



Report - EQ2401 - 2021-06-24

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):

Magnus Jansson (janssonm@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.

Course evaluation open during 2021-03-19 - 2021-04-02. Standard KTH LEQ, see attached.

COURSE DESIGN

Briefly describe the course design (learning activities, examinations) and any changes that have been implemented since the last course offering.

12 lectures to give an overview of the theory. 7 problem solving sessions led by a teaching assistant to illustrate problem solving techniques. This is fewer sessions than in most other courses with the motivation to give more time to students' own practicing of problem solving outside class. Computer exercise material is provided (but not scheduled in class) to practice computer based problem solving and to illustrate theory. The examination consists of two projects where semi-practical problems should be solved by computer based tools (Matlab) and reported by computer code, demo, and oral presentation in groups of two students. The projects also serve the purpose of getting students active during the course. Written exam in the end. We also have weekly voluntary homework assignments on problem solving; again, with the purpose of promoting students' active continuous learning. Completion of homework assignments give bonus points that are added to the written exam score. Well solved and presented projects also give bonus points. This pandemic year, activities were implemented via pre-recorded video lectures, zoom-meetings for more interactive discussions around the material, to run illustration examples, and problem solving sessions. The written examination via home assignment in canvas.

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?

I think the workload seems to be on an OK level.



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 results were really good. Many students were engaged in the projects during the course and delivered good solutions. Most of them also did the voluntary homework assignments. As a result, many also had some bonus points to add to their exam scores. In the first exam, 12 out of 13 students participated and 83% passed. Moreover, 50% reached an A-grade, which is definitely more than usual. I interpret this as at least partially resulting from the fact that many have selected the course out of real interest and skills in the topics of the course. In the re-exam we had 2 students and both managed to pass.

STUDENTS' ANSWERS TO OPEN QUESTIONS

What do students say in response to the open questions?

See the attached course evaluation report.

SUMMARY OF STUDENTS' OPINIONS

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

Unfortunately only 4 out of 13 responded to the LEQ.

The course design is appreciated. Projects and home assignments are considered useful.

The response is very positive. The question with the lowest score is

"15. I could practice and receive feedback without being graded (j)". This is natural as all assignments are "graded" in some sense. The idea of the grading of the voluntary home assignments is however quite light exactly with this in mind. The important thing is that students attempt to solve the problems and not that all is correct.

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.

Everything went well, even with the changes to the online format. Feedback is positive and results are really good.

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 real need to make changes. If any we can think of how to introduce "practice without being graded" and how to provide better feedback on assignments/projects. Also, as a result of the forced online teaching, we should think of how this may influence future course rounds.

PRIORITIZED COURSE DEVELOPMENT

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

Think of how the efforts invested in the online teaching best is used in the coming round.

New projects again.

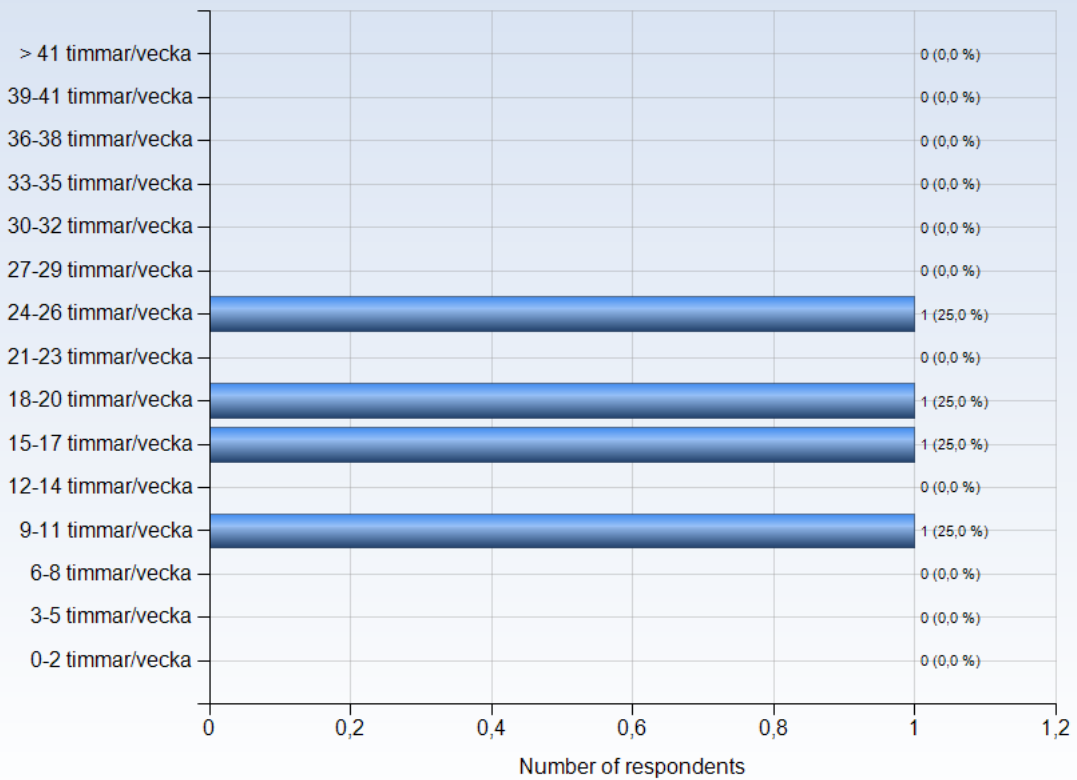


EQ2401 - 2021-03-15

Antal respondenter: 13
Antal svar: 4
Svarsfrekvens: 30,77 %

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)

I thought that the layout of the course with weekly homeworks was a good way to incentivize continual study. The course did not take up excessive amounts of time due to being well structured.

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

Very well-balanced between lectures, tutorials, assignments, and 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:

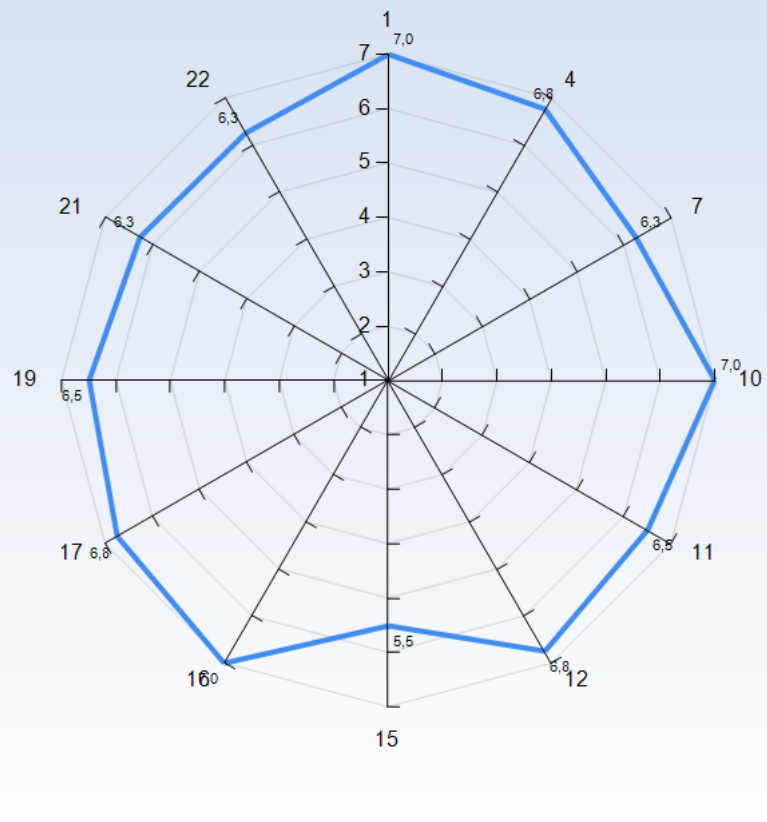
1 = No, I strongly disagree with the statement

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.

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.

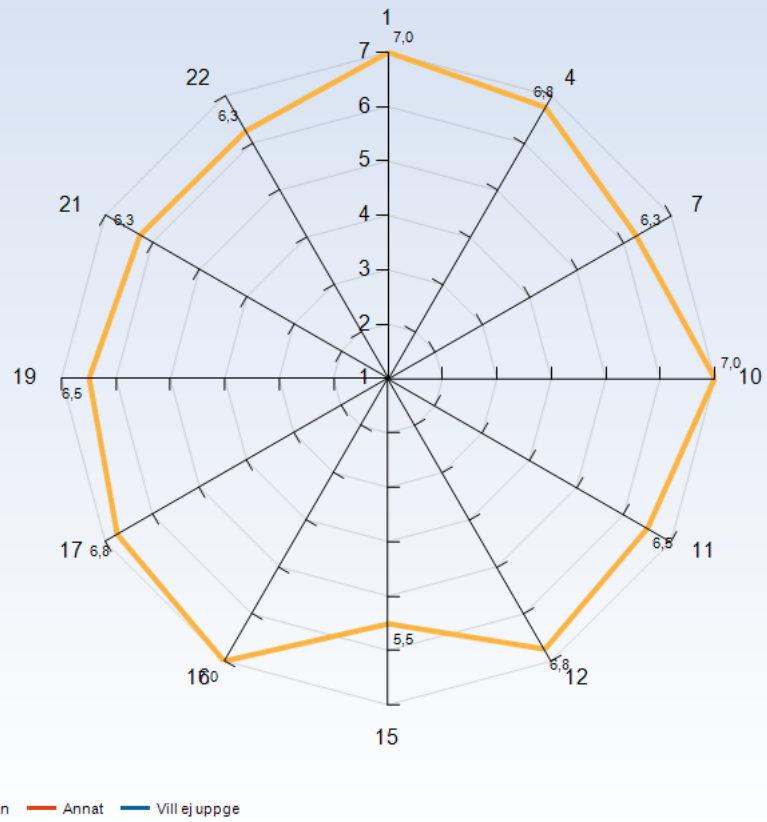
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

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.

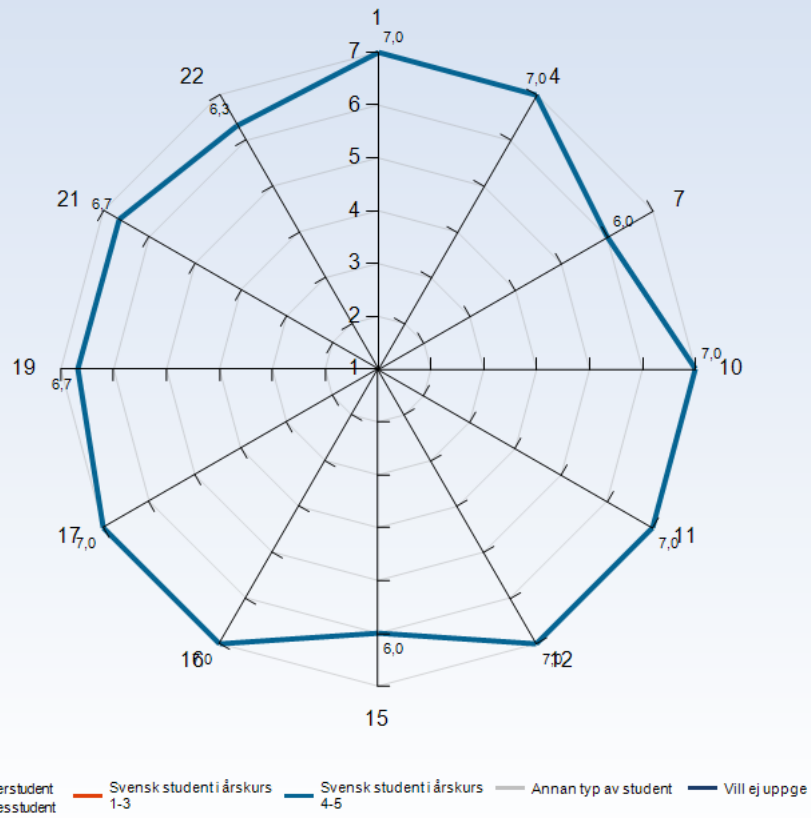
Ramsden, P. (2003). *Learning to Teach in Higher Education*, Chapter 6, pp. 84-105. New York: RoutledgeFalmer.

Average response to LEQ statements - per gender



Comments

Average response to LEQ statements - per type of student

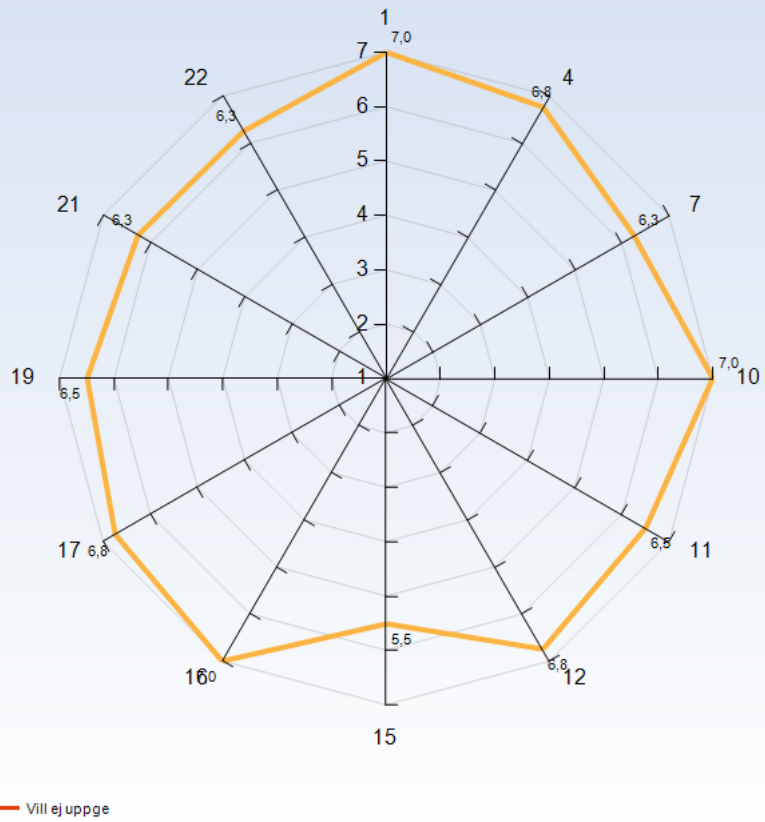


Comments

Comments (I am: Internationell masterstudent)

Oral presentation of my project is different from other courses and it really gives me a chance to improve my English.

Average response to LEQ statements - per disability



Comments



GENERAL QUESTIONS

What was the best aspect of the course?

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

The projects were interesting and fun.

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

Each week I was asked to do a homework with bonus, solving these problems was helpful to final exam.

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

Nice projects that added a lot to understanding. I also liked the videos; they were concise and to the point. Saved a lot of time compared to traditional lectures, which was good.

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

Great lecture notes, complemented by video lectures. Interesting and concrete project assignments. The homework assignments are great for getting practice before the exam. Very well-structured and clear course in general.

What would you suggest to improve?

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

I would have liked some more emphasis on Kalman filters. Maybe they would be better placed after the LMS/RLS filters (I seem to recall that they were put after the Wiener filters in the course)

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

The TA can explain last week's homework in tutorials.

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

I think the part about Kalman filters is confusing, and that is coming from a student who has dealt with Kalman filters a lot. Having two formulations is confusing. I also think Kalman is important and deserves a larger portion of the course.

Some of the videos on youtube had some flickering, which was annoying.

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)

Make sure to do the computer exercises not just for completing the project assignments. They are very useful for getting a better understanding of the course concepts.

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

Course DSP is important for this course.

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

It's important to get started on the project early.

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

Do the homework assignments, as they prepare you for the exam and connect to the theory presented in the course very well.

Is there anything else you would like to add?

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

Two projects are all related to noise reduction, I think one project may be related to audio processing and another one should be applied in a different field.

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

Good course! I would love to see a course on non-linear methods (like particle filters etc). The optimal filtering course does not cover that in detail, but that seems cool.

SPECIFIC QUESTIONS



RESPONSE DATA

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

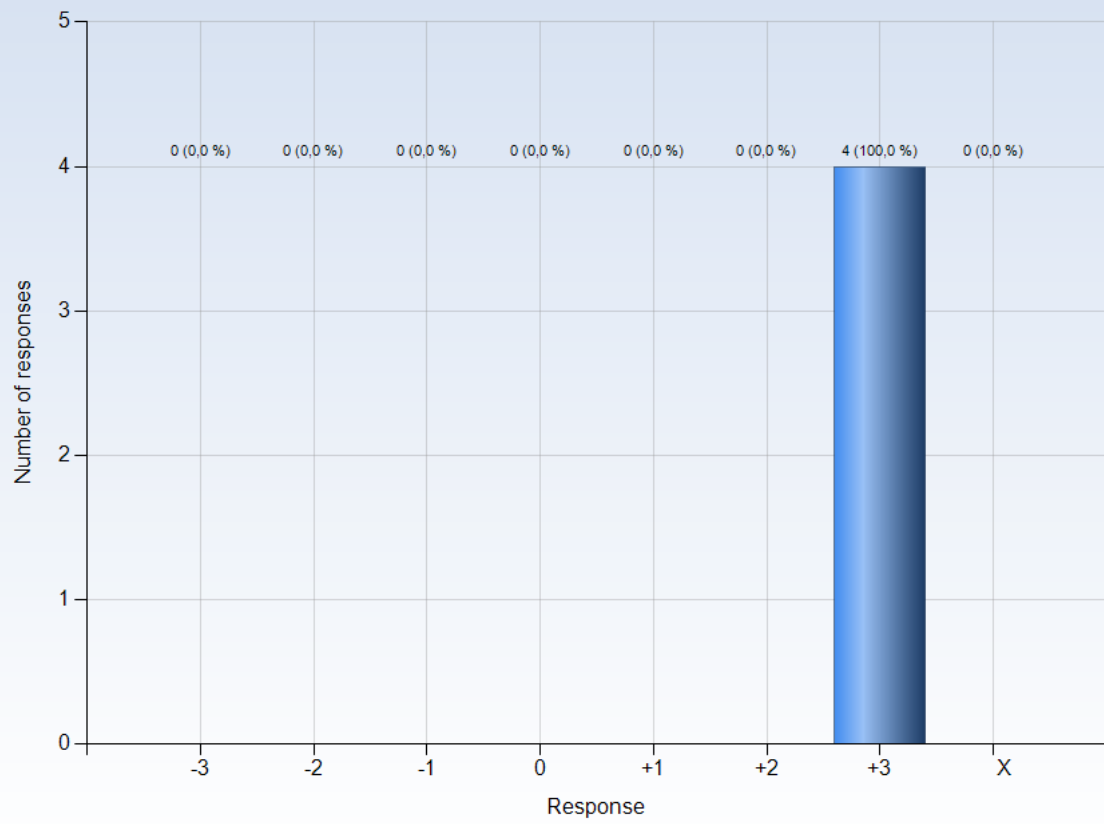
-3 = No, I strongly disagree with the statement

0 = I am neutral to the statement

+3 = Yes, I strongly agree with the statement

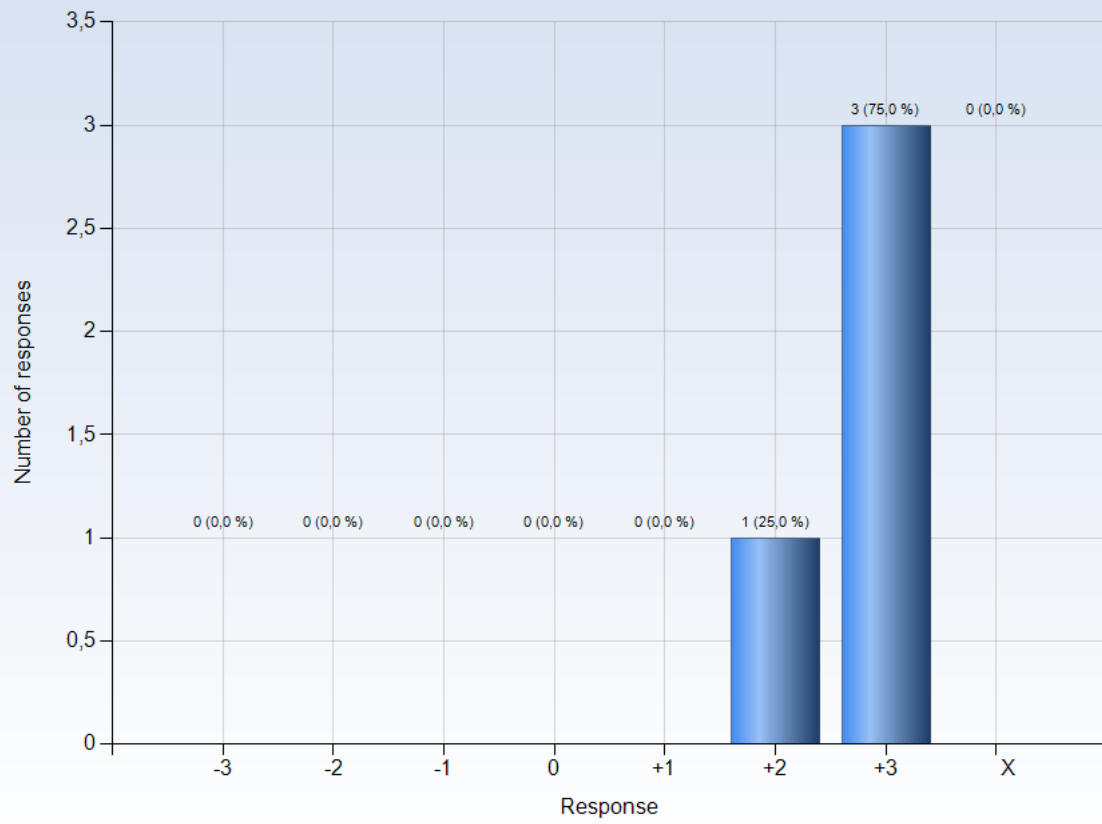
X = I decline to take a position on the statement

1. I worked with interesting issues



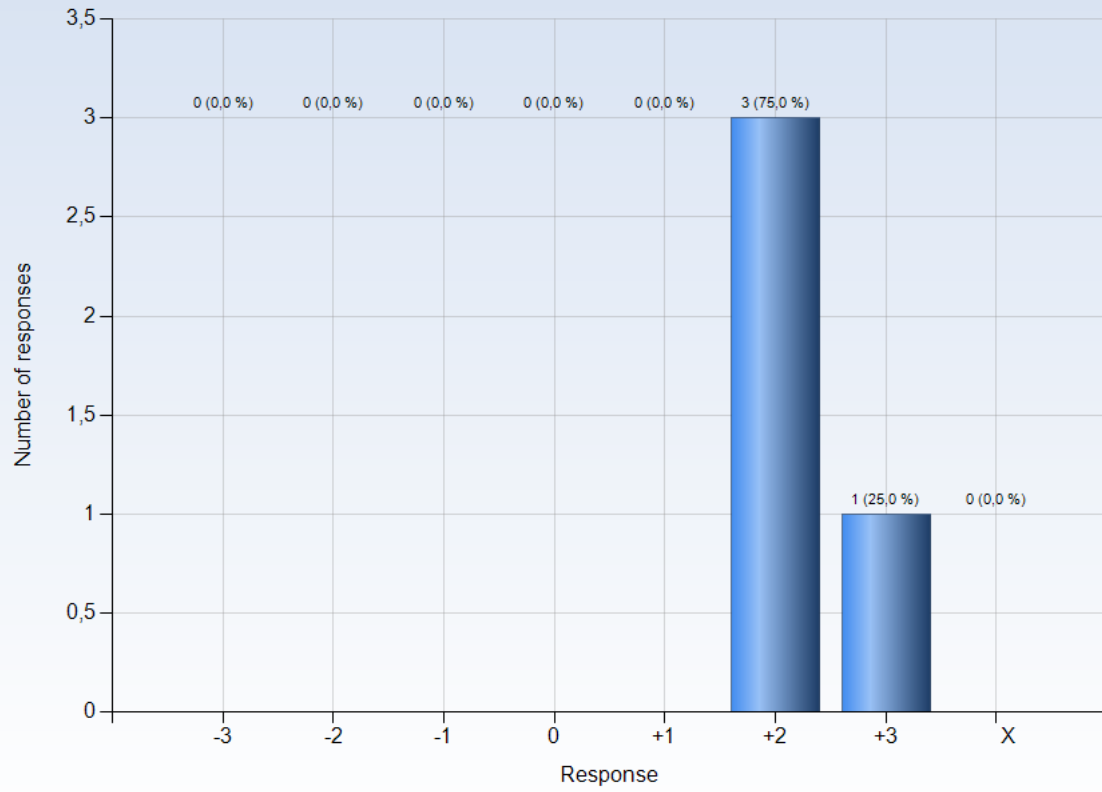
Comments

4. The course was challenging in a stimulating way



Comments

7. The intended learning outcomes helped me to understand what I was expected to achieve

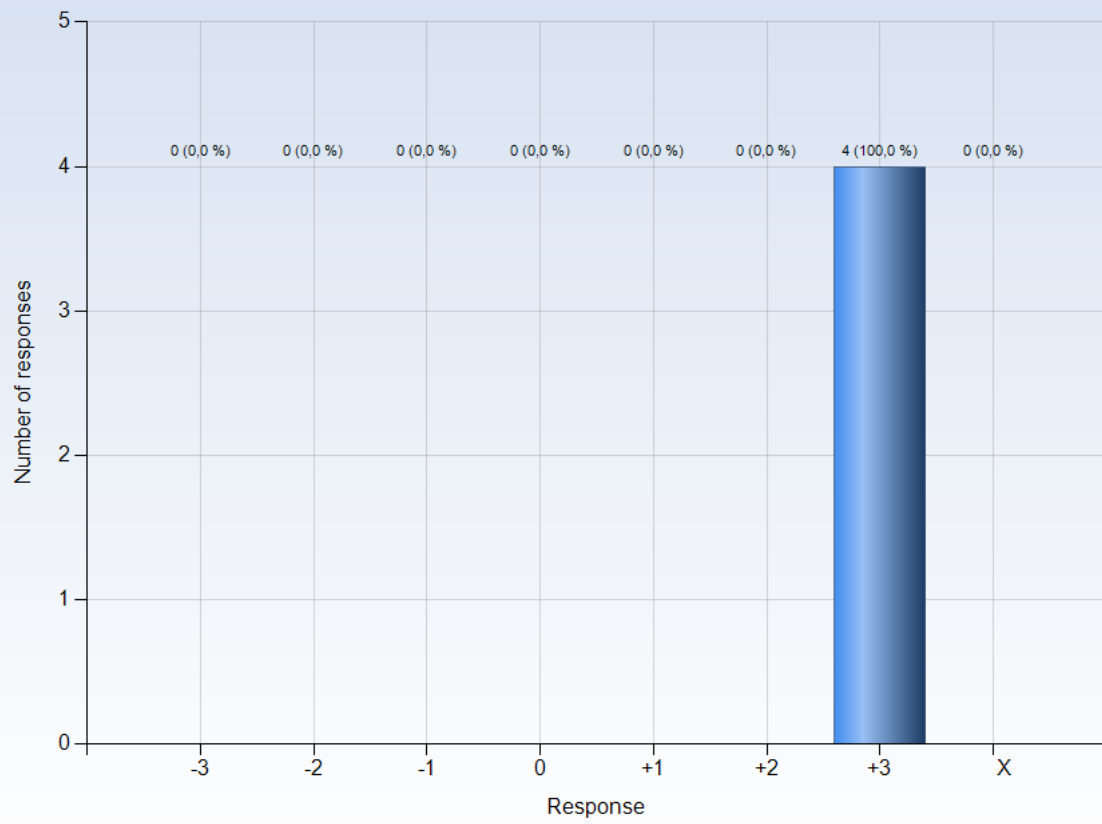


Comments

Comments (My response was: +2)

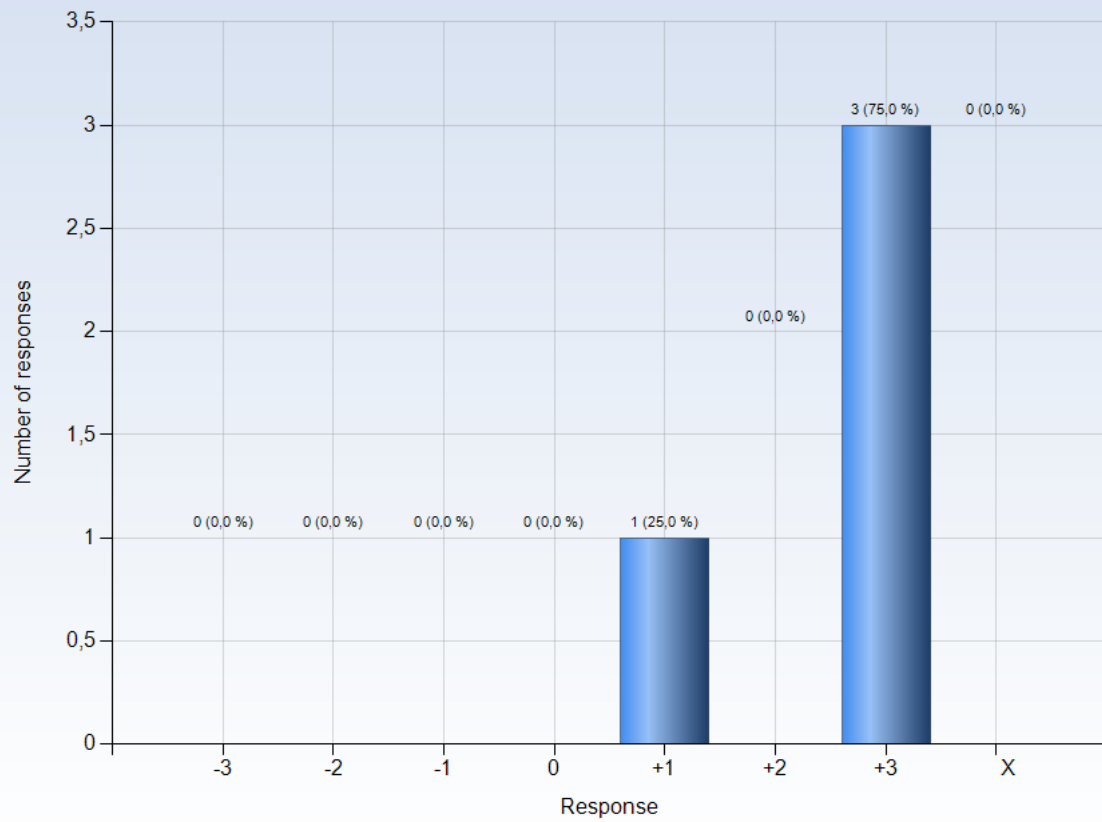
Did not pay close attention to ilos. However in retrospect I think the course reflected them well.

10. I was able to learn from concrete examples that I could to relate to



Comments

11. Understanding of key concepts had high priority

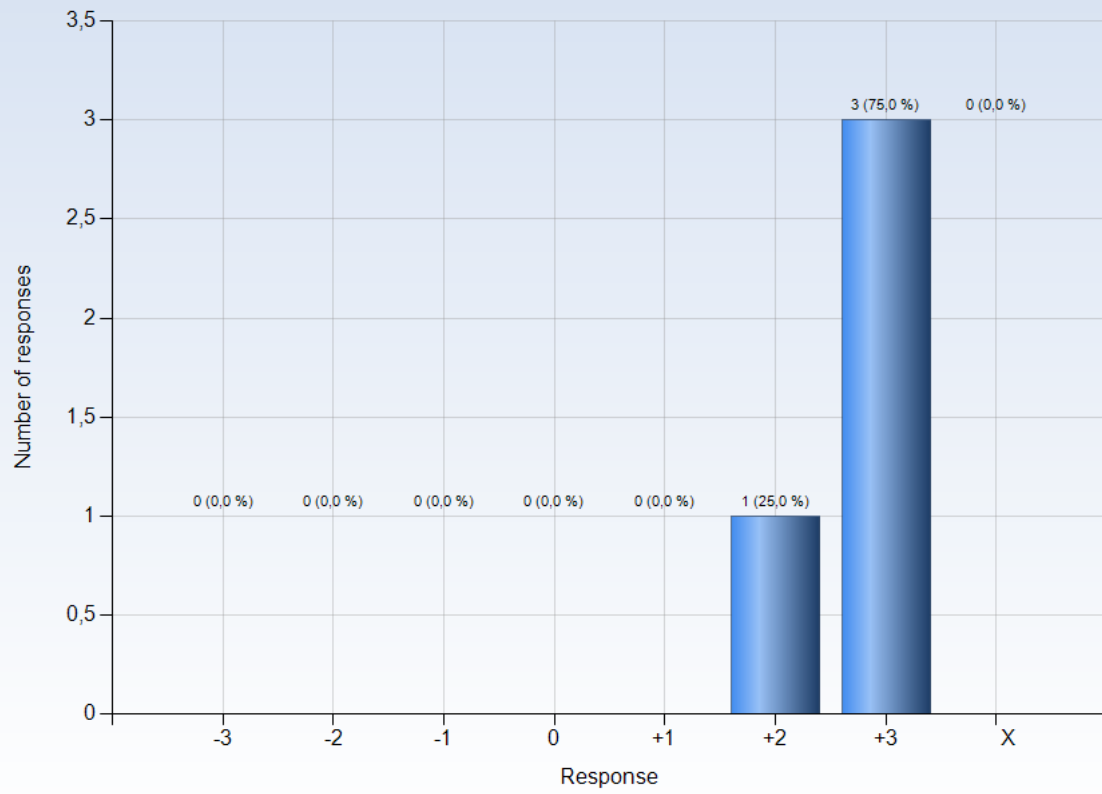


Comments

Comments (My response was: +3)

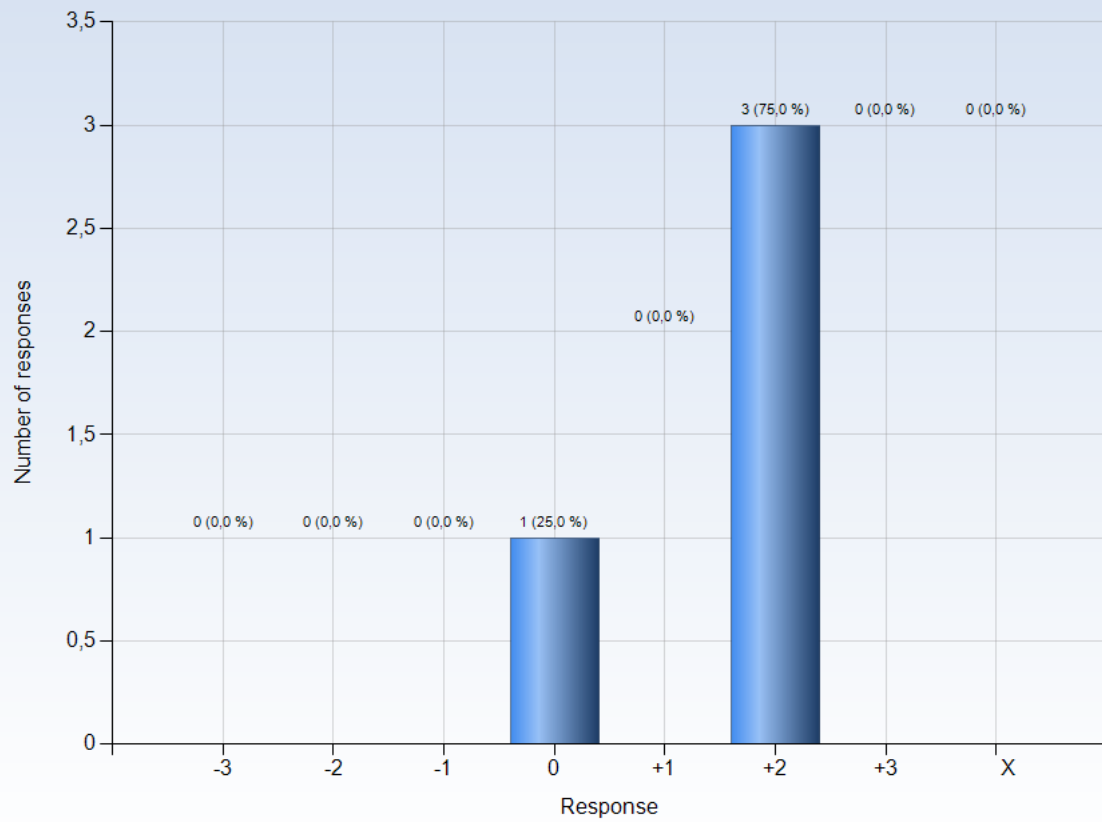
A lot of effort was put into filtering inter stationary case to allow for a smooth transition into the time-varying case

12. The course activities helped me to achieve the intended learning outcomes efficiently



Comments

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

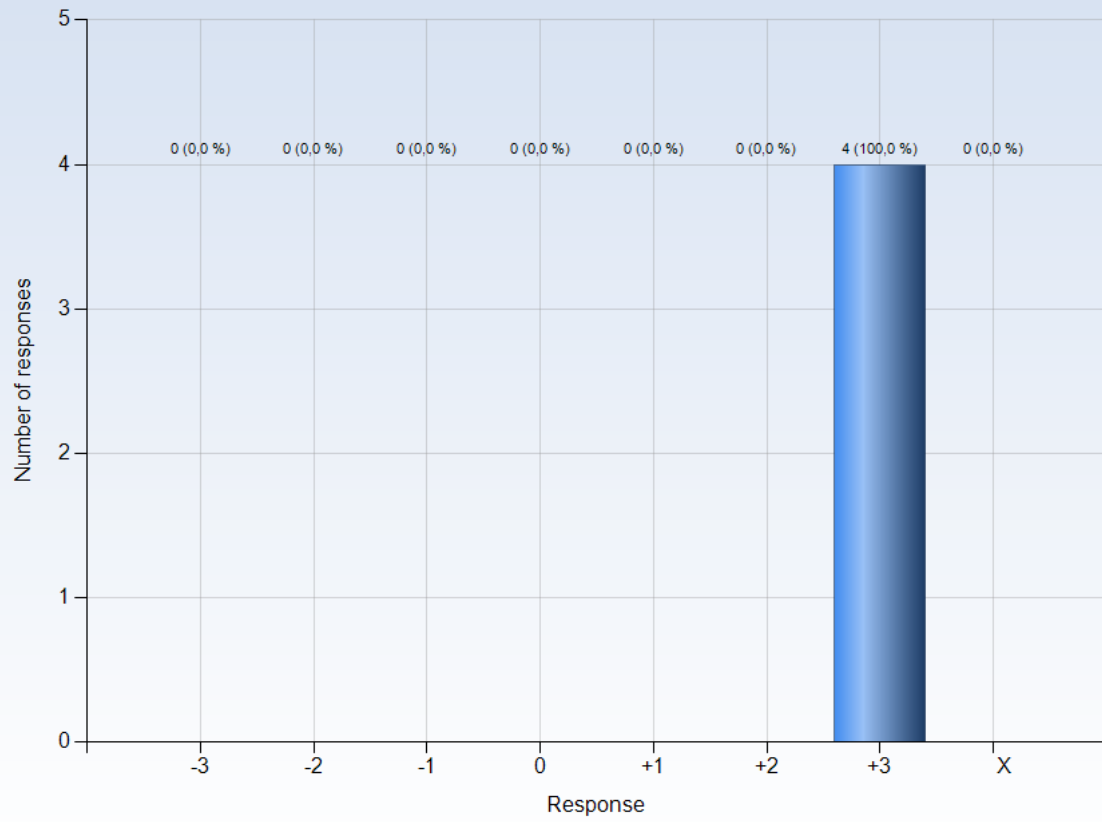


Comments

Comments (My response was: +2)

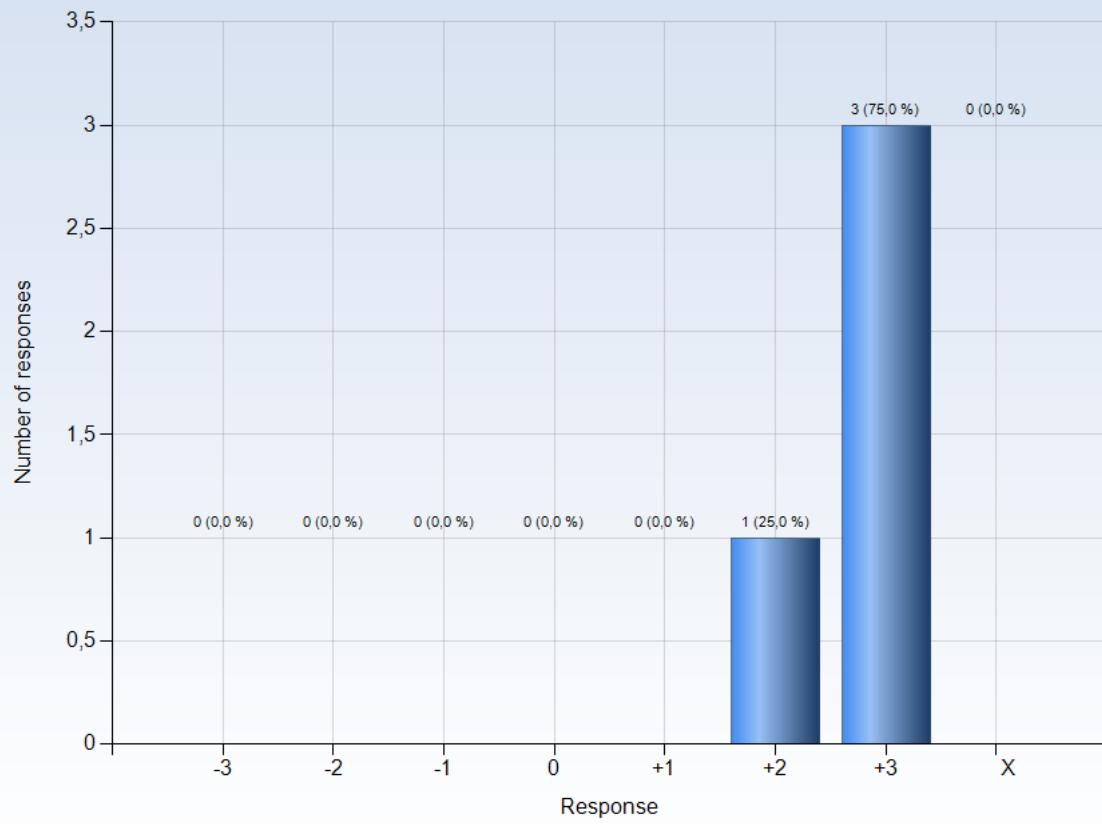
I thought the feedback on the homework's could have been more thorough at times

16. The assessment on the course was fair and honest



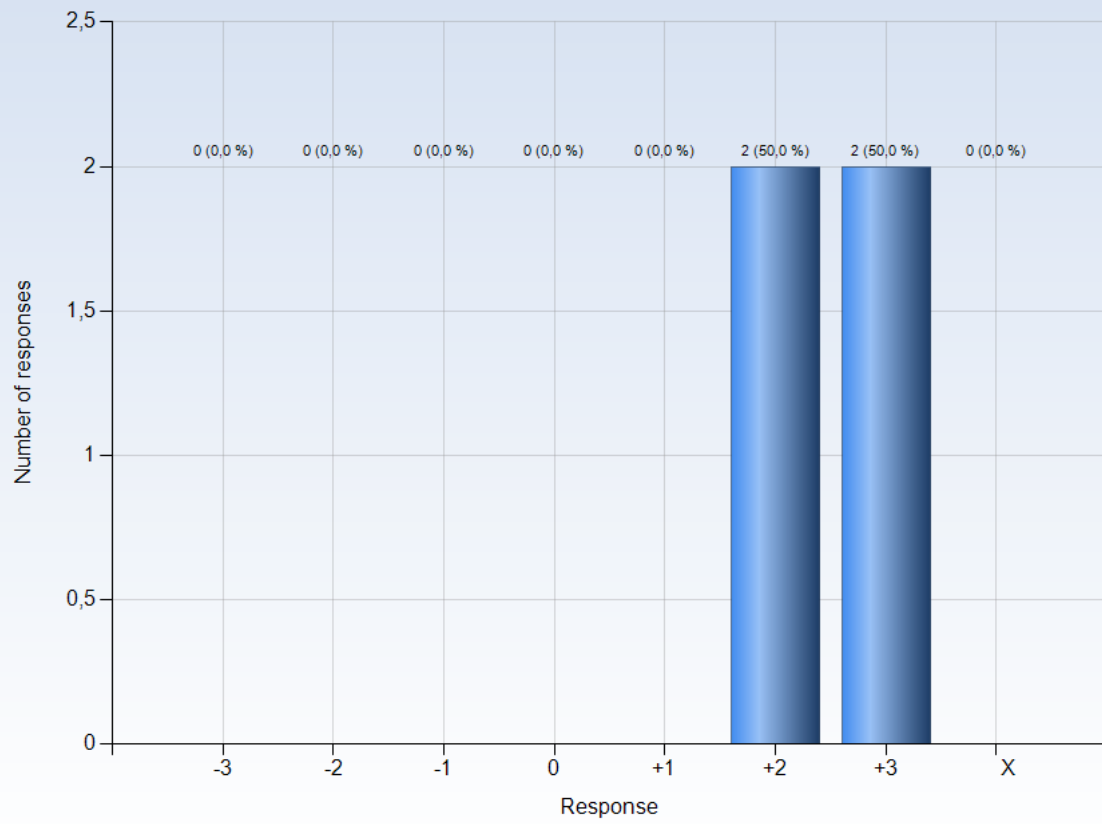
Comments

17. My background knowledge was sufficient to follow the course



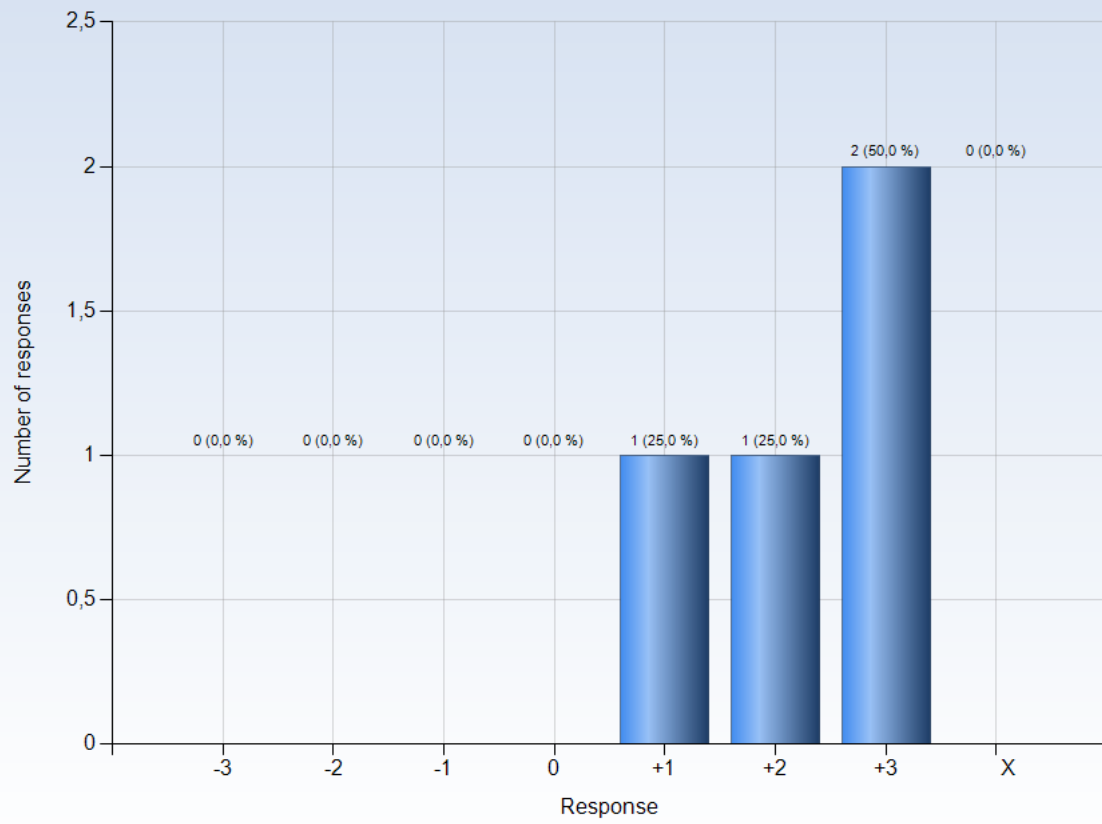
Comments

19. The course activities enabled me to learn in different ways



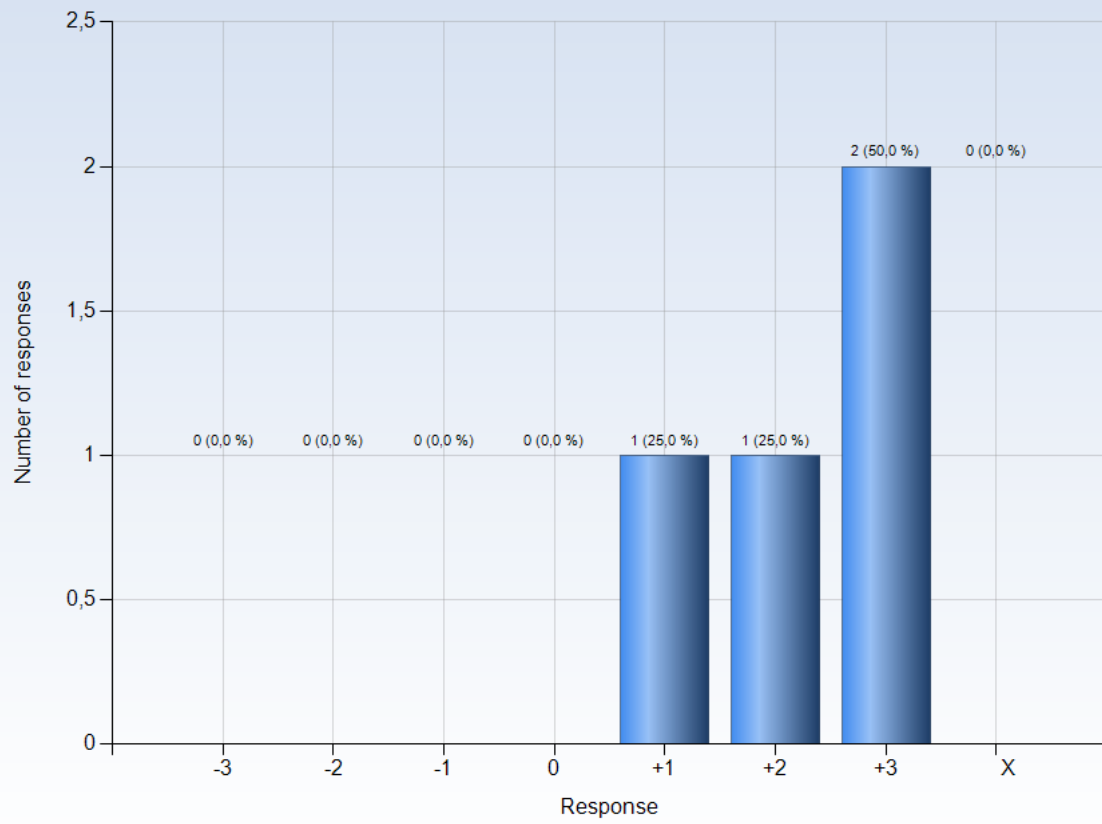
Comments

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