

Report - AF2610 - 2023-01-24

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; Fredrik Johansson, frejoaha@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 were elected by the students at the first lecture; this year both were female. Students comments were collected through a questionnaire at the end of the course (53% responded which can be considered very high). The result was discussed with the student representatives at a course evaluation meeting. Gender aspects and answers relevant for disabilities was covered in the KTH LEQ result sorting and commented on briefly in the meeting (no clear differences noted).

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 new site visit was arranged, at Gullmarsplan.

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?

The students report the expected workload for a 50% study activity, median approximately 18 hours per week.

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?

Students are generally very (exceptionally) happy with the course, reporting for example that the quality of the classes was very high and that 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 order of the information in the course and that it maybe is too much with 4 assignment reports, especially considering tight deadlines in December. Some students felt that some concepts from previous courses were repeated too much in this course.

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 very happy with the improvement made in the grouting module. We think it really increased the quality of the course this year, which is reflected in the student responses. The review of some material from previous courses is warranted considering that the students have different backgrounds and not everyone has taken rock mechanics or engineering geology before this course.

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?

There seems to be no significant difference between the responses of male and female students; the other categories have too few respondents to be considered statistically. Generally, the learning environment seems to be exceptionally good, considering the students' very positive responses.

PRIORITIZED COURSE DEVELOPMENT

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

Some potential improvements that we discussed at the course evaluation meeting with the student representatives:

- The assignments have different work load, which could be better reflected in the deadlines. Assignment 1 has too much time and Assignment 4 has a very tight deadline at the end.
 - Assignment 3 is challenging to produce an IMRAD-formatted report from, and is rather short anyway. We can consider making this a workshop exercise only without requiring a report. Then, we will assess the students' knowledge on this matter on the exam only. This solution would make room for some more time on Assignment 4. We can consider putting the Assignment 3 content (time and cost estimation) after the grouting module. Another option is to merge Ass 1 and Ass 3 ("Production"), as Ass 2 and 4 are design-oriented.
 - We should consider giving the students some additional starting help with Assignment 1, as this assignment is a bit tough to get started with.
 - The sustainability module may need an update. We can consider inviting Prof Anna Björklund to co-arrange an interactive workshop together with Fredrik, instead of just having a lecture.
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OTHER INFORMATION

Is there anything else you would like to add?

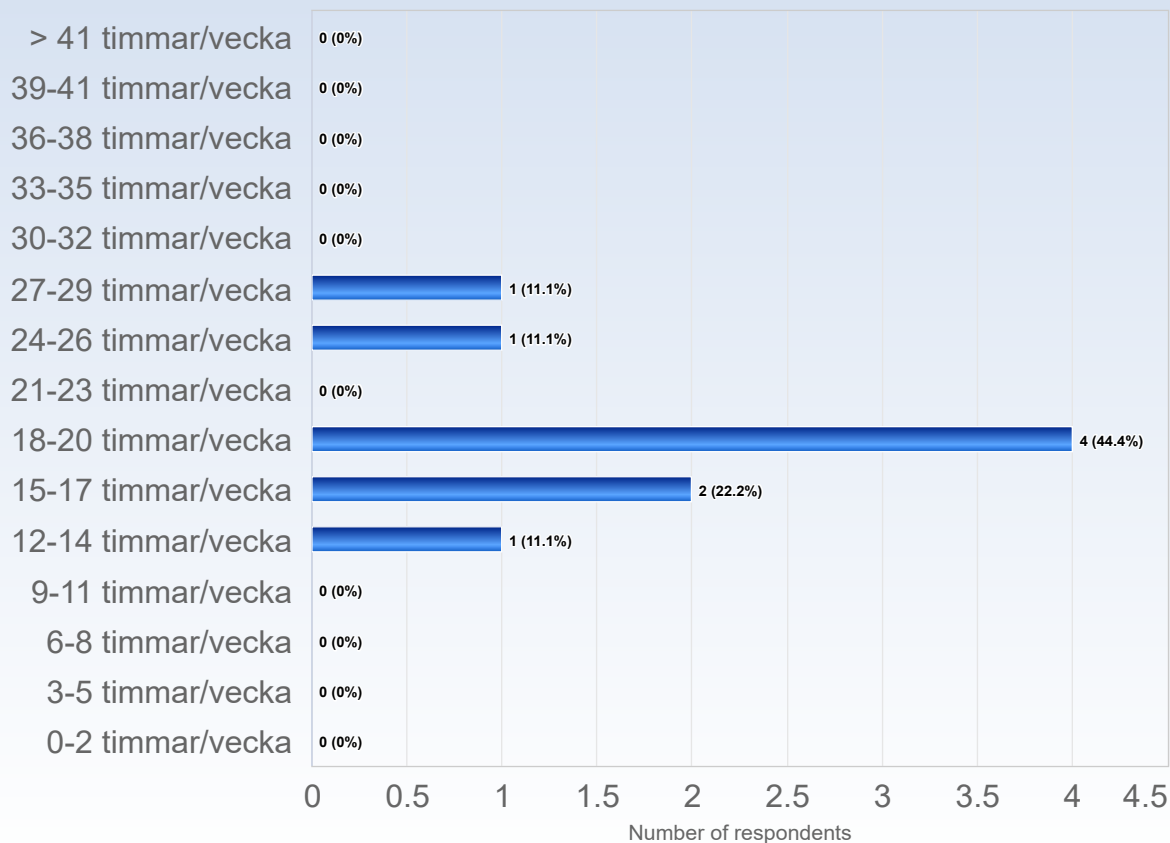
- We will try to visit OHLA at Gullmarsplan also next year, as they seem to have done a really good job with the visit.
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AF2610 - 2023-01-10

Antal respondenter: 17
Antal svar: 9
Svarsfrekvens: 52,94 %

ESTIMATED WORKLOAD

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



Comments

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

The assignments were very time-consuming and perhaps a bit too much.

Comments (I worked: 18-20 timmar/vecka)

Good with the time, you had enough time to do the calculations on the time for the assignments.

Roughly 6 hours of scheduled hours. 14 more or less of working on assignments/making summaries of units.

The number of hours required for this course was appropriate: enough hours to go through the projects with the presence of the teachers for help, and a few hours to revise the course on our own.

Comments (I worked: 24-26 timmar/vecka)

Lite tufft med många inlämningsarbeten. Det tar tid att skriva formellt i IMRAD, fick inte mycket tid över till den paralella kursen.

Comments (I worked: 27-29 timmar/vecka)

It was a good amount of work load and not to much when have the demanding course Tamos at the same time

LEARNING EXPERIENCE

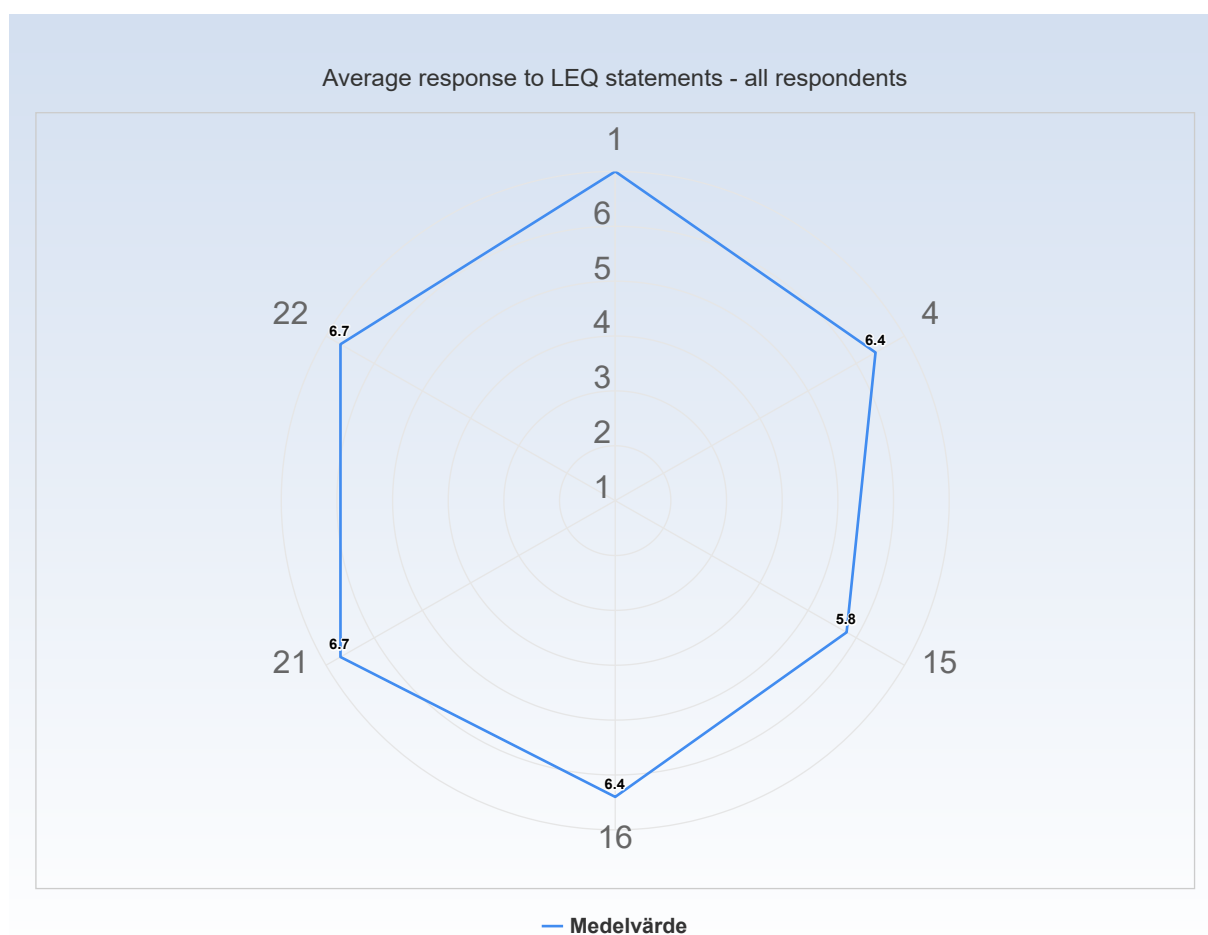
The polar diagrams below show the average response to the LEQ statements for different groups of respondents (only valid responses are included). The scale that is used in the diagrams is defined by:

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.

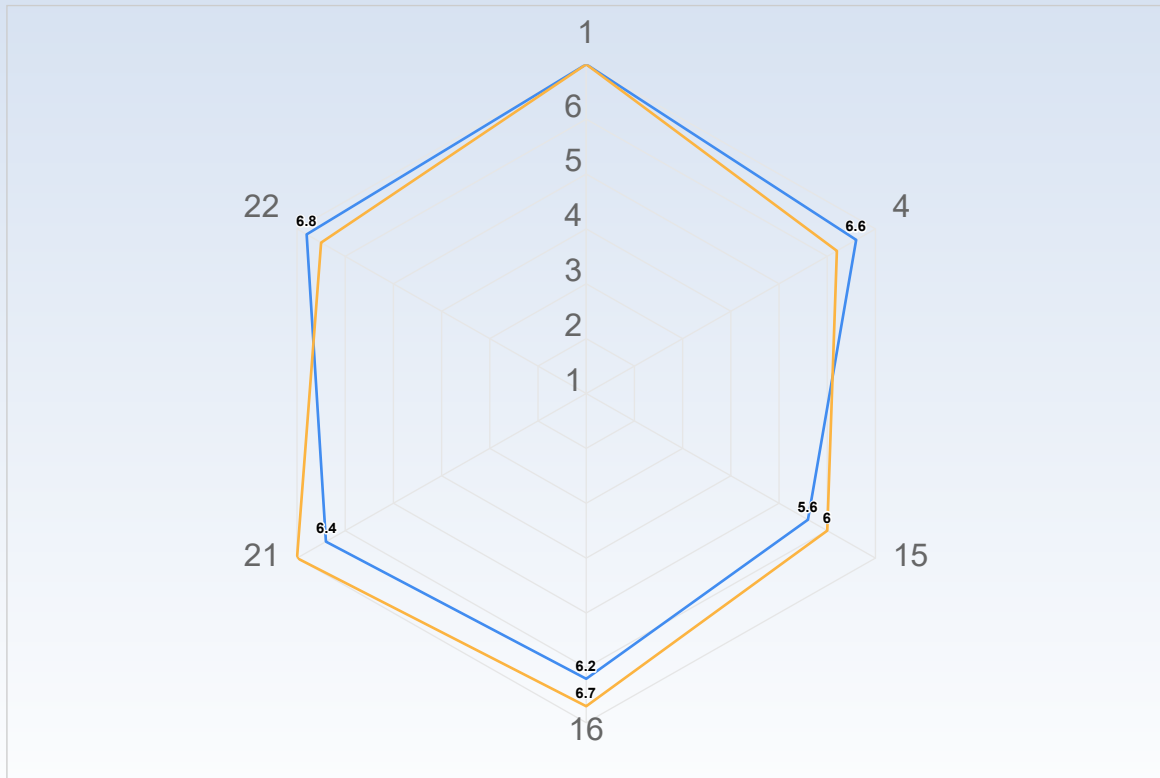
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

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

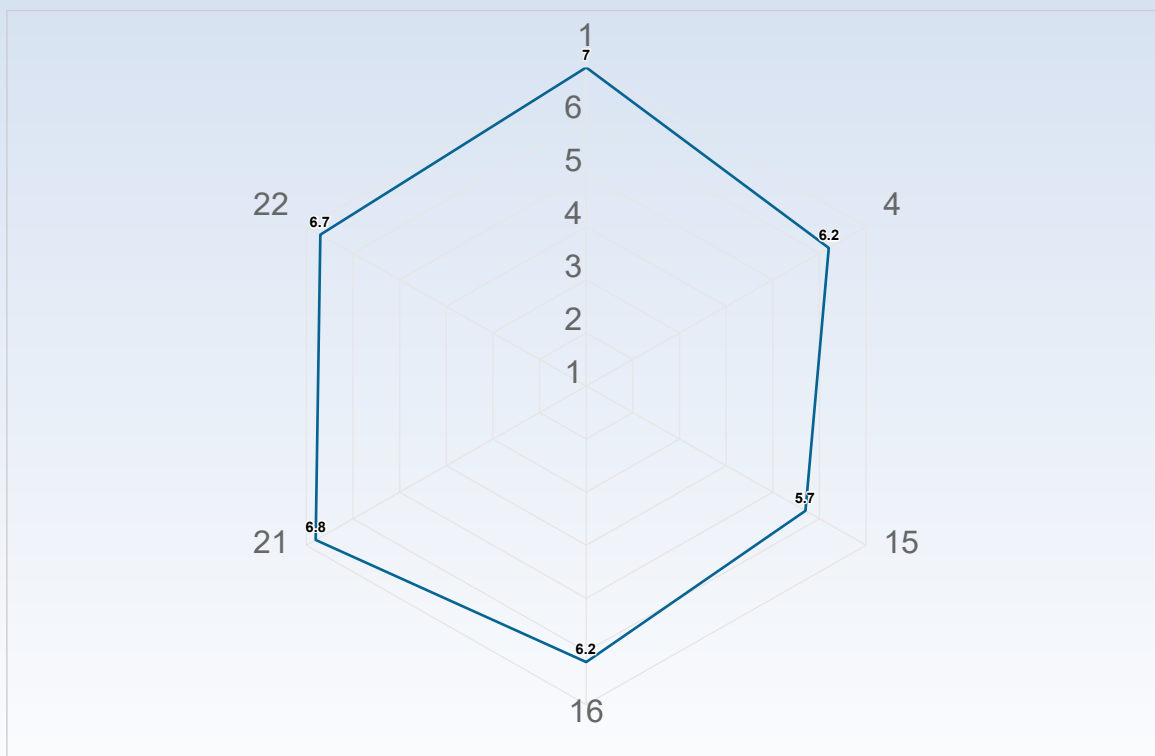
Comments

Comments (I am: Man)

I may be, therefore I am

Nothing to comment.

Average response to LEQ statements - per type of student



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

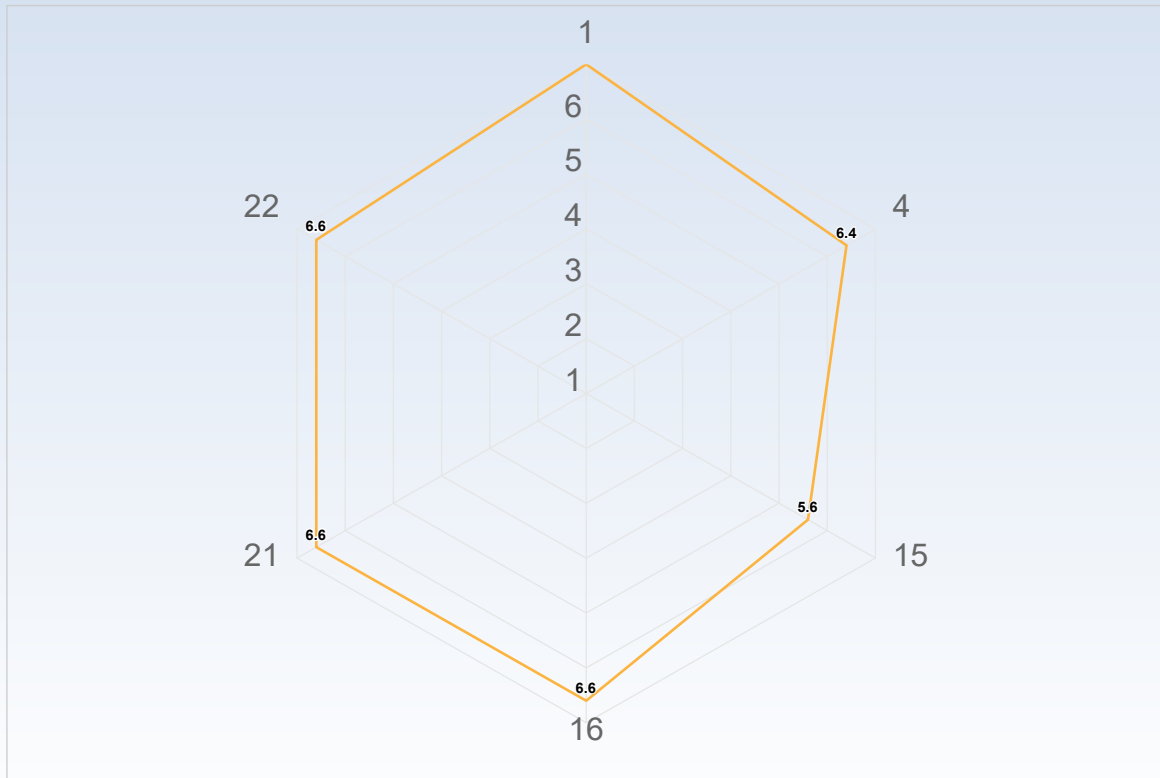
Comments

Comments (I am: Internationell utbytesstudent)

ERASMUS exchange from Spain

The course was easy to follow as every teacher was able to perfectly give all the necessary knowledge in completely fluent English.

Average response to LEQ statements - per disability



— Ja — Nej — Vill ej uppge

Comments

Comments (My response was: Nej)

Nothing to comment.

GENERAL QUESTIONS

What was the best aspect of the course?

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

The site visit was cool, the work load was also not too much in this course

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

The excursion to Gullmarsplan!

The teachers for the exercise hours were also very helpful with any questions regarding the assignments.

It being based around the assignments and the site visit. Also everyone seemed very engaged in the subject and the development and learning of the students. I also appreciated the guest lecturers, it's nice to see more than KTH

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

Very interesting with different aspects and good guest lectures.

The field visit! But I think also in general the course was really good - the lectures were interesting and the assignments (although some were a bit challenging and time consuming) very good in a learning-perspective. I really appreciated the scheduled time to work on the assignments.

The quality of the classes was very high, from lecturers, to content and organisation; classes were pleasant and engaging

The site visit was a great opportunity to put the knowledge acquired during this course in parallel with a real world situation.

What was the best aspect of the course? (I worked: 24-26 timmar/vecka)

Intressanta föreläsningar

What was the best aspect of the course? (I worked: 27-29 timmar/vecka)

Really interesting assignments. It was good practice and help to be able to understand exam questions better

What would you suggest to improve?

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

Maybe not all assignments need to be presented with IMRAD, assignment 3 was quite weird to write in that format.

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

The guest lecture from Gunnar Nord wasn't that great. Perhaps also make the assignments shorter. However, the assignments did help very much with understanding.

It could be a bit more challenging. Also some parts we heard about three or four times and that time could maybe be used for another aspect on tunnelling.

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

It felt like the time to write the reports for the assignment was a bit uneven, to hand in the first assignment we had quite a long time while for assignment 4 we had two times from the last scheduled time until hand in. So perhaps if it could be a bit more even spread.

This might be a good thing as well. But a lot of information you needed on the assignment were only given on the assignment time, so for instance if you were sick it was hard to do the assignment. So you could not really find the information in the class reading.

Maybe give some more hints on how to start with the assignments. Once you got started with them they were really interesting and pretty fun to work with, but I feel like almost everyone struggled a lot in the beginning and you need to ask a lot of questions to the teacher. In order to give everyone the same information, maybe it would be better to try and go through some hints at the start of the assignment for everyone to listen to.

Also, I think the sustainability part of the course is really important, but I feel like this lecture was a bit lacking in quality and felt a bit out of place.

Some slides repeated information too much and it could be said that the order of learning was odd (cycles, then explosives, then design, ...) however it wasn't an issue to keep up and it's a more nitpick.

I have no specific aspect of the course in mind that should be improved.

What would you suggest to improve? (I worked: 24-26 timmar/vecka)

Mer detaljerade instruktioner till övningarna, jobbigt att förlita sig på övningsassistenten. Speciellt om man missar en övning.

What would you suggest to improve? (I worked: 27-29 timmar/vecka)

The first assignment can have submission earlier and starting the next earlier so it not as stressful at the end

What advice would you like to give to future participants?

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

Just follow the assignments and it will be fine.

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

Complete the assignments during the seminar hours.

Be focused during scheduled time and a lot of work will be done.

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

Go to the lectures and time for assignments.

Start working early with the assignments, they are very time-consuming. And don't be afraid to ask the teachers for help!

Focus on revisiting the assignments for the exam, they are a good way to refresh and remember the theory.

It is important to follow all the courses since there are all given in a logical order. There is an advancement through the different lectures.

What advice would you like to give to future participants? (I worked: 24-26 timmar/vecka)

Gå på övningarna!

What advice would you like to give to future participants? (I worked: 27-29 timmar/vecka)

Put an effort in for the assignments, they are worth the time

Is there anything else you would like to add?

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

Could have been more questions about the theory of fractures on the exam.

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

The assignments did an excellent job to apply the more calculative parts of the course. An exam focusing on theory was a good way not to focus unnecessary energy on memorisation of formulas and prioritised understanding concepts.

Keep the course the way it is since it is great!

Is there anything else you would like to add? (I worked: 27-29 timmar/vecka)

I really like this course. Fun assignments, overall good lectures and the exam was fair

SPECIFIC QUESTIONS

RESPONSE DATA

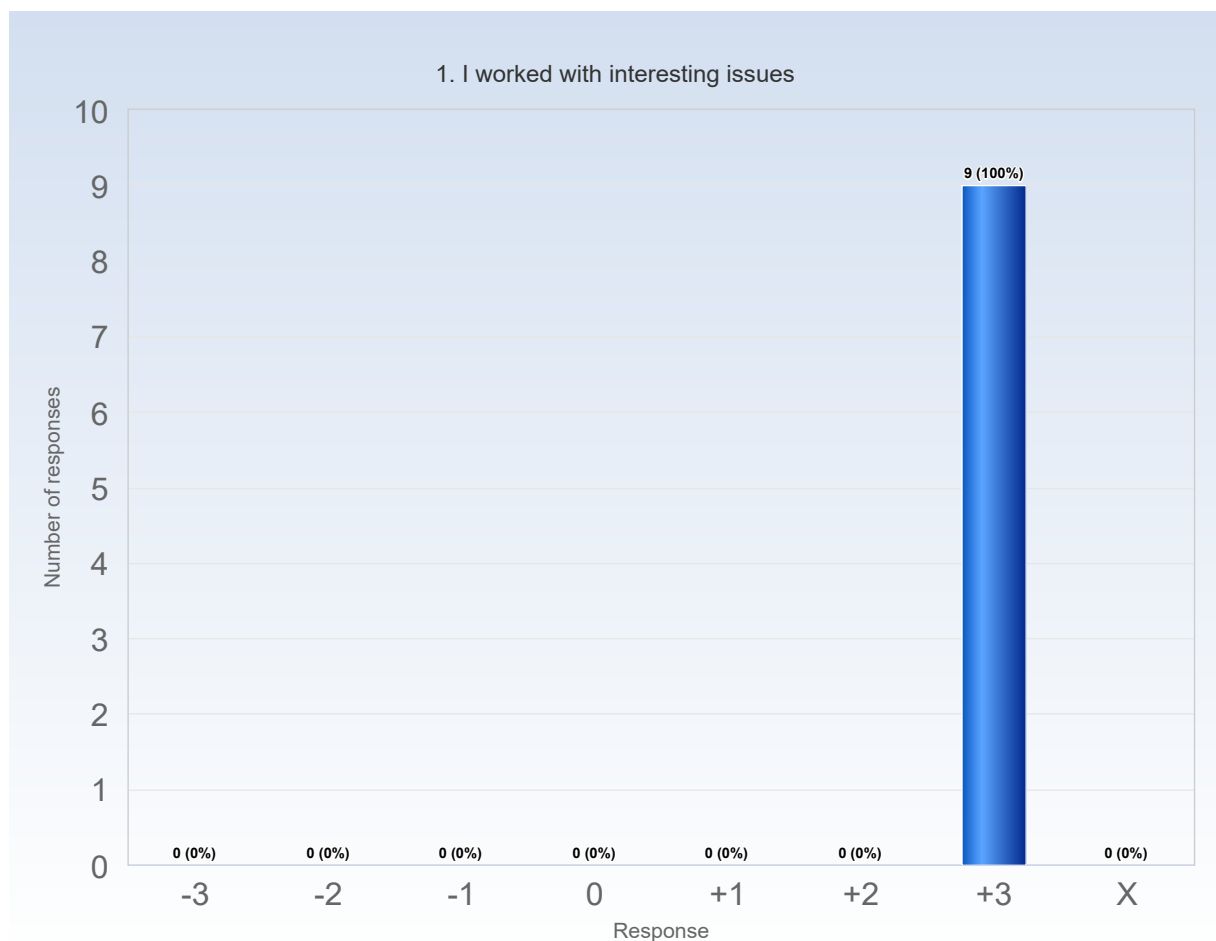
The diagrams below show the detailed response to the LEQ statements. The response scale is defined by:

-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

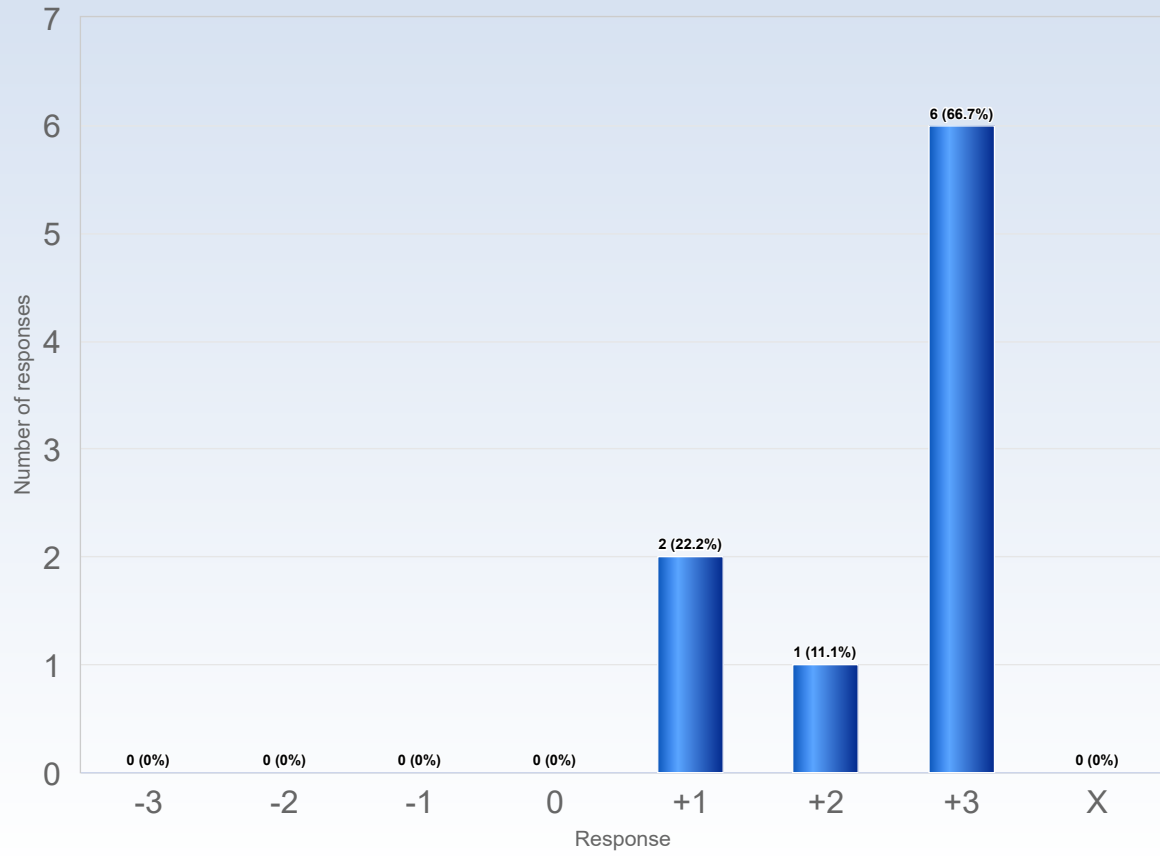


Comments

Comments (My response was: +3)

It's really nice to have the course structured around assignments

4. The course was challenging in a stimulating way

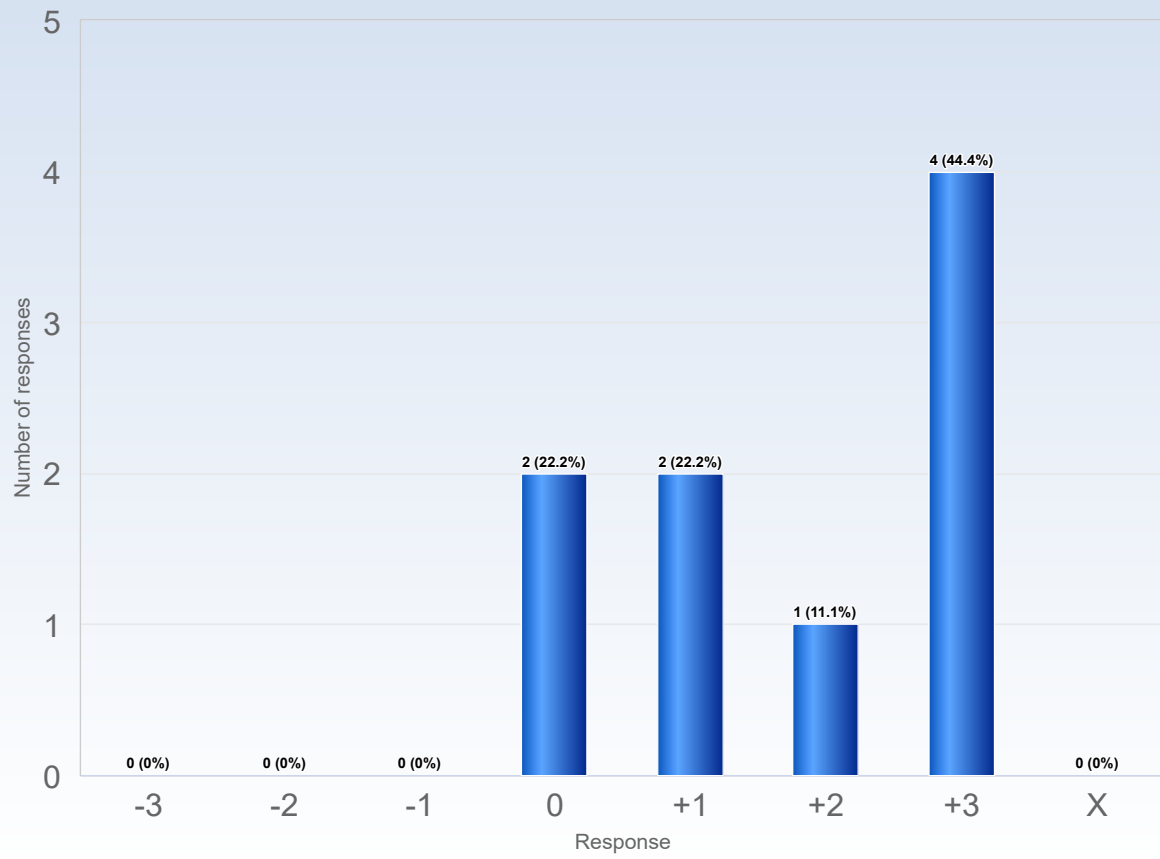


Comments

Comments (My response was: +1)

I would say this was the least challenging course I've taken throughout the master. It could be increased and still be reasonable

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

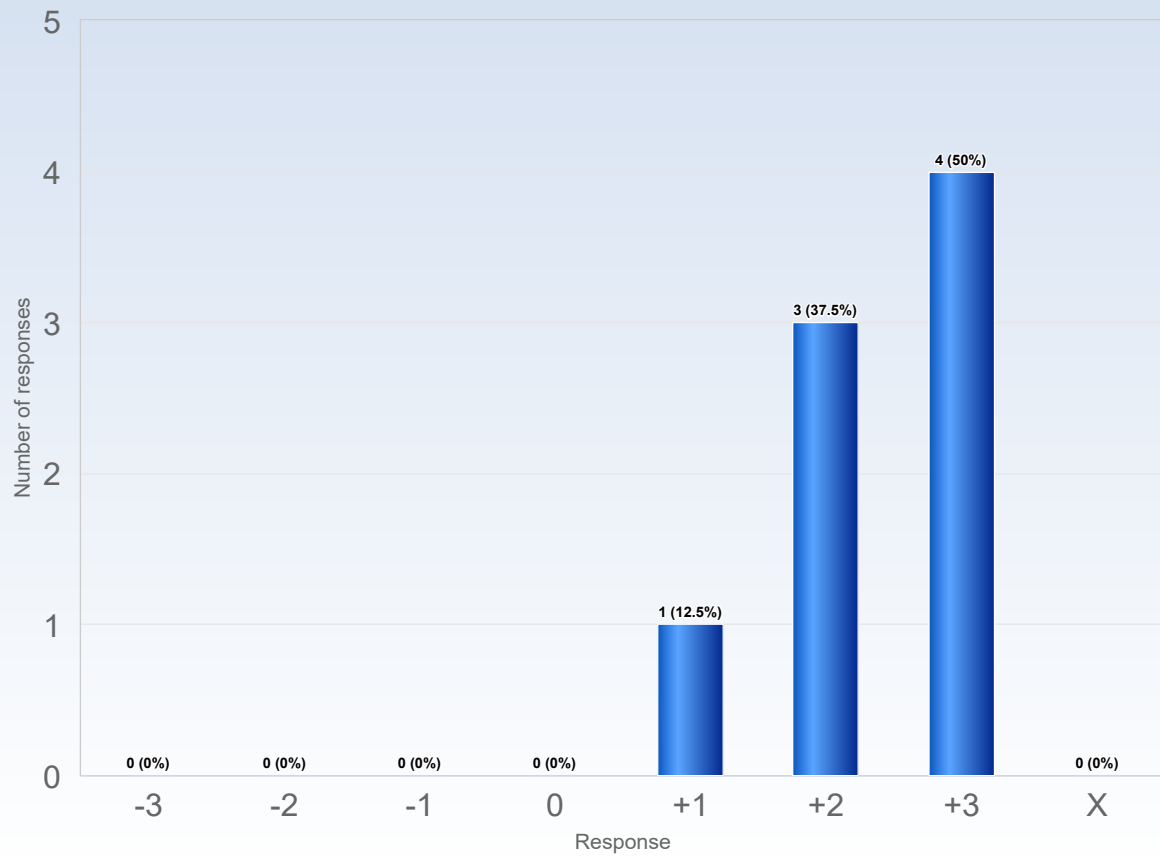


Comments

Comments (My response was: 0)

You can always ask in the workshops, but everything else was graded

16. The assessment on the course was fair and honest



Comments

Comments (My response was: +1)

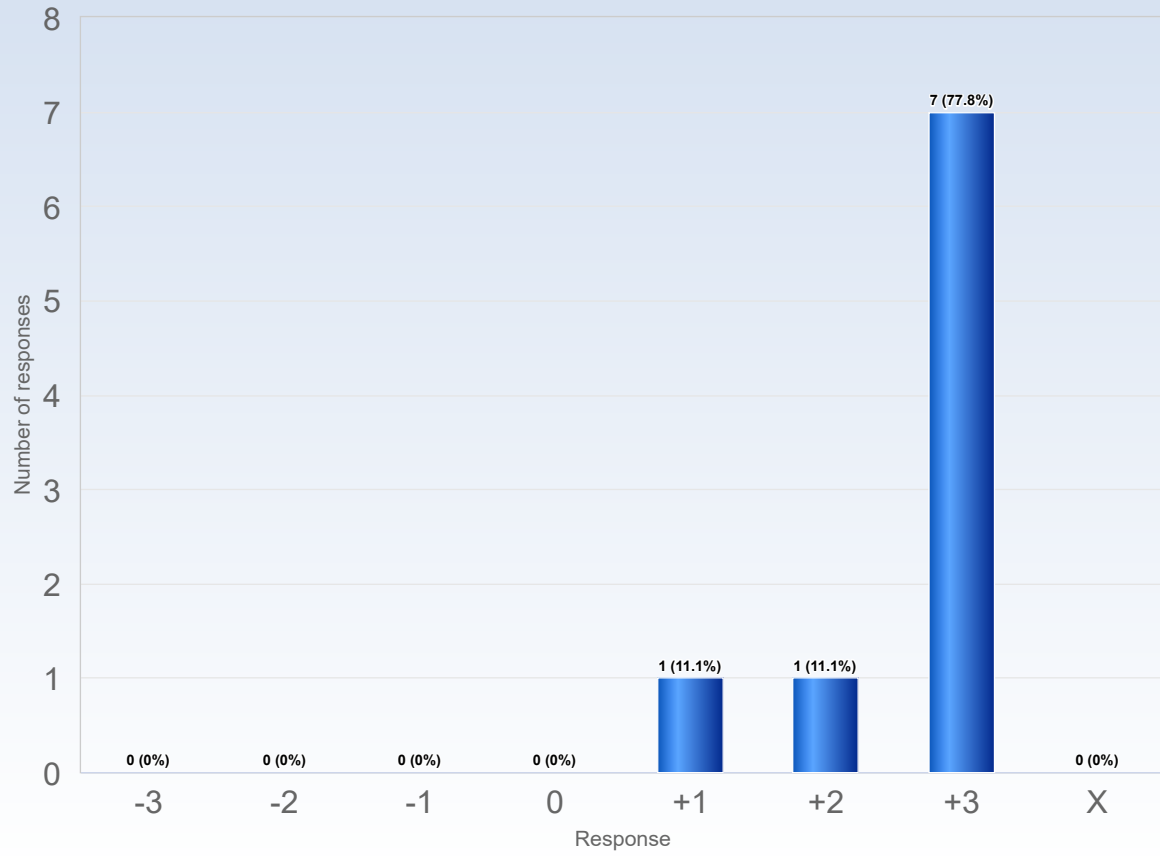
I think the requirements for higher grades on the exam are a bit too tough but I still feel that the grades are fair to what the requirements are now

Comments (My response was: +2)

So far, exam not graded yet

It was maybe a bit to easy to get a high grade.

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

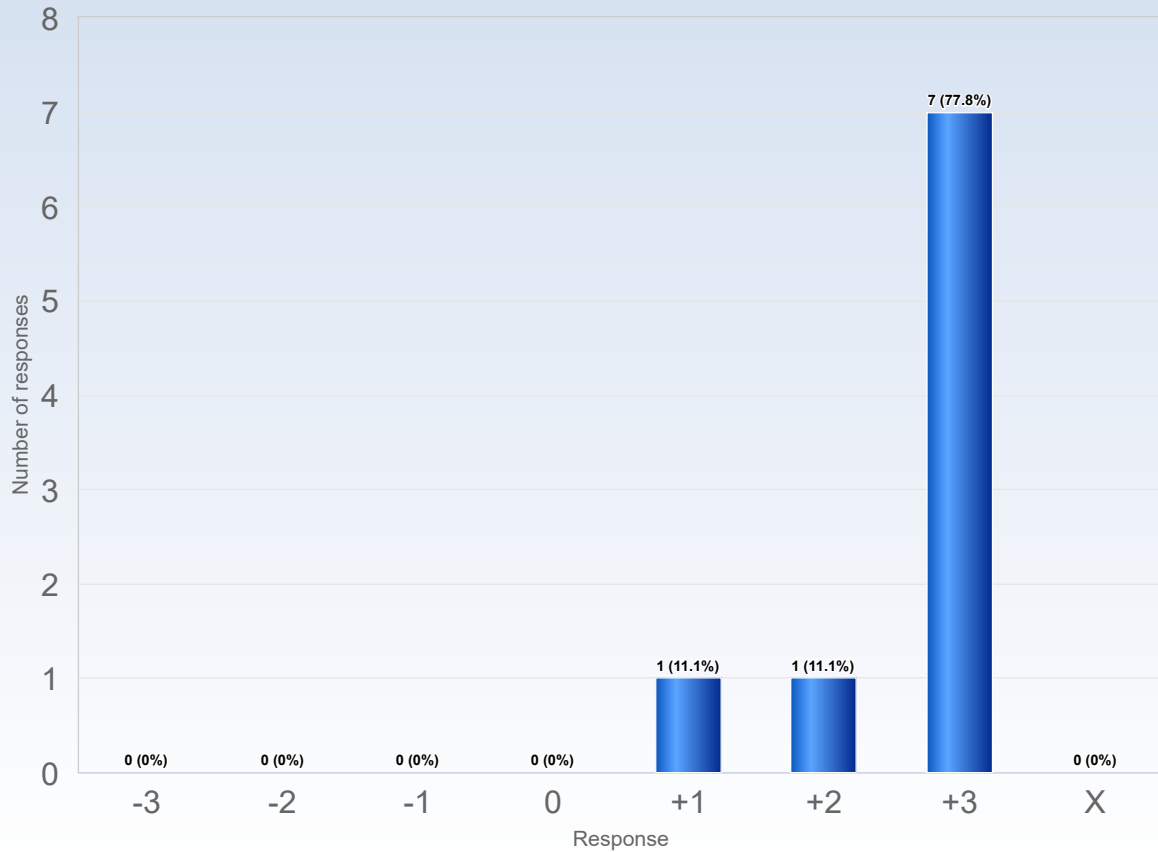


Comments

Comments (My response was: +3)

Yes, that is why working with assignments connected with the course material is so good

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



Comments

Comments (My response was: +1)

Svårt att hitta hur man skulle göra i materialet. Behövde förlita sig på läraren på övningen

Comments (My response was: +3)

The exercises were really good. It was great being able to discuss with teachers and gain a deeper understanding of the subject
I would say only the last assignment was a bit more difficult to get help with, but only because we had the last workshop early and we still worked with the third assignment. If we would have emailed i also think we would have gotten help as well.

SPECIFIKA FRÅGOR

Kursen innehöll ett studiebesök. Vad tyckte du om arrangemanget, innehållet och det du fick se?

SPECIFIKA FRÅGOR

Kursen innehöll ett studiebesök. Vad tyckte du om arrangemanget, innehållet och det du fick se?

Very nice visit, liked it a lot. Got a better understanding of why we did certain things in class.

I thought this was the best part of the course! It was really fun to get to visit a tunnel construction in real life, and what the challenges are building tunnels like that in the middle of Stockholm.

It was educative and interesting.

I think it was really good! You got a better feel for it!

The site visit was great. A lot was covered and learnt. A site visit should definitely be continued in the future.

Kul och bra fältbesök!

It was definitely all that I wished to see and even provided some pleasant new learning experiences, it was a definite positive experience and useful to visualise what was seen in class.

Seeing something in theory and then for real is a great way to understand and learn. I'm really thankful for the opportunity. Also it was good to hear that it was a possible direction you can take after the studies. Since there are not that many courses in rock in general i was not thinking this was a possibility.

The site visit was great, with the presentation of the project before getting in the tunnel. The technical content was relevant as it was very closed to what was studied in the lectures and the projects.