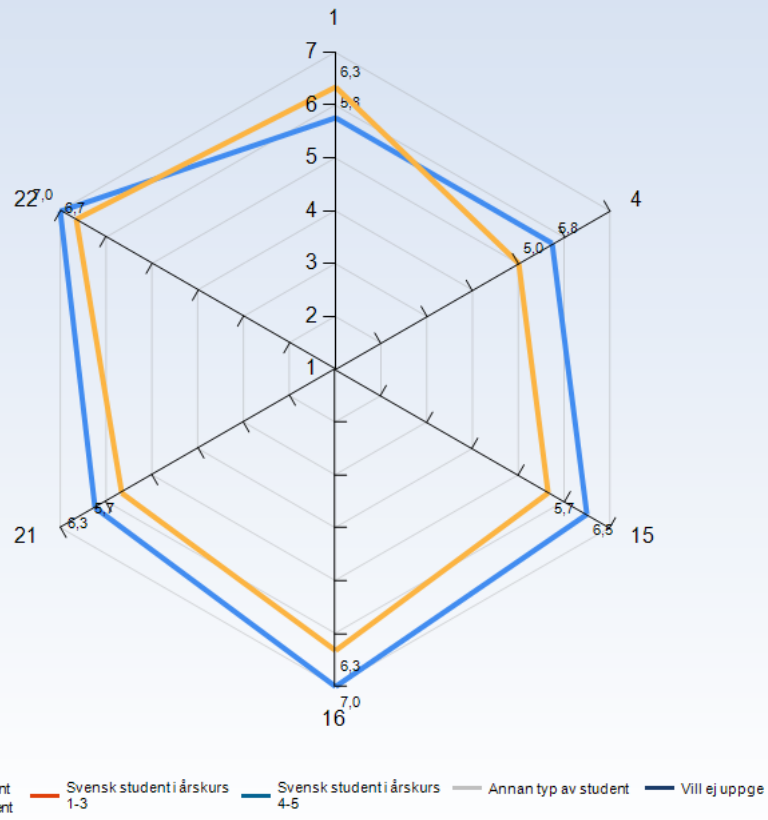
### Average response to LEQ statements - per gender



#### Comments

Comments (I am: Man)  
Adequate.

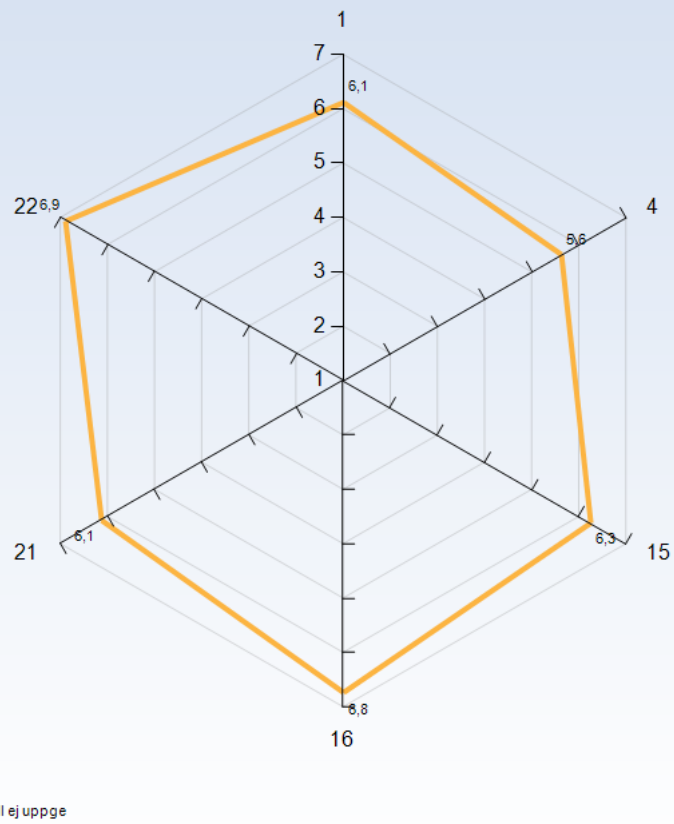
### Average response to LEQ statements - per type of student



### Comments

Comments (I am: Internationell utbytestudent)  
Adequate.

### Average response to LEQ statements - per disability



Comments



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## GENERAL QUESTIONS

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### What was the best aspect of the course?

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

I really enjoy this course overall, maybe one of the most interesting i had in KTH. I especially liked the content of the course. It covered the main notions without going into unnecessary details

computer assignments

Plenty of exercises.

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

Laboratories and field exercise.

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

Interesting topics, clear lab instructions, great with intermediate results in labs.

### What would you suggest to improve?

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

I would suggest having more topic (or project) based assignments, to make it more intuitive.

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

Introduce some kind of oral presentation.

- Exam should not weight more than 50 %

Increase the weight of the labs, and introduce other components

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

Nothing, everything was good, the professor the material everything.

More examples in the lecture slides to illustrate problems and how to solve them.

### 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)

Just follow the instructions and it will be fine

go to the labs to ask questions about the assignments

Discuss with teacher and friends.

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

Complete all the exams till the week before the exam, so that you can then focus on studying your notes.

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

To take this course.

Attend the lectures, it makes the lab instructions more clear.

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

Is there anything else you would like to add? (I worked: 12-14 timmar/vecka)

The last lecture about ethical stuff and thesis ideas was relevant.

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

Definitely the most fun course during this spring term.

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## 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:

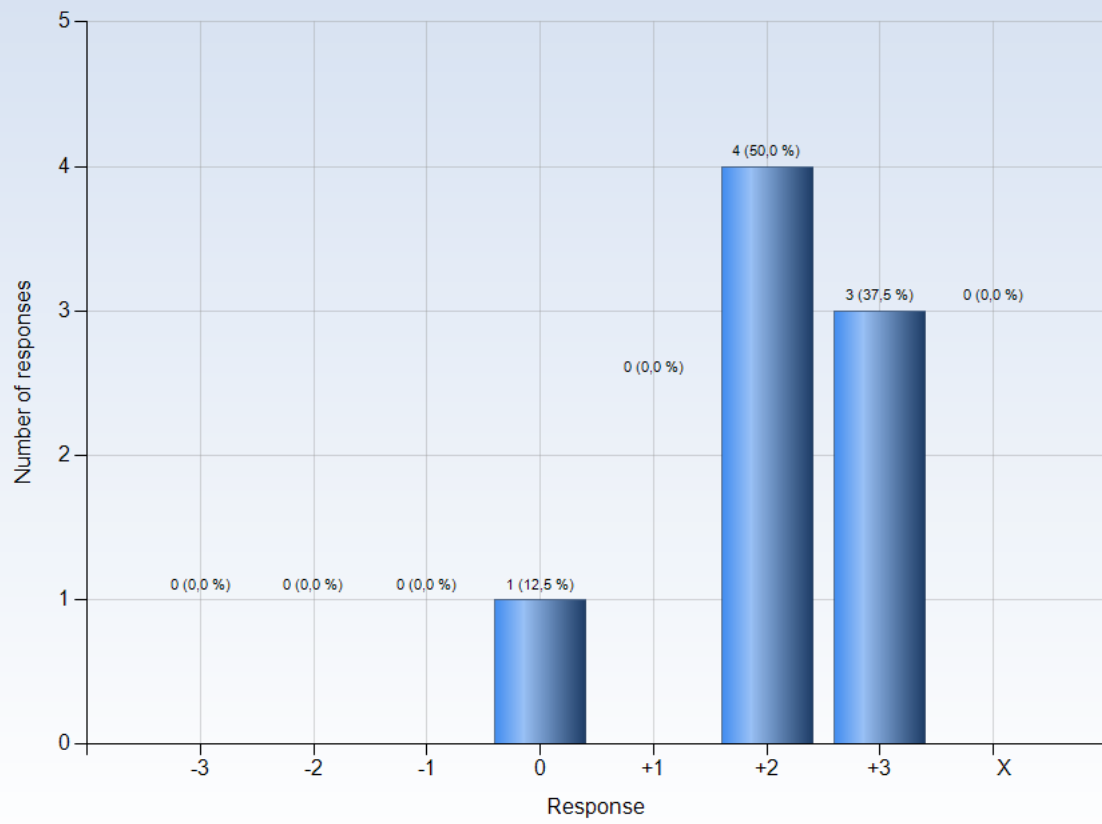
-3 = No, I strongly disagree with the statement

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

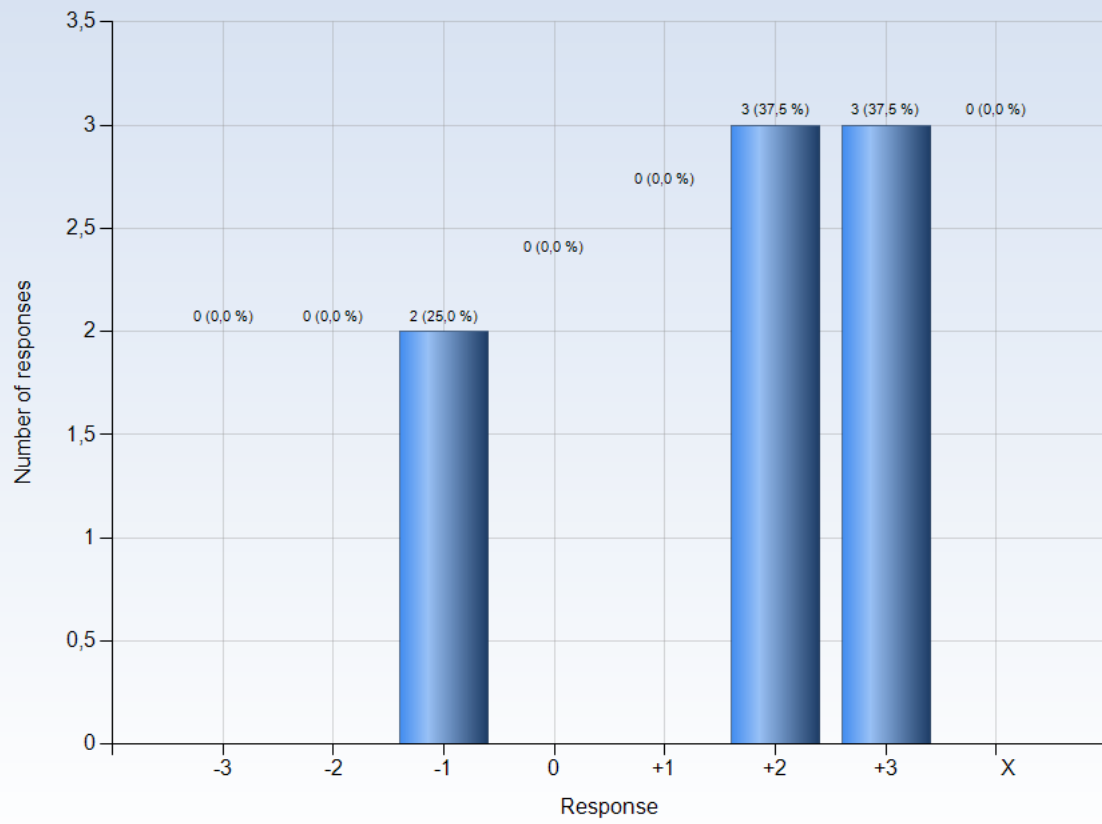
### 1. I worked with interesting issues



Comments

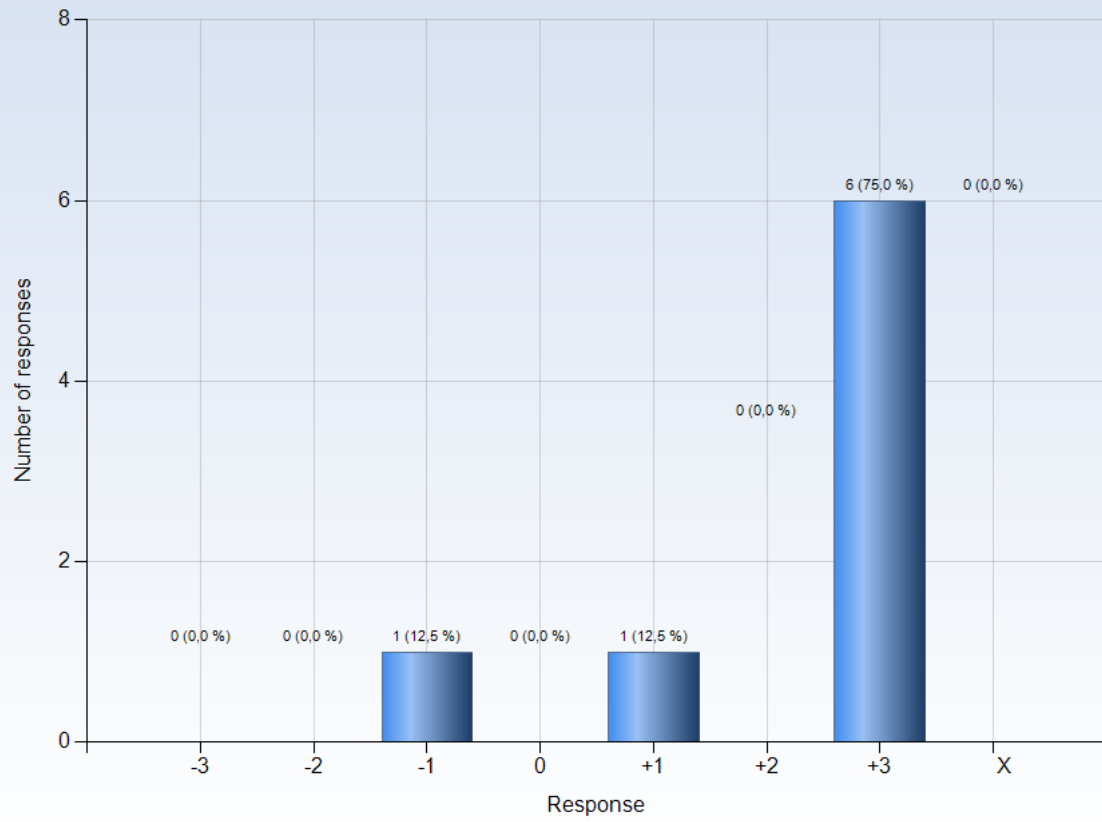


#### 4. The course was challenging in a stimulating way



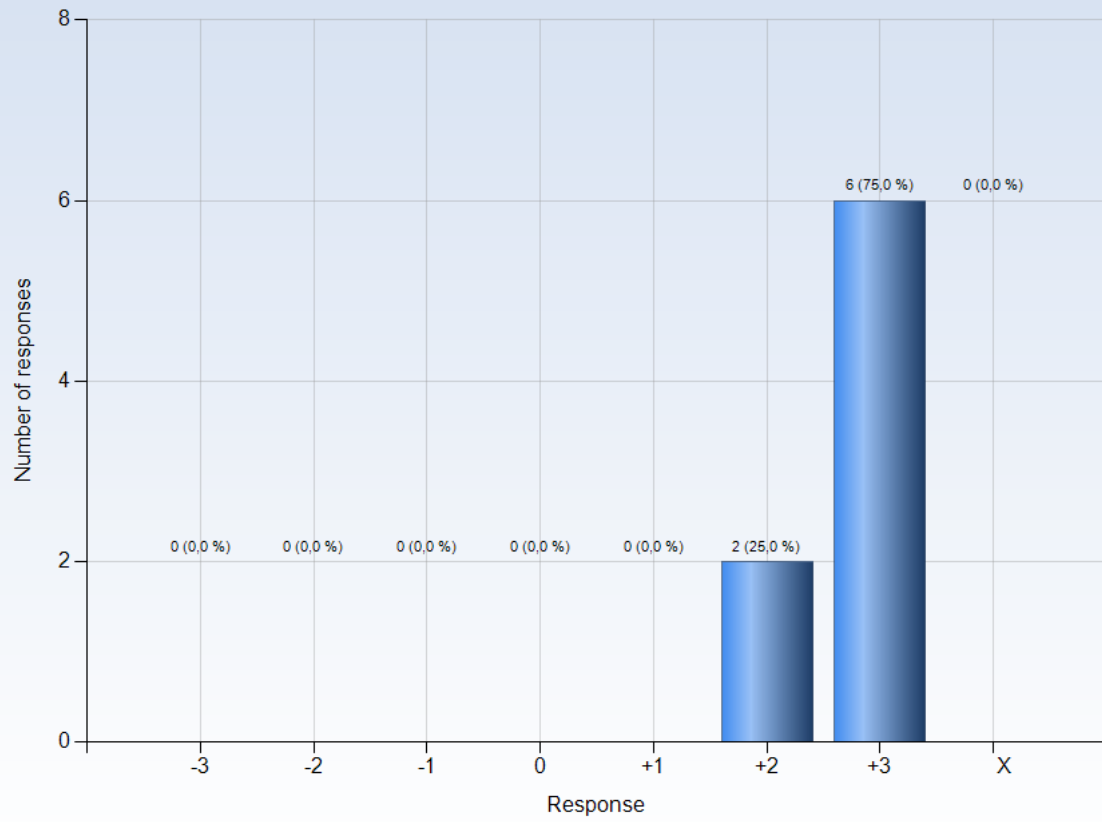
Comments

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



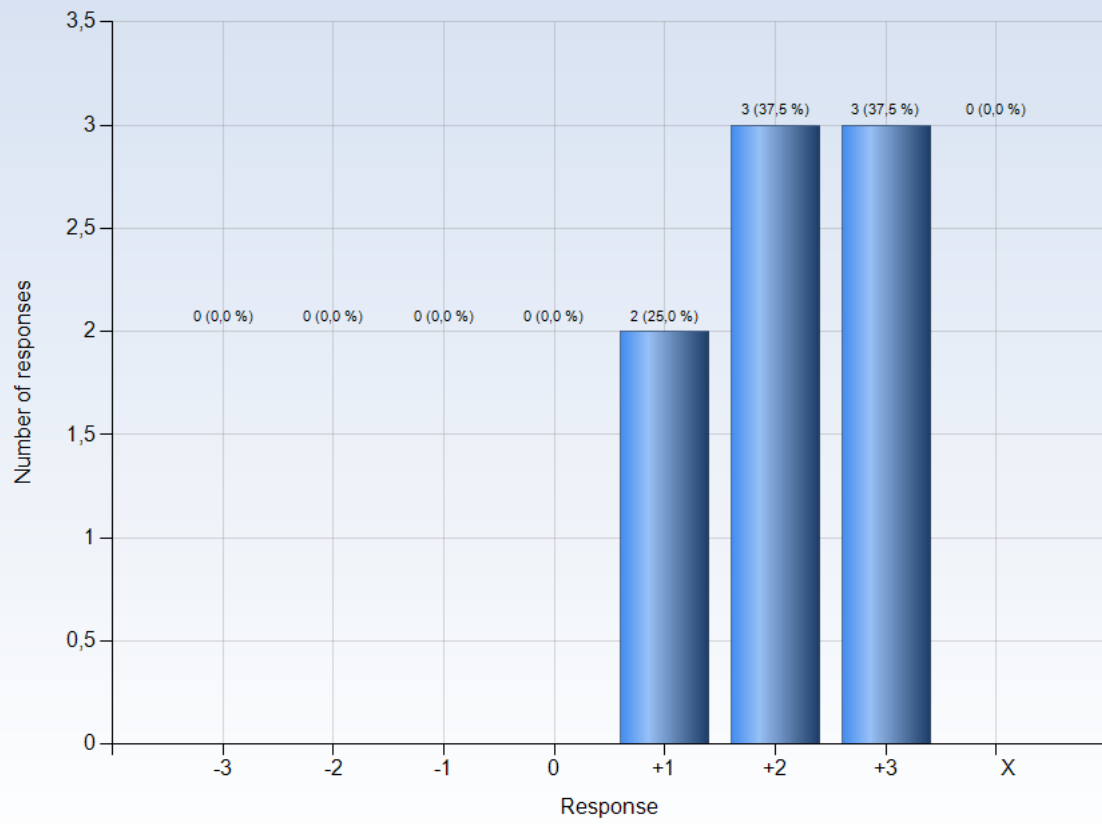
Comments

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



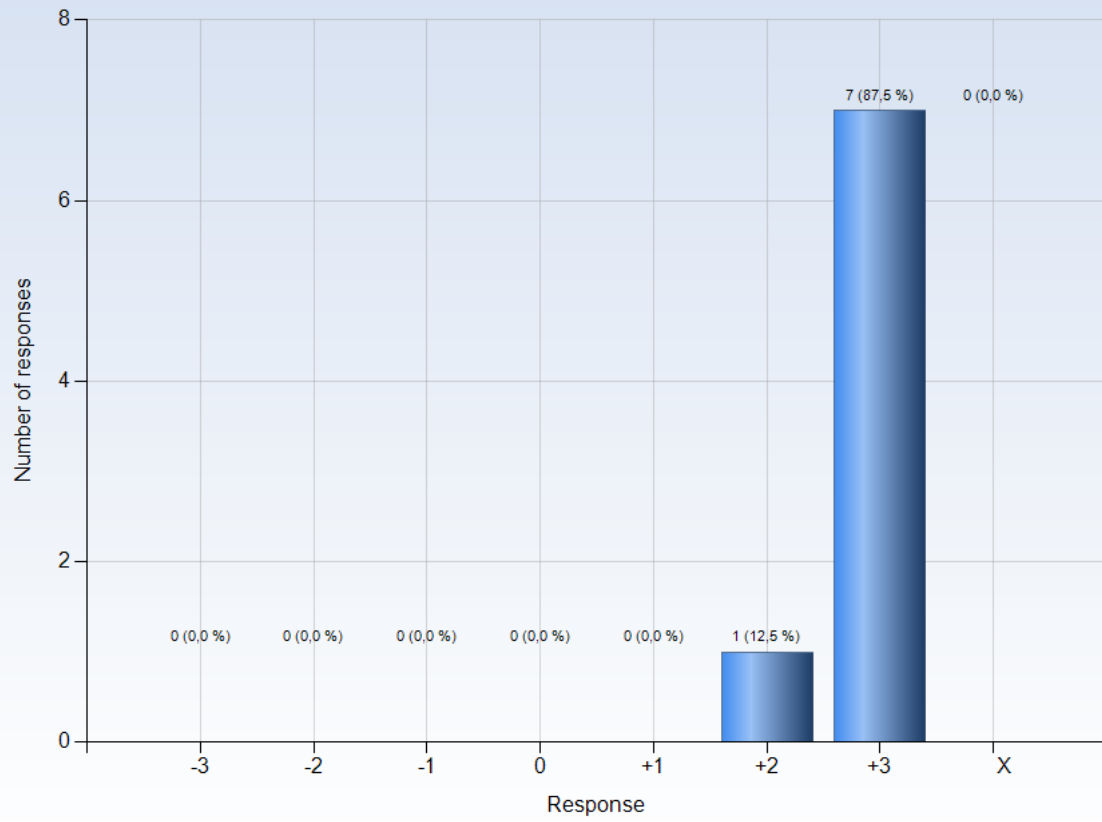
Comments

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



Comments

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



Comments