

Report - AF2610 - 2024-02-15

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

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):

Johan Spross, spross@kth.se

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.

Two student representatives, 1M and 1F, were elected by the students at the first lecture. Students comments were collected through a questionnaire at the end of the course (5 out of 23 responded). The result was discussed with the student representatives at a course evaluation meeting. Due to the limited number of respondents, the evaluation was mostly qualitative. Too little data to see differences in gender and disability.

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.)

A meeting with the two student representatives was arranged after the questionnaire results were available. Examiner and course responsible represented the teachers. The outcome of the questionnaire was discussed and a list of action points for upcoming years was prepared.

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 on-campus lectures (+one online) and workshops, in which the students solve typical rock engineering tasks that one would do in a tunnel project. The outcome is reported in 4 assignment reports, which are graded. There is a final exam in a classroom focusing on theoretical concepts. The final grade is weighed between the assignments and the final exam. This year, a major revision of the grouting module was made, with new teachers. A site visit was arranged, at Gullmarsplan.

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?

The students report a little bit higher work load than the expected workload for a 50% study activity, though hard to draw conclusions from only 5 respondents. The content and work load was the same as last year, which had more respondents and less workload reported.

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 students results were as expected.

STUDENTS' ANSWERS TO OPEN QUESTIONS

What does students say in response to the open questions?

the assignments were really good preparation for the exam. The site visit was very appreciated, both for technical quality and arrangement. Some comments on the tight deadlines in December. See details in appended survey.

SUMMARY OF STUDENTS' OPINIONS

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

Students think the course is very good, but that there are some opportunities for improvement to make it even better, listed below.

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.

The teachers are happy with the present course and the students' results.

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?

The learning environment seems very good, based on the very positive feedback in the LEQ. (Too few respondents to draw detailed conclusions.)

PRIORITIZED COURSE DEVELOPMENT

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

For upcoming years we will consider:

- Revise the order of content. Assignment 4 needs more time in the end. Can some theory lectures be put in the last week to free up some time there to complete the last report after the last workshop?
- Provide more detailed guideline at the first lecture about what is expected from reports in terms of possibility to review.
- Clarify Assignment 1 instructions about whether the two parts consider the same tunnel or not. Consider merging the two blasting lectures.
- The sustainability module may need an update. We can consider inviting Prof Anna Björklund to co-arrange an interactive workshop togetherwith Fredrik, instead of just having a lecture.

AF2610 - 2024-01-04

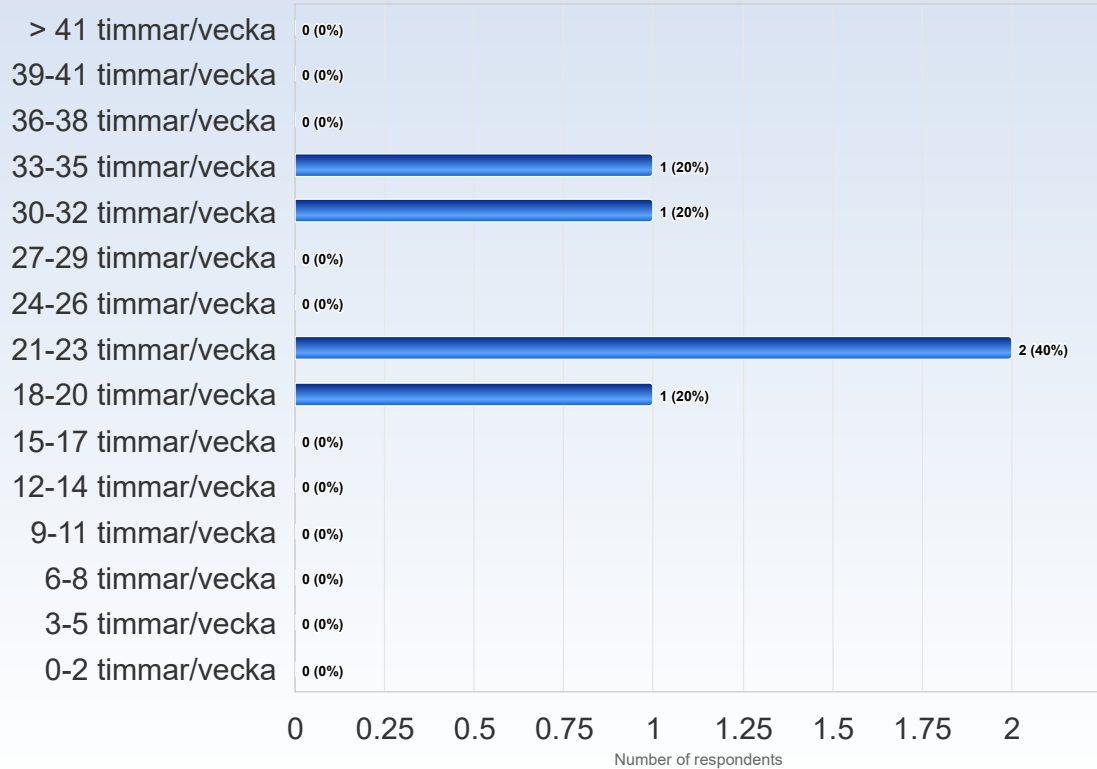
Antal respondenter: 24

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Svarsfrekvens: 20,83 %

ESTIMATED WORKLOAD

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



Comments

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

The most time got into working with the assignments but also attending the lectures and workshops

Comments (I worked: 33-35 timmar/vecka)

From the onset, this course was structured insuch a way that active participation was needed from the student. I spent most of my personal time working on the projects.

LEARNING EXPERIENCE

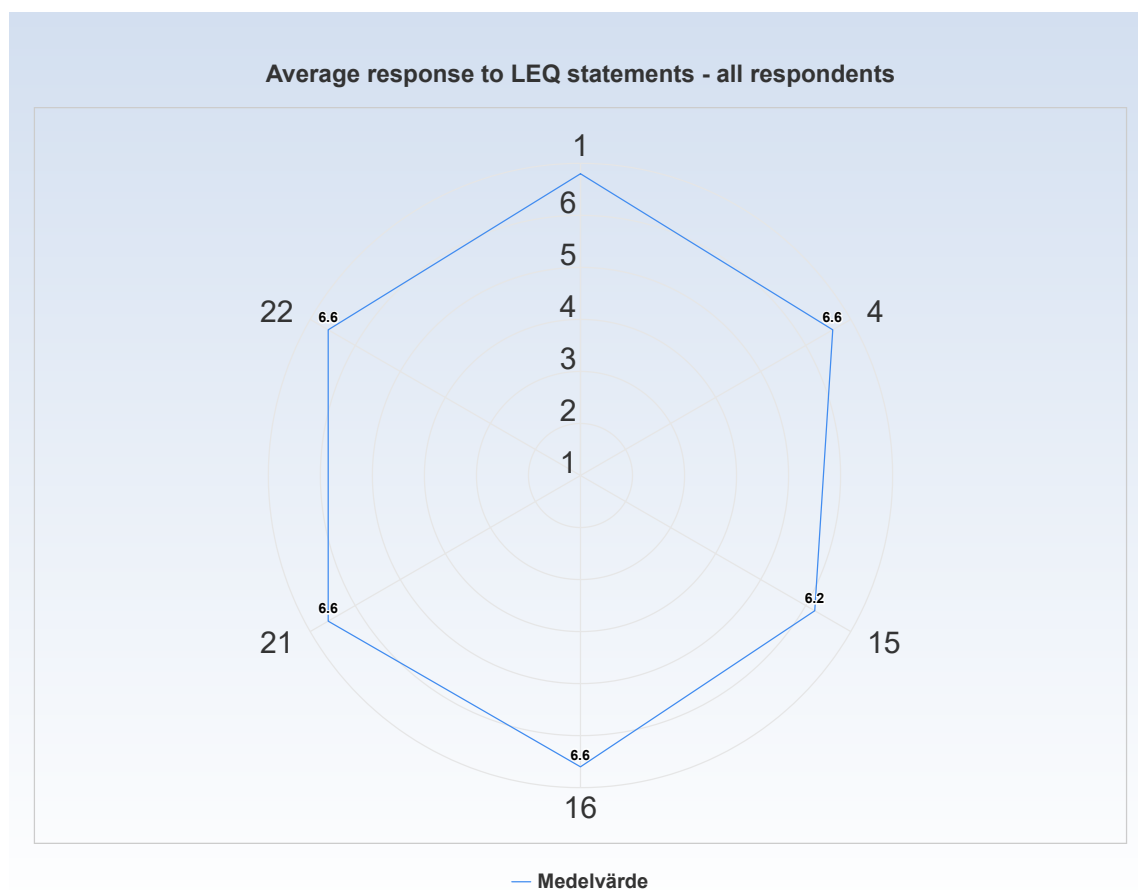
The polar diagrams below show the average response to the LEQ statements for different groups of respondents (only valid responses are included). The scale that is used in the diagrams is defined by:

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.

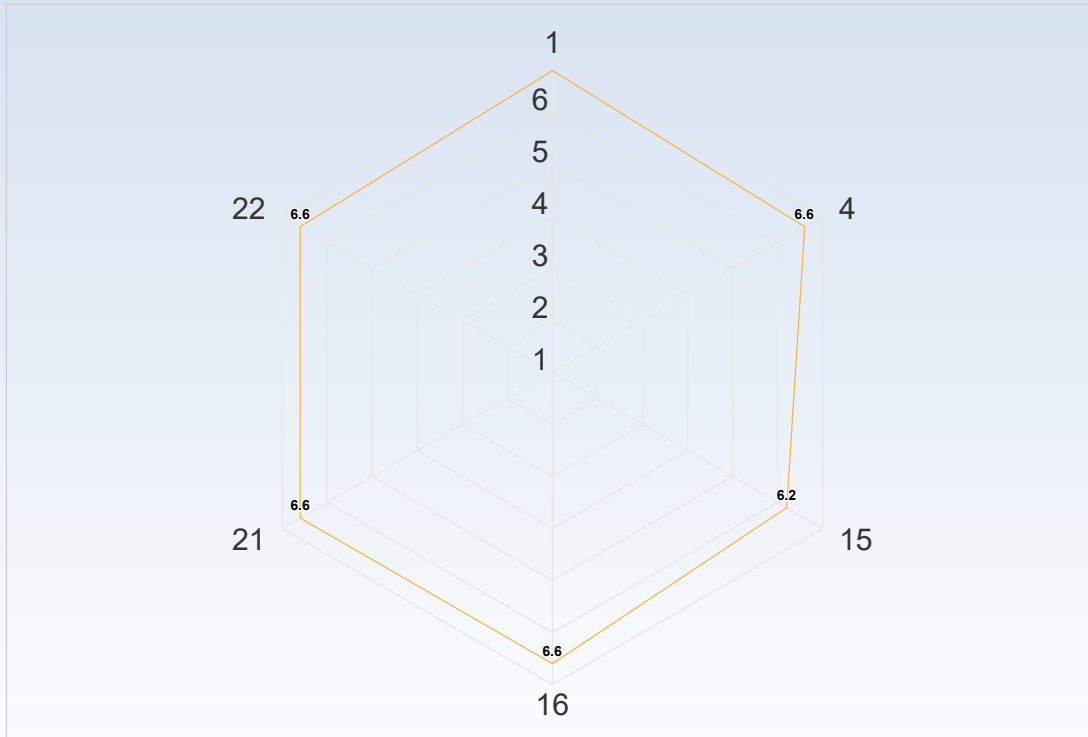
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

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.

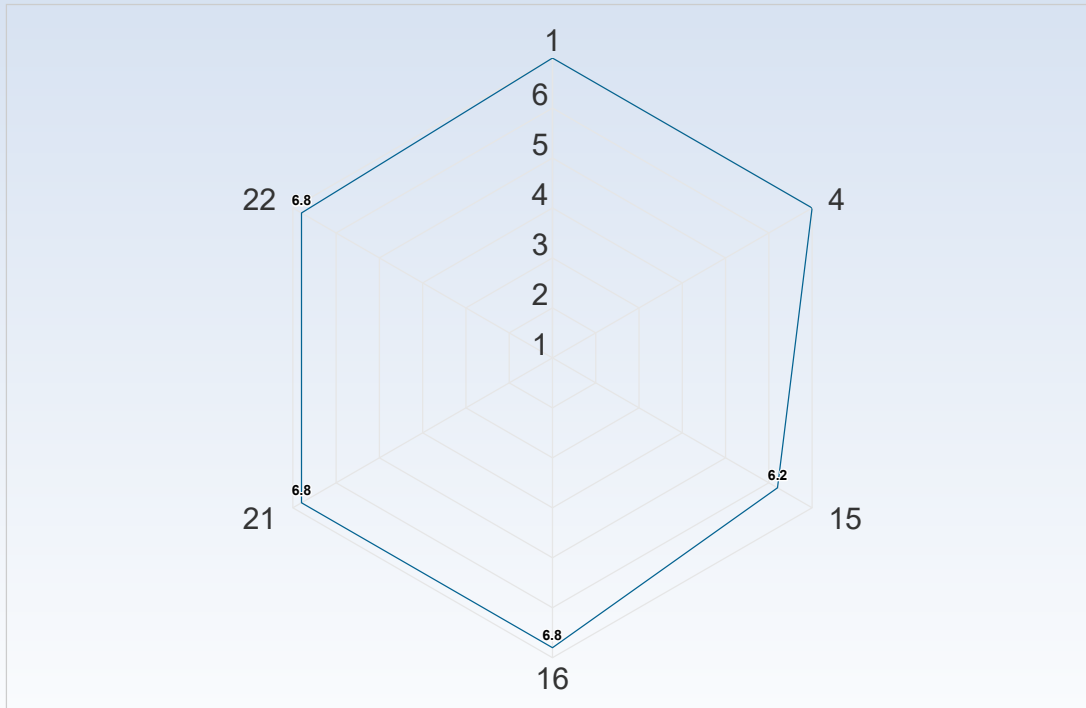
Ramsden, P. (2003). *Learning to Teach in Higher Education*, Chapter 6, pp. 84-105. New York: RoutledgeFalmer.

Average response to LEQ statements - per gender



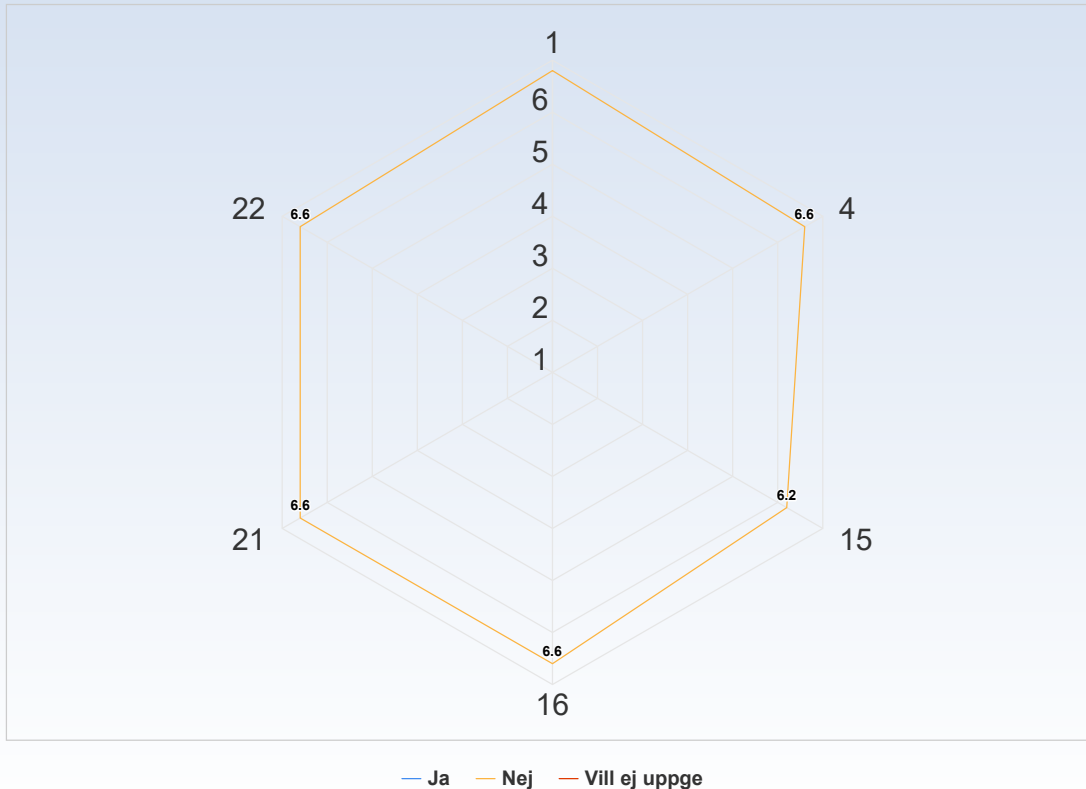
— Kvinna — Man — Annat — Vill ej uppge

Average response to LEQ statements - per type of student



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

Average response to LEQ statements - per disability



GENERAL QUESTIONS

What was the best aspect of the course?

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

The site visit was really fun!

Site visit with interesting conditions - ground freezing and excavation of a long shaft all the way to the surface. It was really exciting to see all of this in person.

All lectures and workshops were well organized and prepared.

What was the best aspect of the course? (I worked: 30-32 timmar/vecka)

Very interesting and fun to be able to relate to real projects. Good lectures for the most part.

What was the best aspect of the course? (I worked: 33-35 timmar/vecka)

The course organization was very good and made it easy for me to follow the course in terms of thematic modules. Also, I think the study visit to OHLA was the highlight of the course since it put most of the tunneling concepts into perspective. From the site visit presentation, the only technique we had not learned about in class was the wire cutting of the rock. Every other tunneling technique was covered by the course. I also enjoyed the lectures! Also, I think that not publishing our exercise results before the presentation is a good idea because it allows not to doubt our results.

What would you suggest to improve?

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

Perhaps the communication between the different lecturers since we were taught the same concepts slightly differently by different teachers. Perhaps showing a real-life example of a bill of quantities from a tender (of a small unit cost contract project) would be nice and give some perspective.

What would you suggest to improve? (I worked: 30-32 timmar/vecka)

Declare more clearly what is needed in the assignments. Some teachers said that some stuff such as calculations of specific curves etc, not mentioned on assignment questions, should be included in report when others said that describing was sufficient - we still got feedback that we missed stuff like this. Very annoying since we thought it was redundant. Also unclear as to which level you could make your own validated assumptions, some teachers in their gradings were fair, others not understanding / open minded at all (only saying that we calculated wrongly, not where or how we should've done), even though we explained all our thoughts.

What would you suggest to improve? (I worked: 33-35 timmar/vecka)

I think that last exercise (grouting) was a bit stressful due to its proximity to the presentations. Maybe this can be planned better. Also, I think exercise 1 was not so clear if parts 1 and 2 were connected.

What advice would you like to give to future participants?

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

If you can, it might be a good idea to get a head-start on the later assignments (3 & 4) - for example, inputting the formulas for calculational software (that you can later adjust), clearly dividing workload between group members, writing the introduction to the report.

What advice would you like to give to future participants? (I worked: 30-32 timmar/vecka)

Study in time. It takes a while to get a good grasp of all concepts

What advice would you like to give to future participants? (I worked: 33-35 timmar/vecka)

Participate actively in the course activities and ask as many questions as possible. The teachers are always happy to help.

Is there anything else you would like to add?

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

It was really nice how thoughtful you were with the creation of the groups for us who took the course in the first year of the master. It really helped us with our schedule and it would have been really difficult and close to impossible to finish the assignments in due time.

I really enjoyed the format of the Sequential Excavation lecture in the form of a discussion between Fredrik and Björn along with questions from the audience.

Is there anything else you would like to add? (I worked: 30-32 timmar/vecka)

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Is there anything else you would like to add? (I worked: 33-35 timmar/vecka)

Thank you for well prepared and a very well delivered course!

SPECIFIC QUESTIONS

RESPONSE DATA

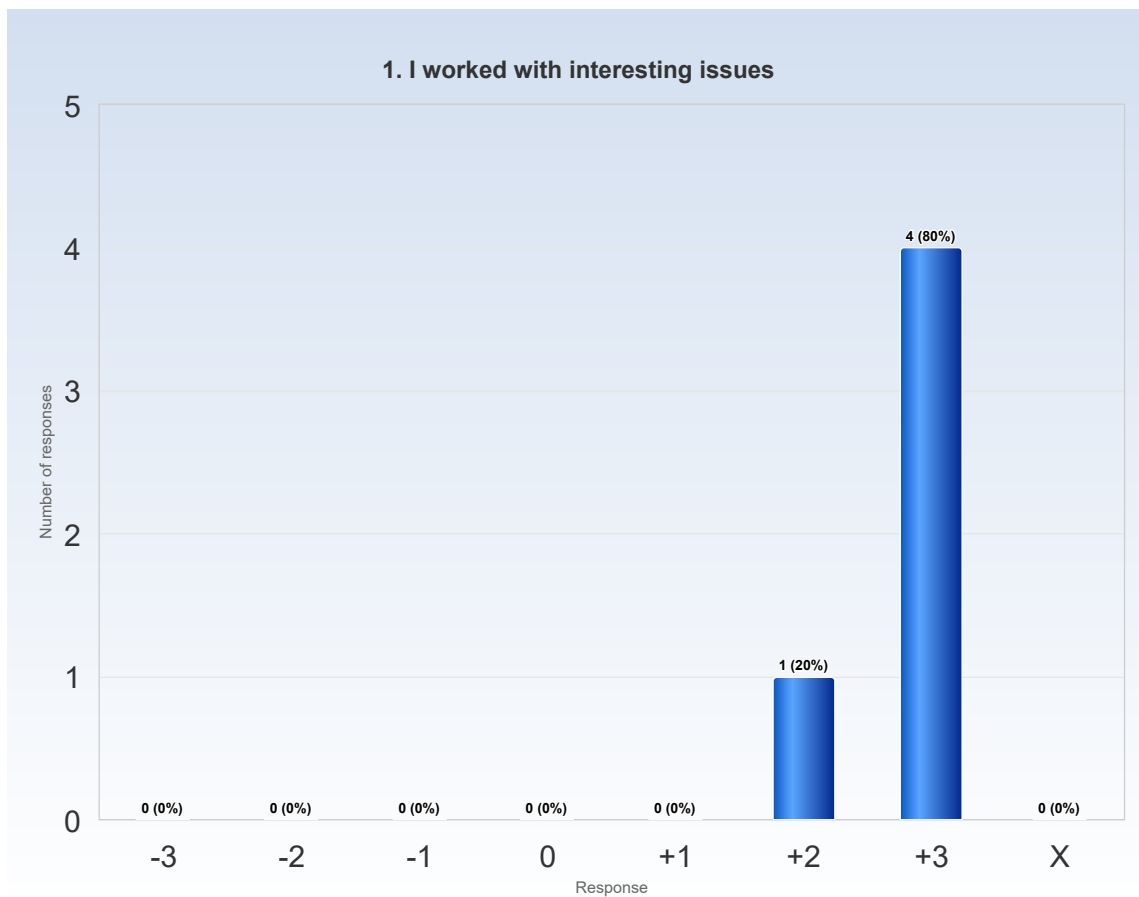
The diagrams below show the detailed response to the LEQ statements. The response scale is defined by:

-3 = No, I strongly disagree with the statement

0 = I am neutral to the statement

+3 = Yes, I strongly agree with the statement

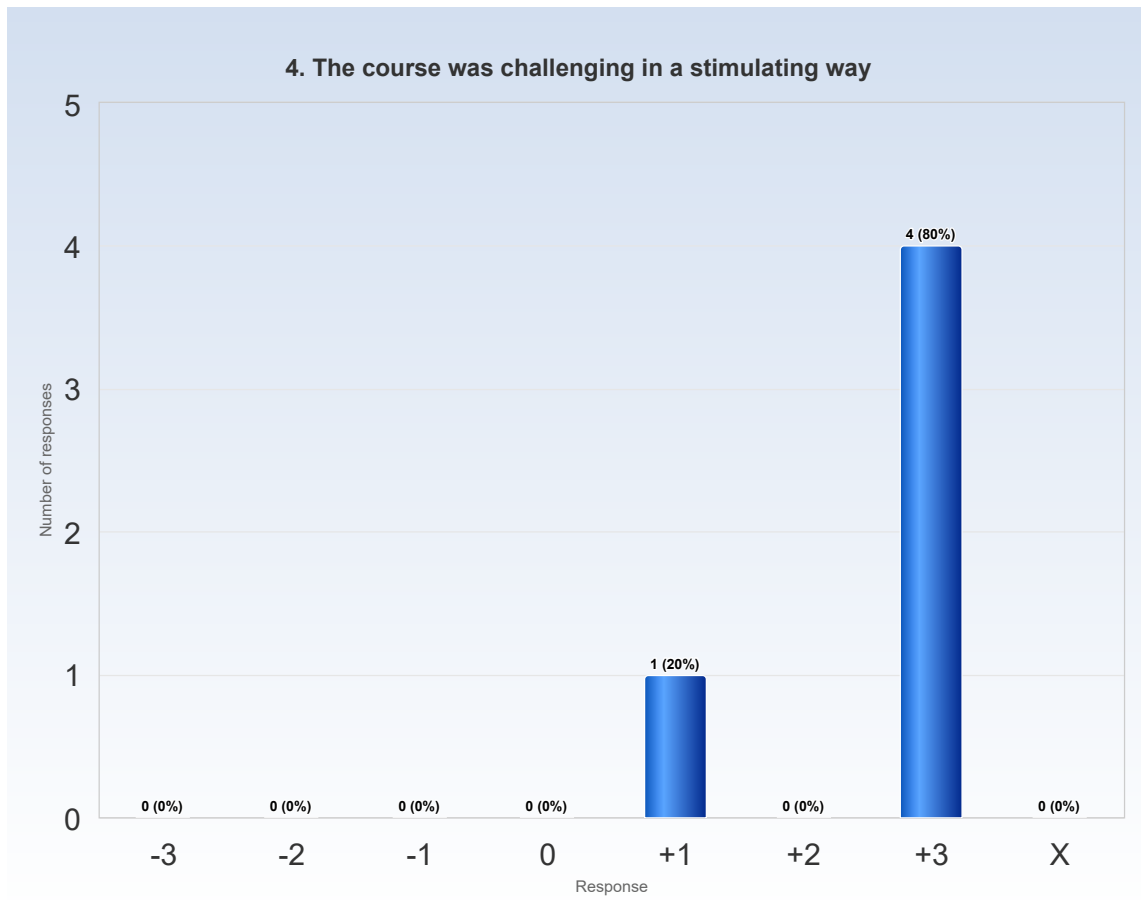
X = I decline to take a position on the statement



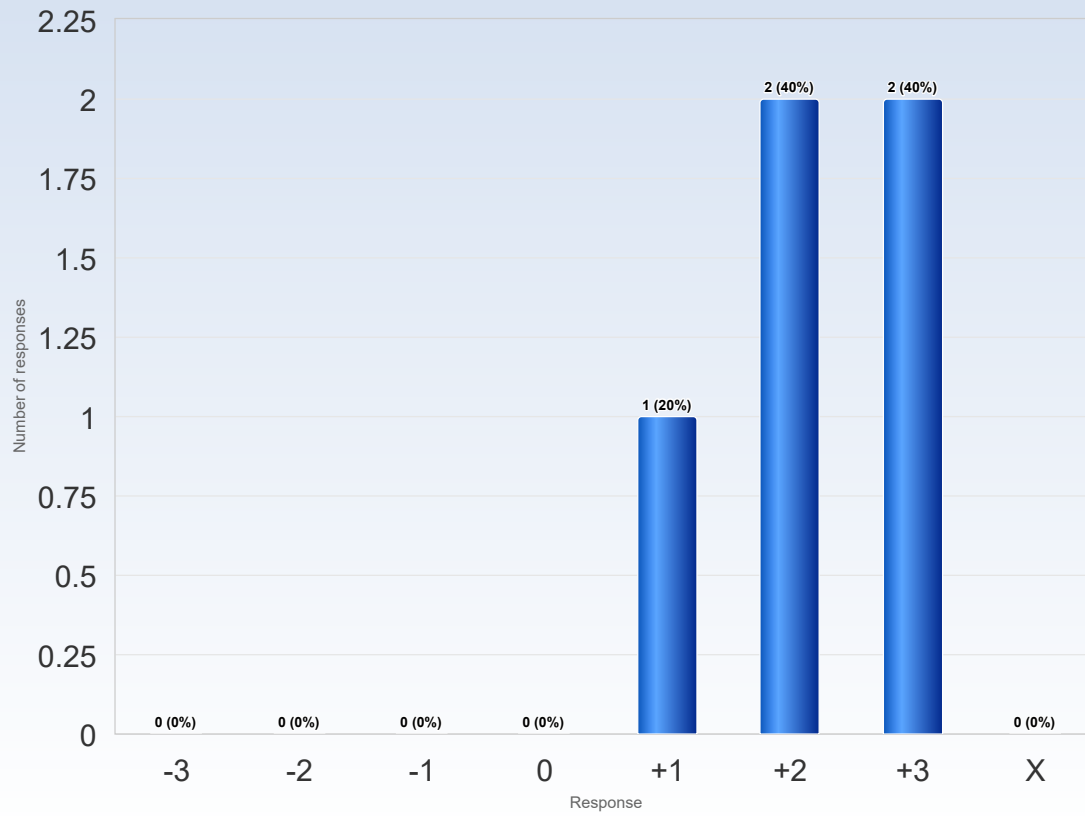
Comments

Comments (My response was: +3)

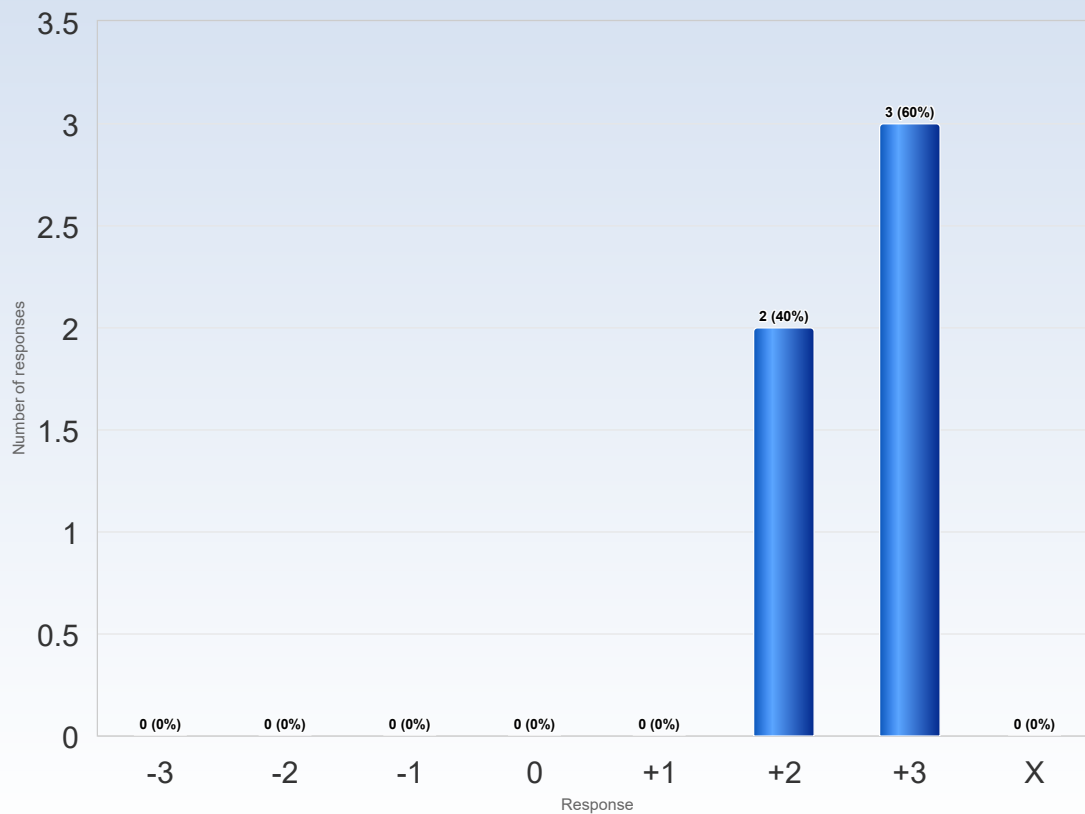
Yes , All projects were connected to real life projects. this made it fan.



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



16. The assessment on the course was fair and honest

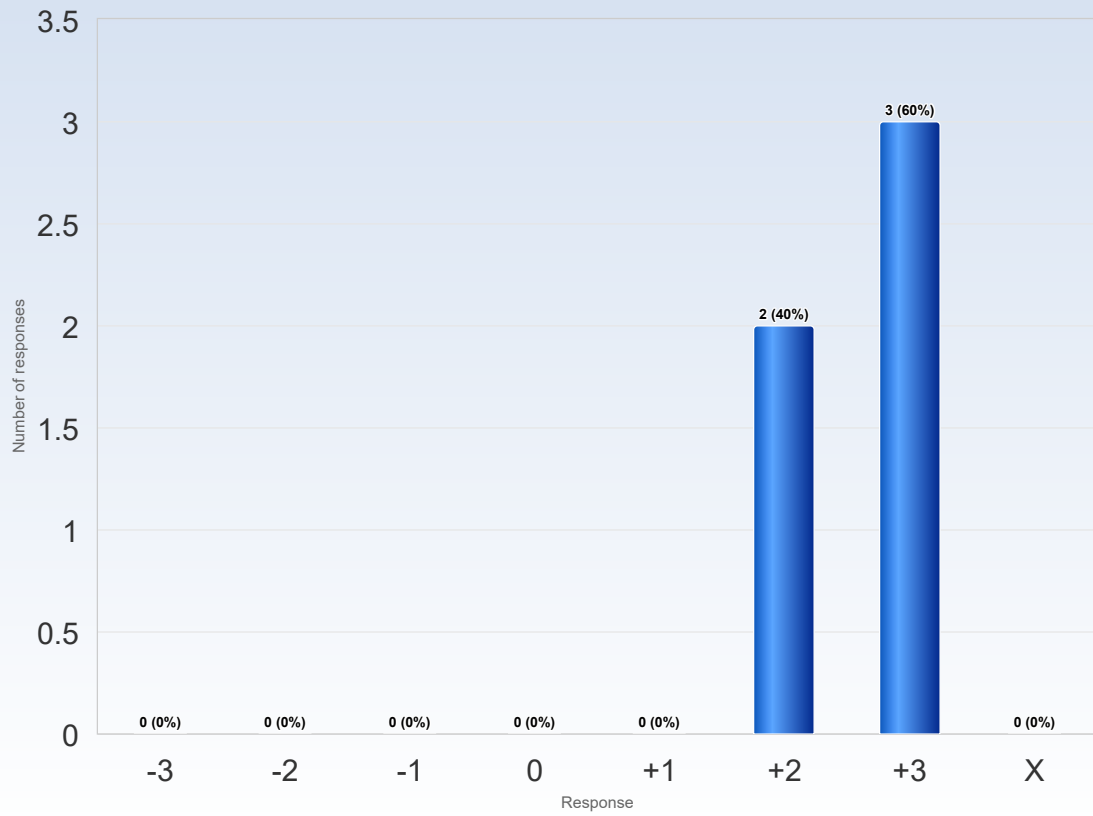


Comments

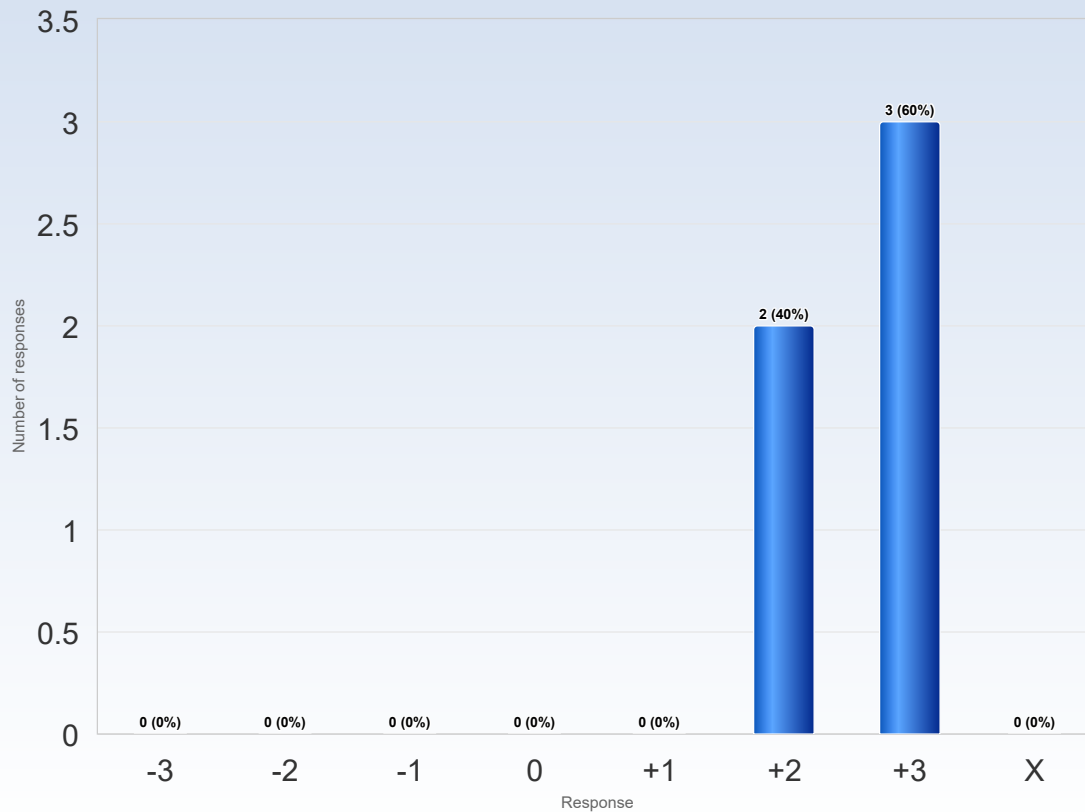
Comments (My response was: +3)

Not sure about the assesment of the exam yet though since it is not published

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



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



SPECIFIKA FRÅGOR

Vad tyckte du om studiebesöket hos OHLA? OHLA vill gärna ha förslag på hur besöket kan ordnas bättre (om du fyllde i deras egen enkät kan du bortse från denna fråga).

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It was great! I think we saw all fun/cool parts of the tunnel while being there. One improvement could be the efficiency as it ran pretty long and I got hungry.

VERY GOOD! Been to site visits in other courses where the location and the company was very boring. This was the total opposite, so thank you for that!

Really enjoyed the visit and seeing ground freezing and the excavation of a long shaft all the way to the surface. I don't think I can say anything that could be improved on since we managed to see a lot in the tunnel and were able to get answers to any questions too!

Kommentera gärna tidsåtgången och deadlines för de olika Assignments. Kan vi jämna ut arbetsbördan på något sätt?

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I think the first two assignments had a pretty good layout but the last two felt rushed.

The 4th was a bit tight. Maybe one more workshop. Since grouting had such a free design method, it was different and thus slightly more tricky to get a handle on.

As I pointed out earlier I think that something should be done on the allotted time for grouting. It is too short between the time for the lecture of part two and the deadline. Else, I think that the work load was evenly distributed.

In terms of assignments 1 and 2, I felt we had a lot of time and there was no major pressure to meet the deadlines. For assignment 3, I feel it really helped our group that we had a head-start and managed to do most of the calculations before the second workshop dedicated for this part. In assignment 4, it was a bit tighter, but then I also felt that the necessary calculations/computation procedure were less demanding, so it didn't feel like a major issue - we simply had a bit less time to dedicate for the conclusions chapter and optimizing the chosen parameters.