Report - DD2413 - 2024-07-03

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.

We used the standard 12 statements/4 general questions LEQ course questionnaire to gather feedback from our students. The goal was to assess their learning experience and identify opportunities for course improvement.
Additionally, we received feedback from seminars and assignments devoted to discussing the various courses that the students take from the program integrating course of the interactive media technology program.

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.)

Students interacted with the teaching team in the lectures (where quite often more than one teacher was present), tutorials and lab sessions. During the project work, each group was assigned a mentor from the teaching team to guide them through the process. In the final project presentation session, most members of the teaching team were present and provided feedback to the different groups.

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

The course consisted in 7 lectures with topics ranging from how to conduct Human-Robot Interaction research to the automatic perception of human social signals, robot learning and the generation of verbal and nonverbal behavior. There were two hands-on tutorials to deepen some of the concepts from the lectures: one on using the R language for experimental data analysis, and another tutorial for students to receive a quick overview of the APIs of the different social robots available for the project.

The project topic was selected by students with help from the teaching team. For feedback on the project work, there was a project pitch presentation session early on, and additional feedback as needed by the member of the teaching staff assigned to mentor that group. The project evaluation criteria were made available to students. Students had the option to focus on a more technical project or a project more focused on the evaluation of human-robot interactions, and the grading criteria was adjusted to make sure both types of projects were graded fairly.

The final grade of the course is in the A-F scale, given by 20% * LAB1, 20% * LAB2, and 60% * PRO1. The current examination components are as follows:
- LAB A - Laboratory work, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- LAB B - Laboratory work, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- PRO A - Project work, 4.5 credits, grading scale: A, B, C, D, E, FX, F

The grading criteria for the different evaluation components were made available to students on the course canvas and in the first lecture.

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?

As in previous years, students reported that the workload was appropriate, with a higher workload during the project period. The only issue was the fact that the project work continued over the Christmas break due to the way P2 is planned. The project activities began at the end of November and the presentations were in mid-January, but because of other course duties, some students ended up using the holiday break to work on the projects.

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 course grades were quite positive. No one who committed to do the course failed and the grades were generally high.
Compared to last year, there was slightly more variability in the project grades. This year the number of registered students increased by over 50%. One possible reason for the grade diversity is the (even more diverse) set of students taking the course.

STUDENTS´ANSWERS TO OPEN QUESTIONS
What does students say in response to the open questions?

Students valued the course setup with the intro lectures in the beginning, lab assignments, and the project. In the project, they valued the fact that they could define their own work and that they got to work with real robots. As in previous years, there were some comments regarding the timing of the project (overlap with the holidays) which we plan to further address in the coming year.

SUMMARY OF STUDENTS' OPINIONS
Summarize the outcome of the questionnaire, as well as opinions emerging at meetings with students.

Students generally found the course content engaging and appreciated the hands-on project and support from the teaching team, but some felt that similar sources led to repetitive reflections. Teamwork proved challenging due to the project timing, making collaboration difficult. Future students are recommended to be well-prepared for seminars to ensure active participation.

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.

We understand the students' impressions and will actively work on this feedback to improve the course in HT24.

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 number of survey responses wasn't enough to distinguish differences based on student gender, nationality, or disability. However, students came from a diverse academic background. A majority were from the Masters in Systems, Control, and Robotics, but a significant portion were from Media and Interaction Design programs, and we had a high number of exchange students too. This diversity presents a challenge in finding the right balance in the course content: ensuring it's neither too technical for one group nor too simplistic for another. To account for this, we've made efforts to ensure that grading reflects the varied contributions in human-robot interaction, from more technical and systems-oriented to more human-centric.

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

There are two developments we plan to prioritize this year:

1. Revisit the content of the lectures to ensure (a) greater links to the project and (b) avoid repetitive content.

2. Project timeline: to address recurring comments on the difficulty of executing the project during the P2 break, we will push the project pitch presentation as early as possible and redesign Assignment 2. This revised assignment will primarily focus on the technical implementation of the project, enabling students to dedicate their project work time to experimental validation and report writing.

Additionally, and in line with last year, we will set up regular, fixed times each week for students to consult with mentors, ensuring opportunities for regular feedback, especially during the end of November and December.

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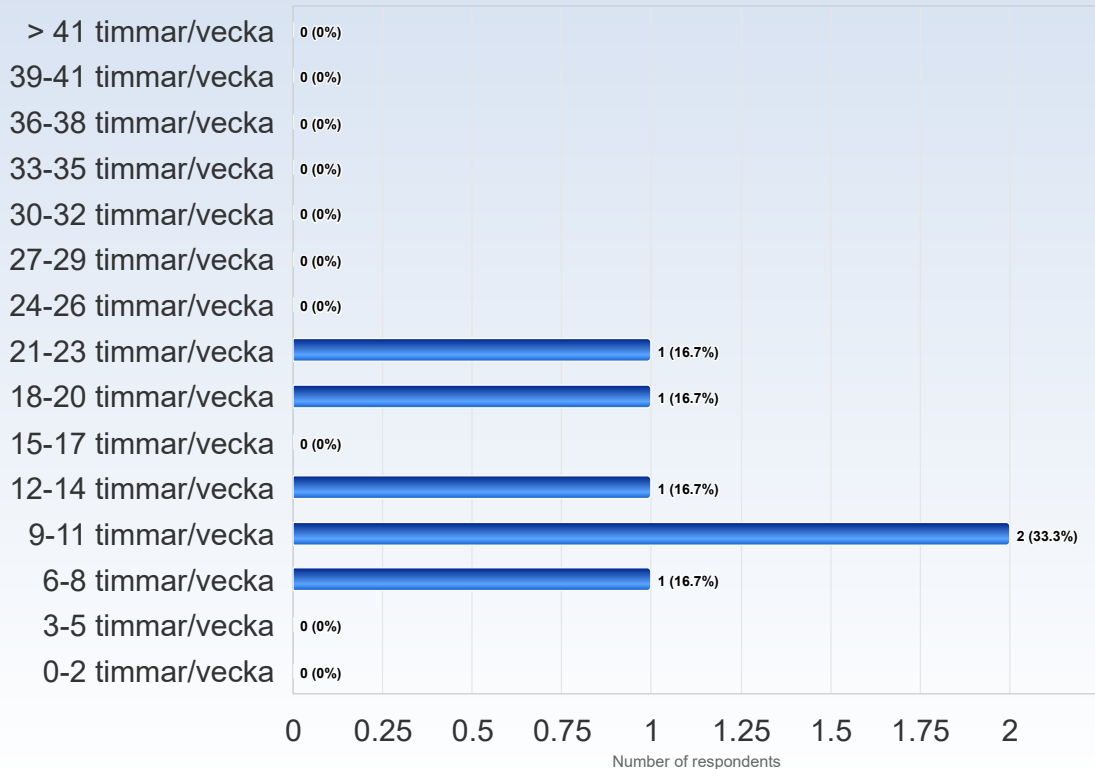
On average, how many hours/week did you work with the course (including scheduled hours)?

> 41 timmar/vecka	0 (0%)
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	1 (16.7%)
18-20 timmar/vecka	1 (16.7%)
15-17 timmar/vecka	0 (0%)
12-14 timmar/vecka	1 (16.7%)
9-11 timmar/vecka	2 (33.3%)
6-8 timmar/vecka	1 (16.7%)
3-5 timmar/vecka	0 (0%)
0-2 timmar/vecka	0 (0%)

Number of respondents

Comments

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

Comments (I worked: 12-14 timmar/vecka)
I didn't go to any of the lectures. Between reading papers and working on the assignments it still ended up being a somewhat relaxing course, with the study taking up the largest amount of time (and being the most fun).

Comments (I worked: 18-20 timmar/vecka)
I think the workload for this course is suitable. And since the content and the topic of the project are interesting, I am willing to spend time on it.

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
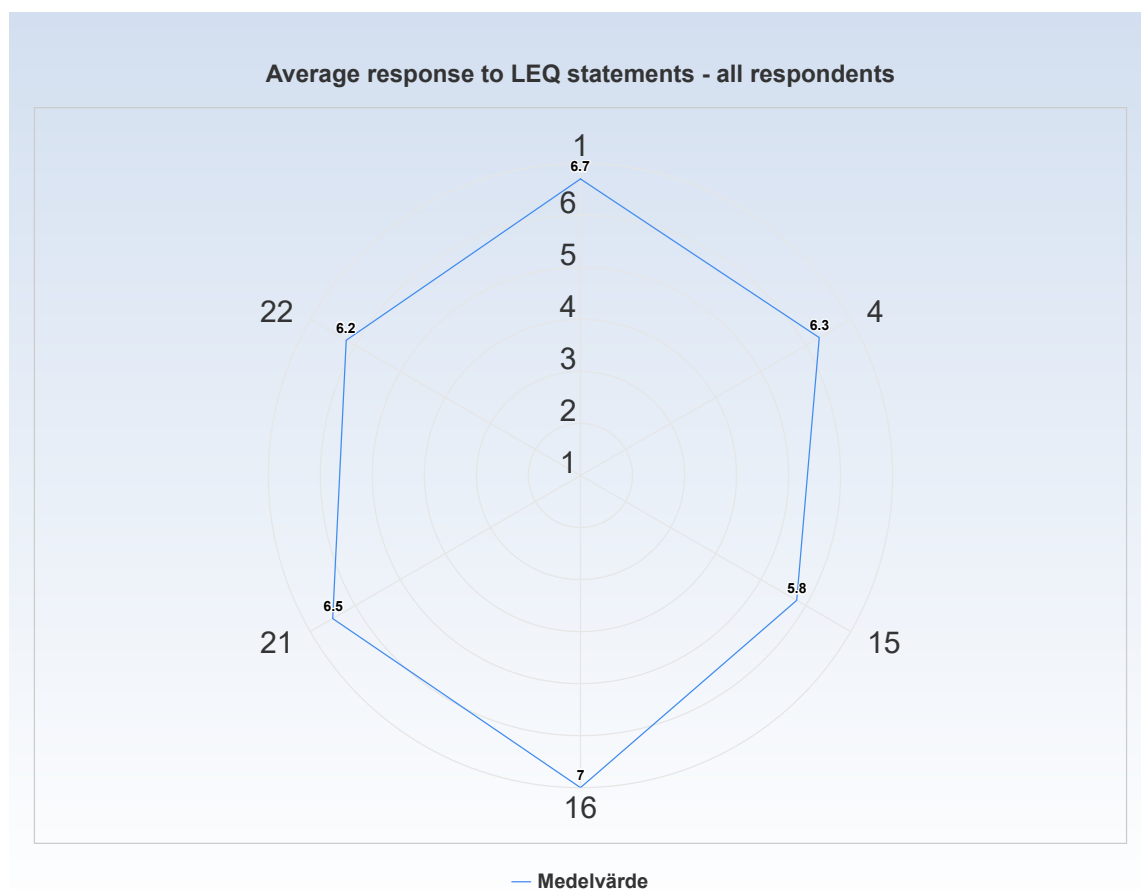
KTH Learning Experience Questionnaire v3.1.4

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.
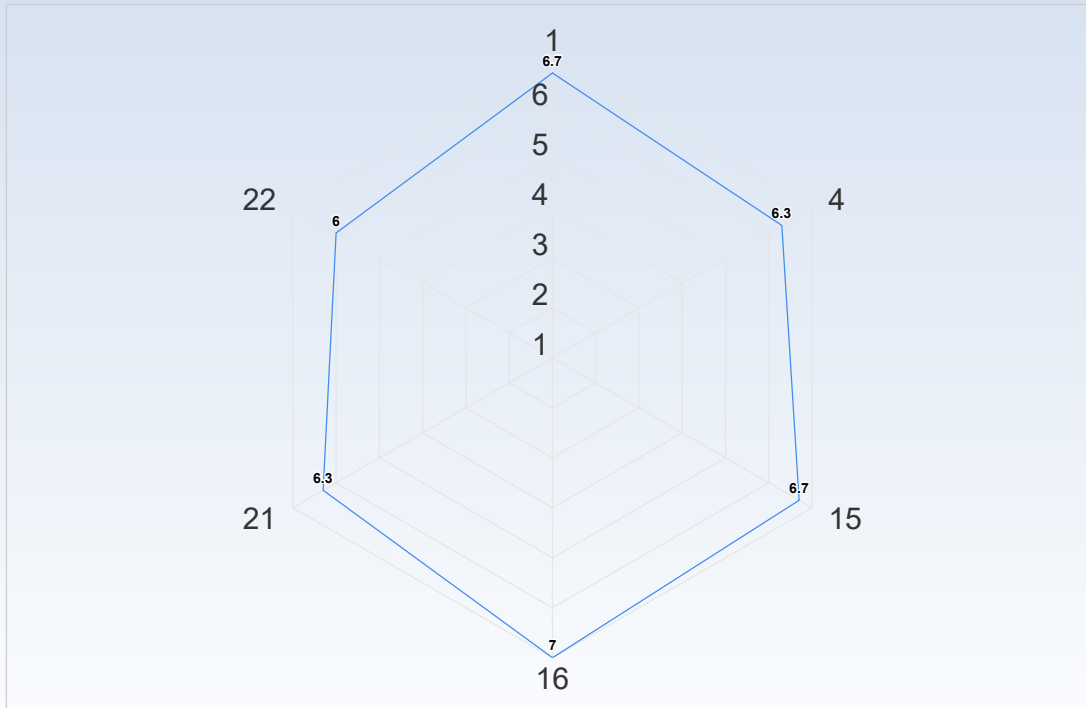

Ramsden, P. (2003). *Learning to Teach in Higher Education*, Chapter 6, pp. 84-105. New York: RoutledgeFalmer.

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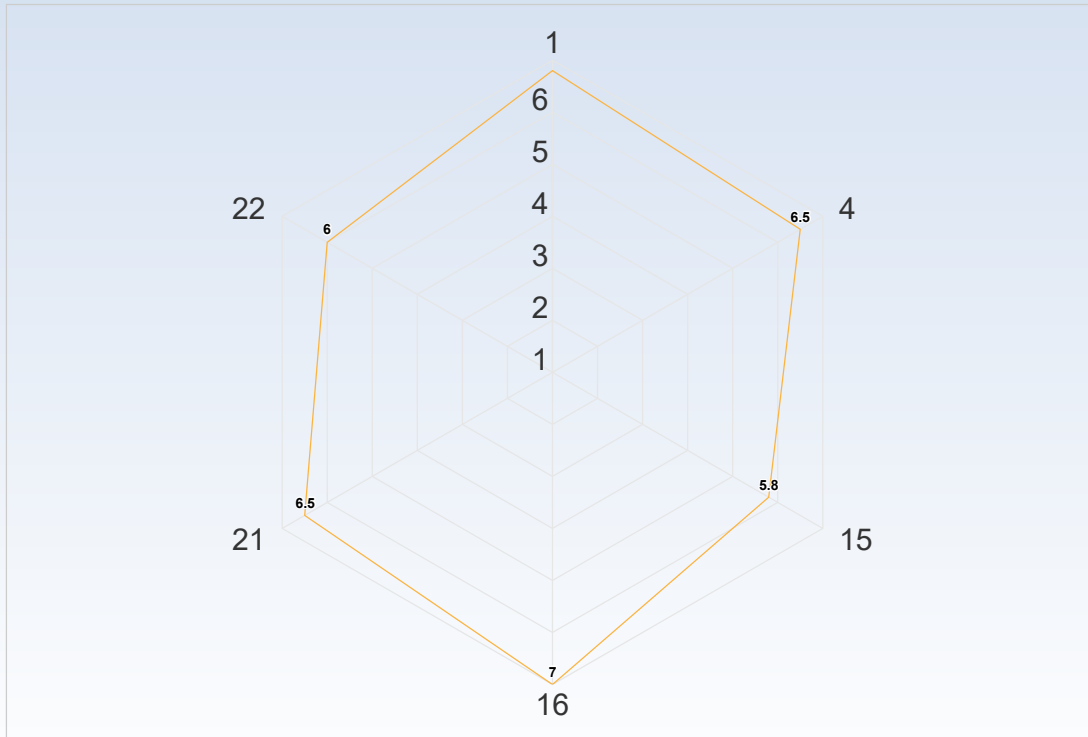
Legend: — Kvinna — Man — Annat — Vill ej uppge

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

Ja — Nej — Vill ej uppge
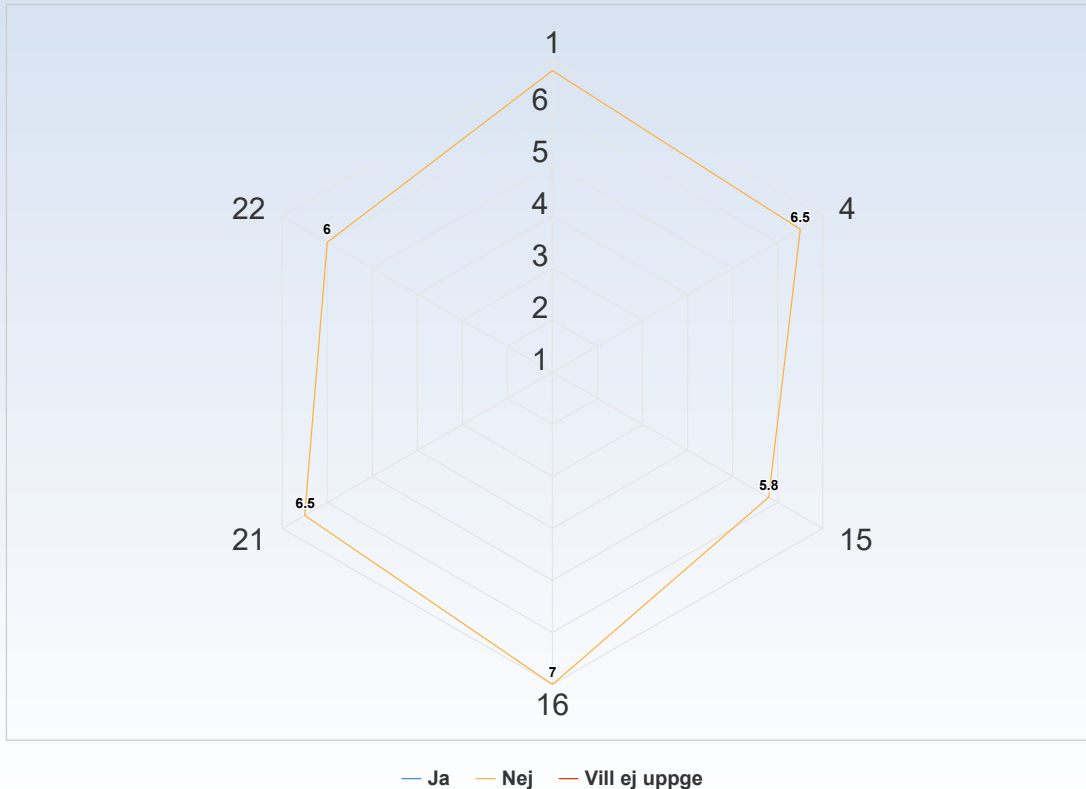
GENERAL QUESTIONS

What was the best aspect of the course?

What was the best aspect of the course? (I worked: 6-8 timmar/vecka)
Getting to work on a capstone project.

What was the best aspect of the course? (I worked: 9-11 timmar/vecka)
The course setup was really nice. That it started with an overview of what social robotics is, followed by how to plan and perform experiments. The introduction to R was also good, even though it was a bit too quick, one still got the opportunity to try it out with a helper present.

The best thing was the project, I enjoyed it a lot and learned a lot form it.
We design our own work through intelligent robots, which is great.

What was the best aspect of the course? (I worked: 12-14 timmar/vecka)
The study. It was cool to work through the whole process of digging through the literature to find something to expand on, designing the study and then actually getting participants and analyzing the data.

What was the best aspect of the course? (I worked: 18-20 timmar/vecka)
I love the project the best. In this course, we can choose our project topic and work with real robots. Besides, we have a lot of working sessions to discuss the project with the supervisors, which provided us with a lot of support and inspiration.

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

What would you suggest to improve?

What would you suggest to improve? (I worked: 6-8 timmar/vecka)
Maybe it would help to emphasize the importance of novelty in the capstone project.

What would you suggest to improve? (I worked: 9-11 timmar/vecka)
In the first week or two it was hard to understand what the course was about, what the goals or outcomes were.

I do understand that it could not be helped, and that there probably were no better dates to set the final presentations, but i want to point out that the presentation was set on the first day of the new period, meaning that some people had to leave (if they were exchange students).
More tutoriol of the robots (like) Cozmo. Maybe previous students can leave their work to the other.

What would you suggest to improve? (I worked: 12-14 timmar/vecka)
See comments under learning experience.

What would you suggest to improve? (I worked: 18-20 timmar/vecka)
I think we could advance with the proposal presentation (one week) so that we get feedback and start the group project earlier. Period 2 is extremely short, and when we implemented the code and planned to start the user experiment, it was near the end of the period. Some people are not always available for the project during the holidays.

What would you suggest to improve? (I worked: 21-23 timmar/vecka)
The time planing around the project was not ideal. And it was hard to get participants

What advice would you like to give to future participants?

What advice would you like to give to future participants? (I worked: 6-8 timmar/vecka)
Focus on Novelty of the study and start early

What advice would you like to give to future participants? (I worked: 9-11 timmar/vecka)
for the project, to perform experiments will take time, so do design it and start with participants early. And keep in mind that holidays are times when people probably can't parttake.
Start early

What advice would you like to give to future participants? (I worked: 12-14 timmar/vecka)
Enjoy the study. Figure out where you're getting your participants ahead of time or it can become pretty stressful.

What advice would you like to give to future participants? (I worked: 18-20 timmar/vecka)
Try to think and evaluate everything carefully at the start of the project. And get the best use of the working hours by discussing your idea with the supervisors; they will provide you with many beneficial comments that will help in the later experiment.

What advice would you like to give to future participants? (I worked: 21-23 timmar/vecka)
Make sure to have a good idea for the project

Is there anything else you would like to add?

Is there anything else you would like to add? (I worked: 6-8 timmar/vecka)
Nope

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

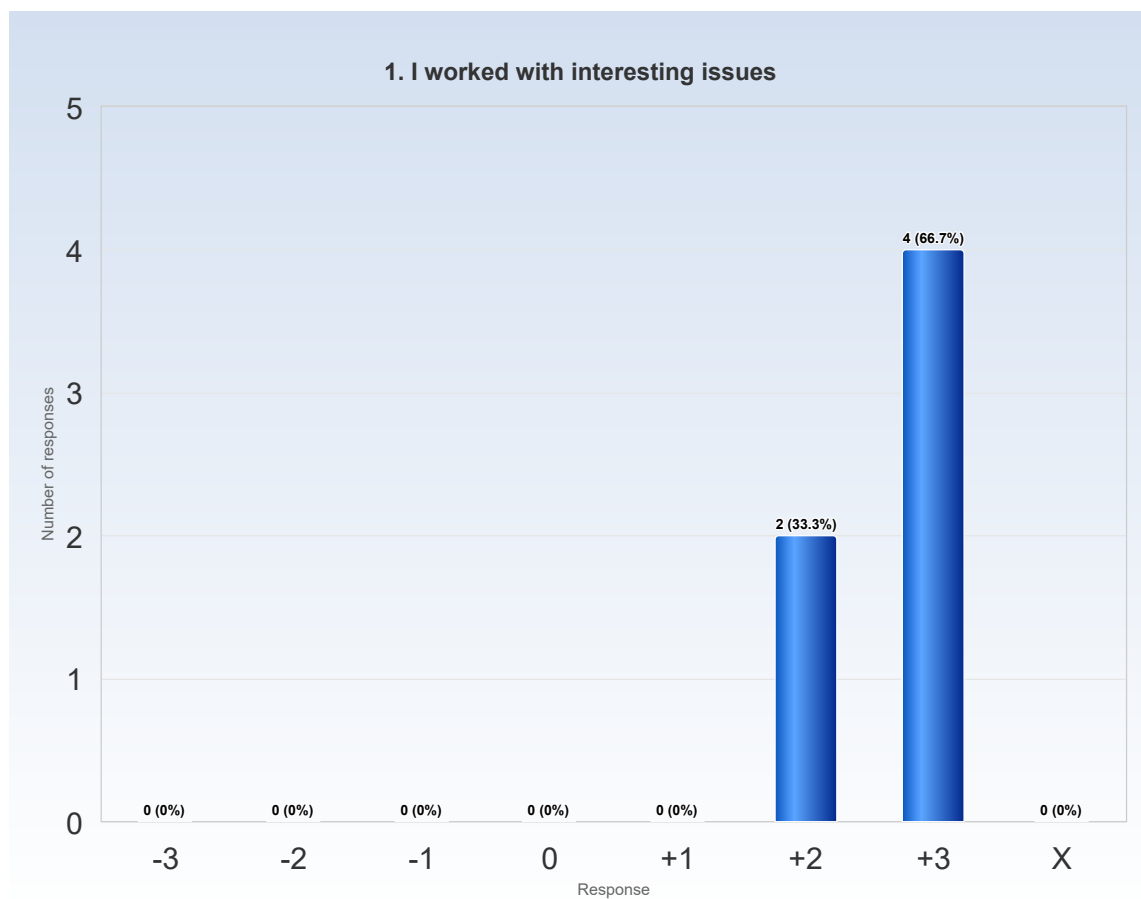# SPECIFIC QUESTIONS

RESPONSE DATA

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

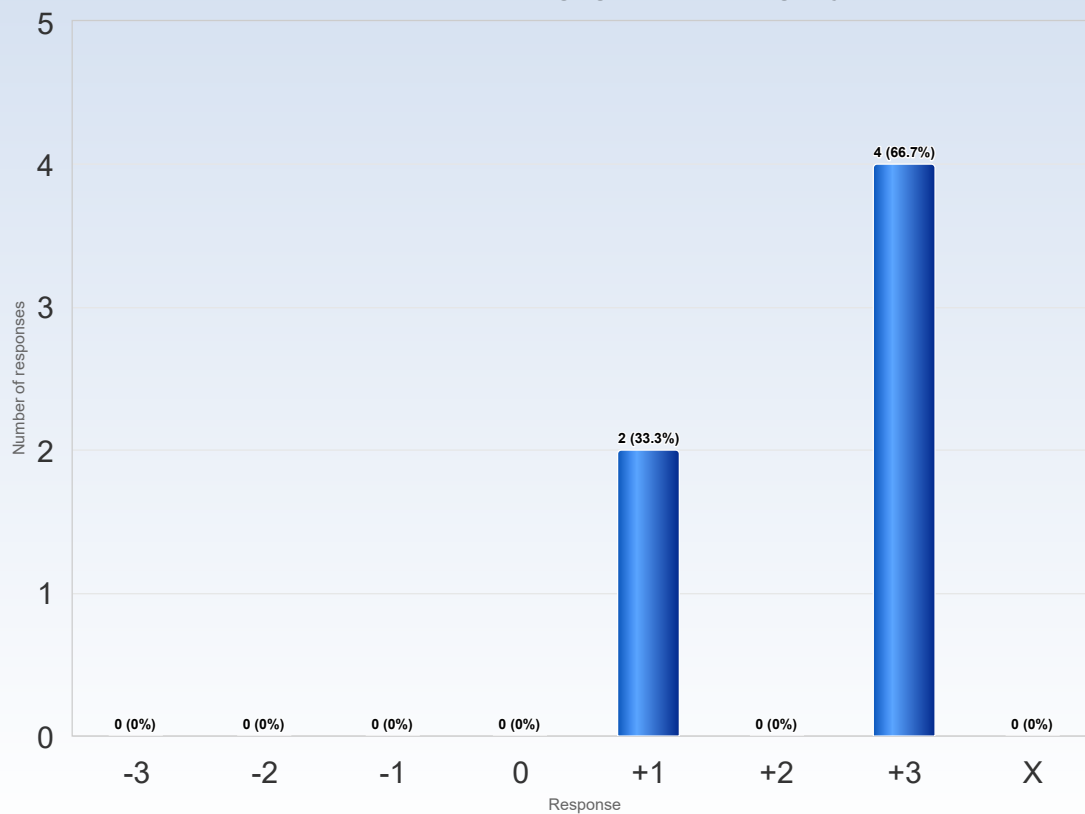-3 = No, I strongly disagree with the statement
0 = I am neutral to the statement
+3 = Yes, I strongly agree with the statement

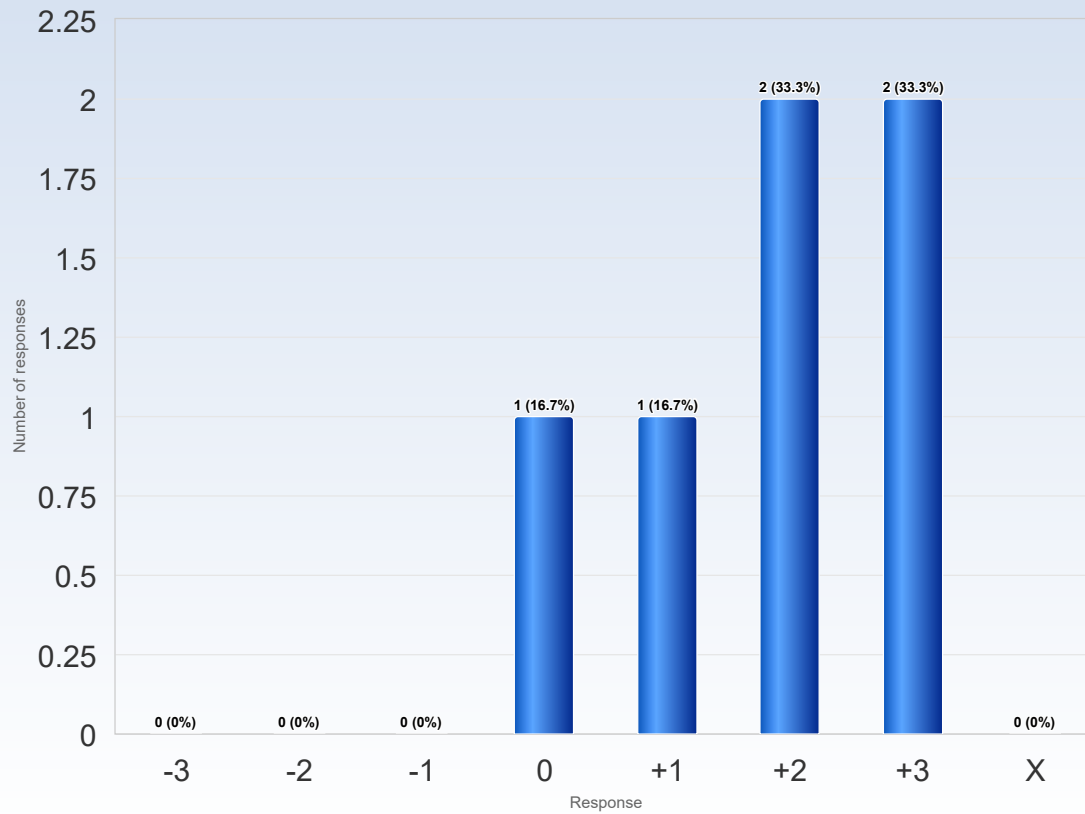X = I decline to take a position on the statement

1. I worked with interesting issues

4. The course was challenging in a stimulating way

Number of responses vs Response

- -3: 0 (0%)
- -2: 0 (0%)
- -1: 0 (0%)
- 0: 0 (0%)
- +1: 2 (33.3%)
- +2: 0 (0%)
- +3: 4 (66.7%)
- X: 0 (0%)

Comments

Comments (My response was: +3)

we learned about interesting topics

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

Comments

Comments (My response was: +2)
The only thing I wish we'd gotten here is like a list of common pitfalls/mistakes when designing a study. The feedback we got at our presentation was very good but it would've been nice to have had something like a checklist we could look through when designing our study.

16. The assessment on the course was fair and honest

Number of responses

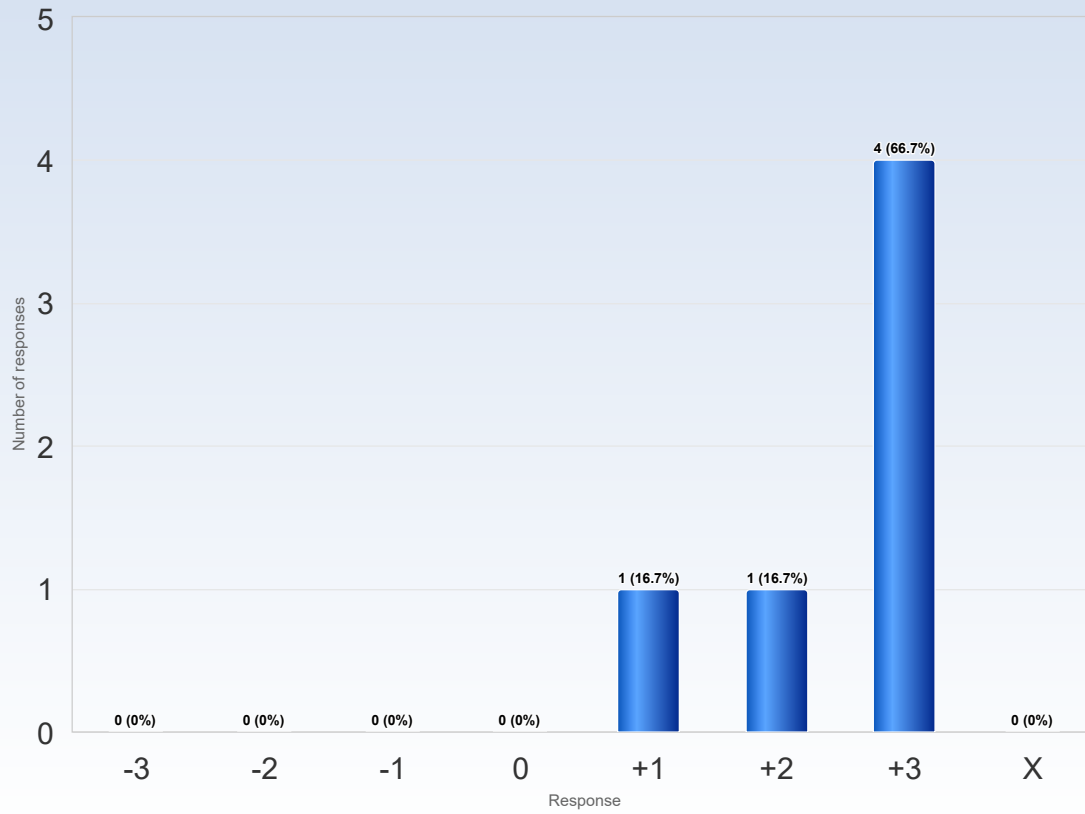| Response	Count
-3	0 (0%)
-2	0 (0%)
-1	0 (0%)
0	0 (0%)
+1	0 (0%)
+2	0 (0%)
+3	6 (100%)
X	0 (0%)
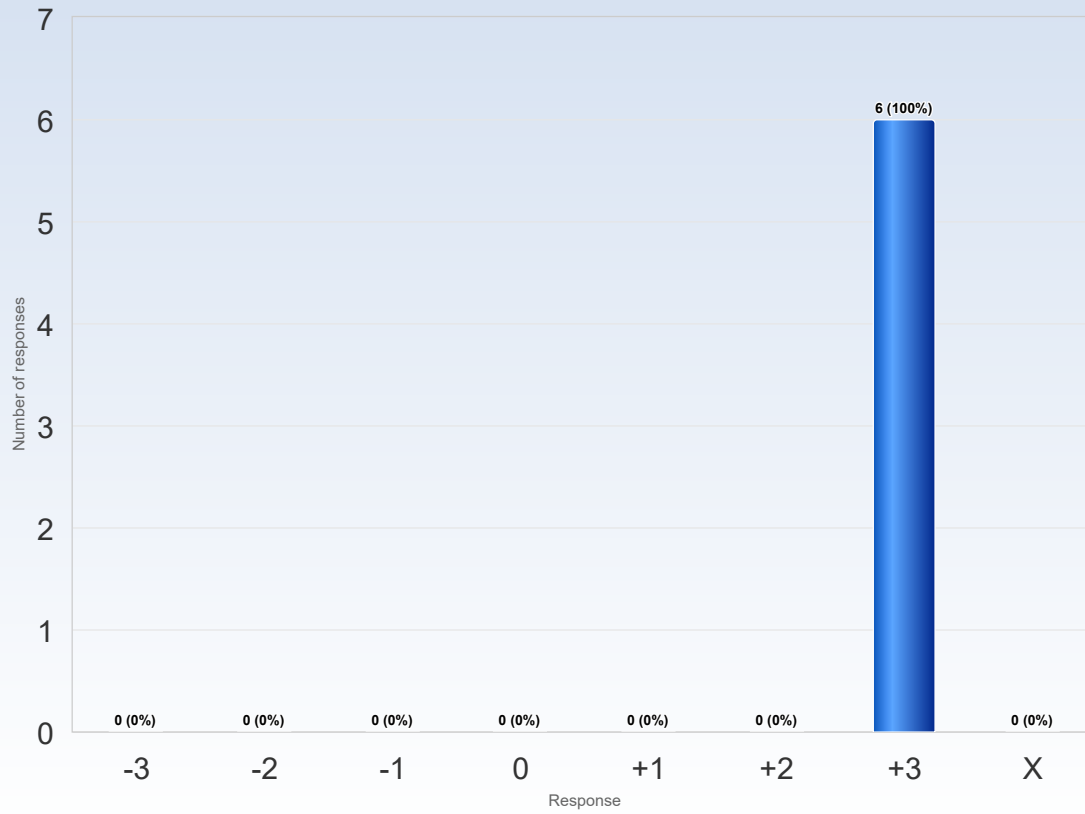
Comments

Comments (My response was: +3)
   although the points they used for grading was not published after the grading, one only got to see which grade the group received

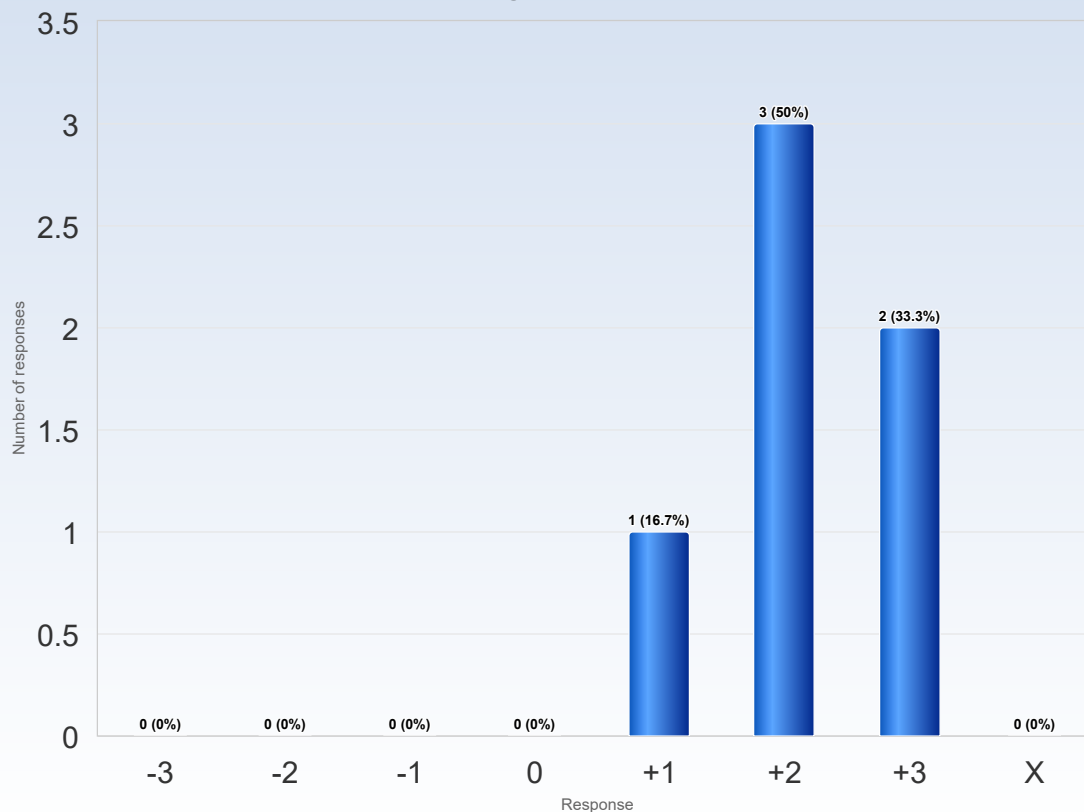## 21. I was able to learn by collaborating and discussing with others

Number of responses

Response	Count
-3	0 (0%)
-2	0 (0%)
-1	0 (0%)
0	0 (0%)
+1	1 (16.7%)
+2	1 (16.7%)
+3	4 (66.7%)
X	0 (0%)

Response

Comments

Comments (My response was: +3)
I really liked working on the project

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

Comments

Comments (My response was: +1)
The Cozmo robots supports are few online

Comments (My response was: +2)
Our assigned mentor/TA was gone most of December which was when we were doing most of our work, but that's just how it is to hold a course during p2 I guess. It didn't end up being a big problem, but we could've used the extra help.

Comments (My response was: +3)
was a bit hard when Christmas came and everyone went on holiday, but it might have been our group's fault that we postponed everything until that time