

Report - DD2438 - 2024-08-08

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):

Petter Ögren, petter@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.

The standard online course evaluation form was used (from the same webpage as this course analysis). The form enables separation based on gender etc.

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.)

We had meetings with the students every week of the course, to give feedback on their progress.
There was also a designated feedback meeting with course representatives on the 21st of February to enable students to give feedback early.

COURSE DESIGN

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

The course is a project course with pass/fail grades. It is examined through 4 project assignments that are being presented both orally and in a written report. For all assignments there is also a competition among the students to enable them to see benefits/drawbacks of different approaches.

All projects are using git to improve accessibility for the students, as well as a means to track student activity after they fork the project, in case some groups have very uneven work loads where individuals try to get a pass without doing their fair share.

For assignments 1-3 we use the freely available tool Unity3D.

The setup of the assignments are updated and improved each year.

The biggest change from 2023 to 2024 was that we revised Assignment 2 into a set of Multi-agent traffic scenarios and a formation keeping problem, and created a completely new Assignment 3 in the form of a Packman Capture the Flag problem.

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?

A 15-credit course running over 2 periods, which corresponds to a nominal workload of 20h/week. The median response in the course evaluation is 24-26h/week which is a bit high.

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?

53 students passed the course, and 12 students dropped the course.

The students dropping the course is unusually high, but most of them dropped the course early switching to other options. I believe most of them had got the wrong idea about the course format (project course with unusual setup). The course has been around for some time now, so it is surprising that all of a sudden a bunch of students show up that are not aware of the format.

The number of students starting the course was thus 65, which is a significant increase compared to 42 (in 2023) and 50 (in 2022).

STUDENTS' ANSWERS TO OPEN QUESTIONS

What does students say in response to the open questions?

Some quotes from the course evaluation

Best aspects of course:

The ability to form your own solutions without any restrictions made it really fun

The team organization encouraged us to compete to get the best results while helping each other to find better solutions.

Getting to experiment with whatever solution you believe in made it really fun

The projects' topics are very interesting.

Learn from other teams. The presentation part was really helpful as it gives me hints where to improve.

Suggestions for improvement:

Find a way to make sure both members of the team are active, it is not always for students to notify when their teammate is slacking.

I hoped for more discussion in the sessions. I don't know how to stimulate that. One thought would be to form smaller discussion groups where either people with the same or different approaches can discuss their progress. I felt many people didn't really bother to ask questions or even follow the presentations closely. I think there can be a lot of merit in discussing the solutions on a deeper level if this is possible.

Advise to future participants:

It is vital to start early! Be active in the sessions, try to interact with as many people in the course as possible many have interesting approaches

Additional comments:

Great course even though there are some problems and stuff that could be improved. Overall a great course which I very much enjoyed. One of my favorite courses!

SUMMARY OF STUDENTS' OPINIONS

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

Overall the students are happy with the course. They like the unusual format and the freedom of choosing their own approach to solving the problem.

The LEQ quantitative responses are in the range of (5.4-6.6) on a scale from 1 (bad) to 7 (good).

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.

Overall the course works well.

Throughput is good. Feedback is positive. Workload is reasonable (but a bit high). The quality of the final reports are in many cases very high. The continuous updates of the assignment seems to be working well. But there are still areas that can be improved upon for next year, in particular some details in Assignment 3.

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?
-

Overall, the learning environment is working very well.

All rated items had an average above 5.3 on a scale from 1 (worst) - 7 (best).

There were no students with disabilities (at least according to the course evaluation responses). International students were about 0.4 more positive than Swedish students in the LEQ responses. Women were in general about 0.2 less positive than men in the LEQ responses. Both these deviations are however small, and from a very high level of satisfaction (average across all aspects is around 6.0 out of 7).

PRIORITIZED COURSE DEVELOPMENT

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

We will continue to develop the assignments.

One possible area of improvement is to make the integration of ML-agents, a Unity package for Reinforcement Learning, easier to use.

Perhaps this can be done by adding some example early on in the course.

Ideally we would be able to pair up students with similar levels of ambition, which was also mentioned in student feedback, but this is hard in practice. Each year, a few students try to minimize effort, which is not fun for those around them. Perhaps the first assignment should be individual, and the remaining three in pairs. We will ponder these options when preparing the course for next year.

DD2438 - 2024-06-13

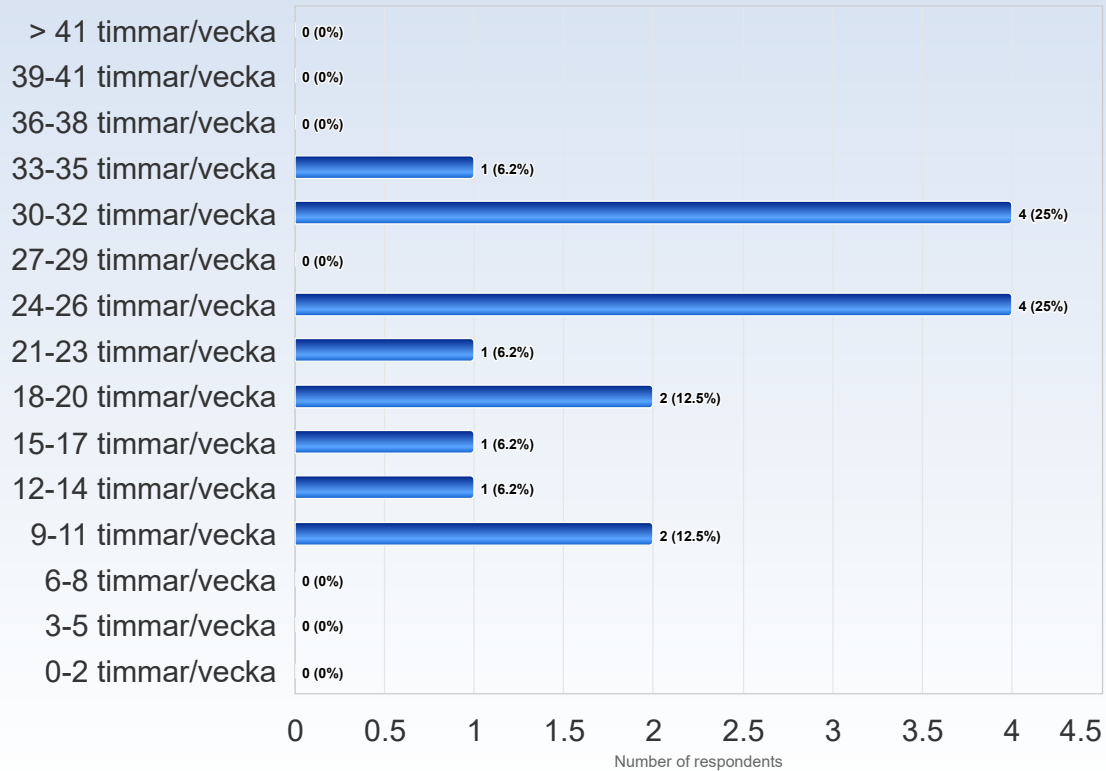
Antal respondenter: 60

Antal svar: 16

Svarsfrekvens: 26,67 %

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)

The course's workload was adequate

Easy course to pass if you've used unity before. You can decide yourself how heavy of a workload you want

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

The hours weren't always split evenly over the weeks, with some weeks (especially closer to the deadlines) and some assignments probably having more time spent on them on average.

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

It was a quite demanding course. I've spent about 80% of my study time on this course

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

The course workload was as expected, with some weeks being busier while some weeks not as busy.

The workload seems reasonable, but sometimes the assigned time was insufficient because some of the problems like traffic cars are much more difficult than others.

Due to over ambition I often put myself in a situation where I had too much work.

Pretty good, especially since it is a project course. It is quite heavy workload but not TOO much (however, very dependent on the assignment)

Comments (I worked: 30-32 timmar/vecka)

The workload was quite high. But that was clear to me beforehand

Should probably add a similar note i as "Programming under pressure" in the course description, stating that the course requires an abnormal workload. Much fun though!

I think it can vary a lot depending on the "hype" you have for the course. If you want to get good results, the number of hours per week increase quickly.

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

It depended a lot on the assignment. I think the second assignment was too heavy for example. I think the second assignment could have been split into two different projects.

LEARNING EXPERIENCE

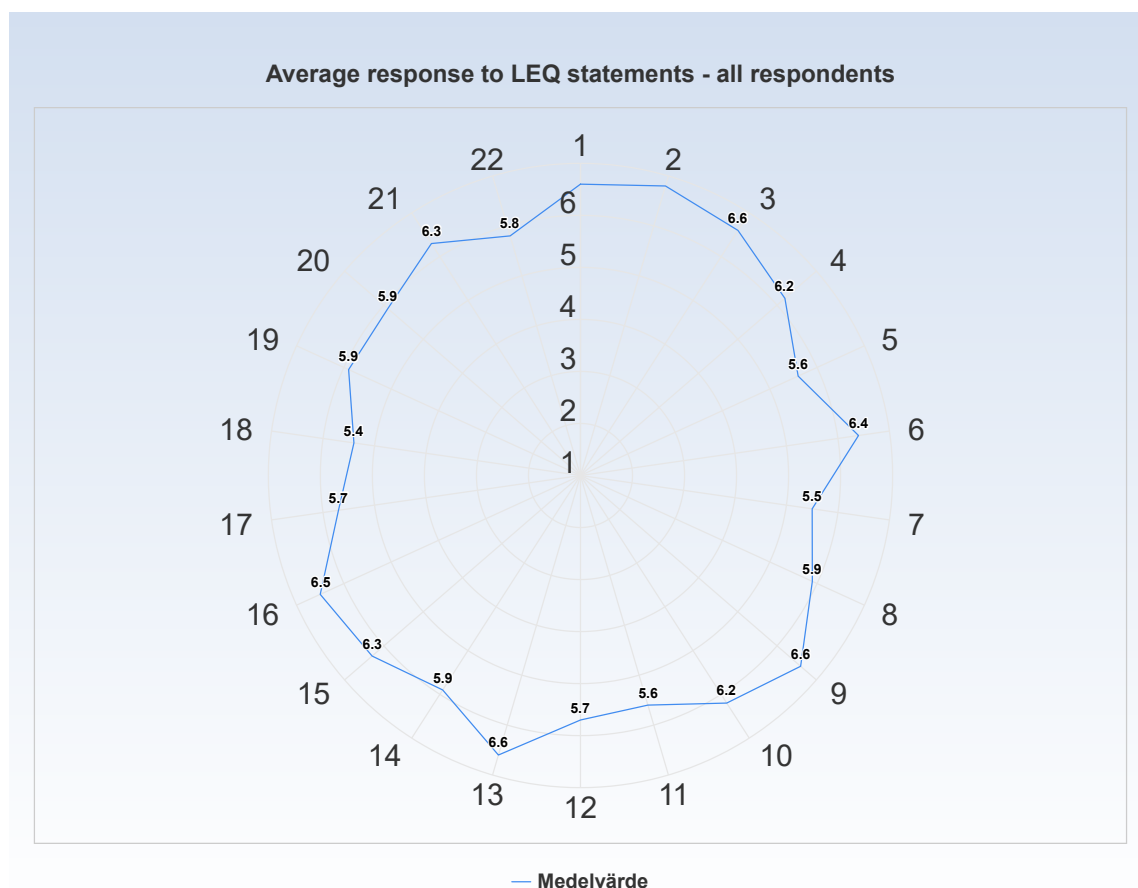
The polar diagrams below show the average response to the LEQ statements for different groups of respondents (only valid responses are included). The scale that is used in the diagrams is defined by:

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.

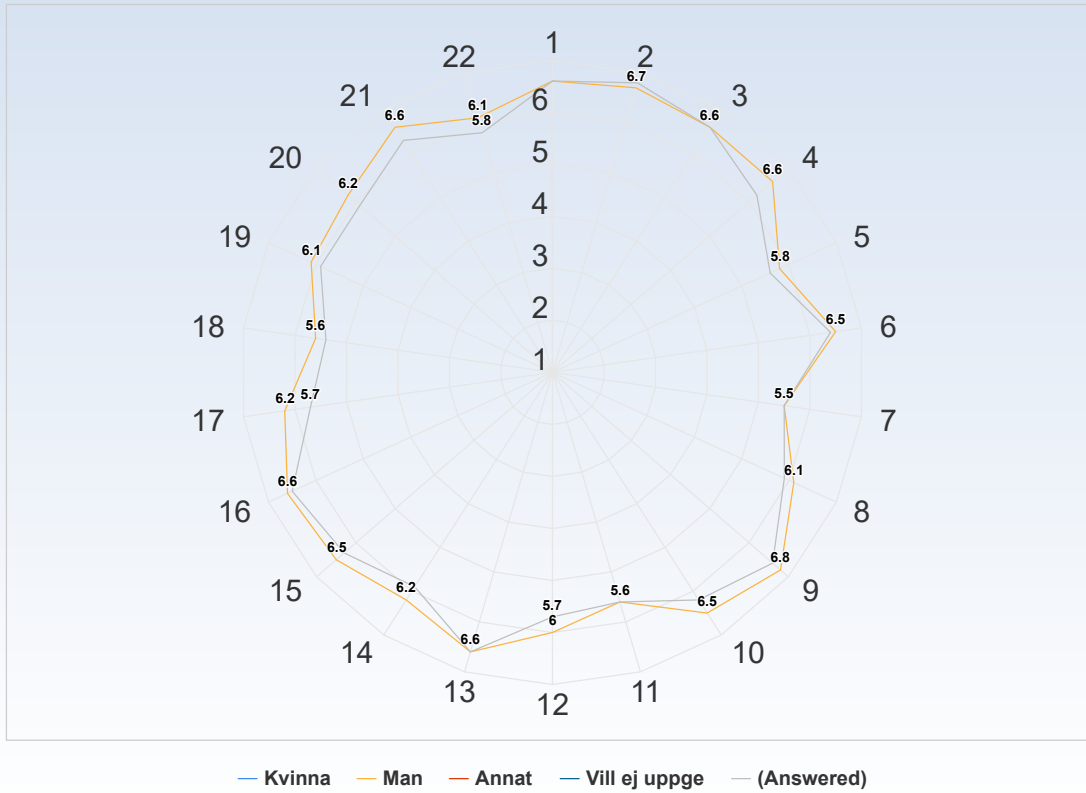
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

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

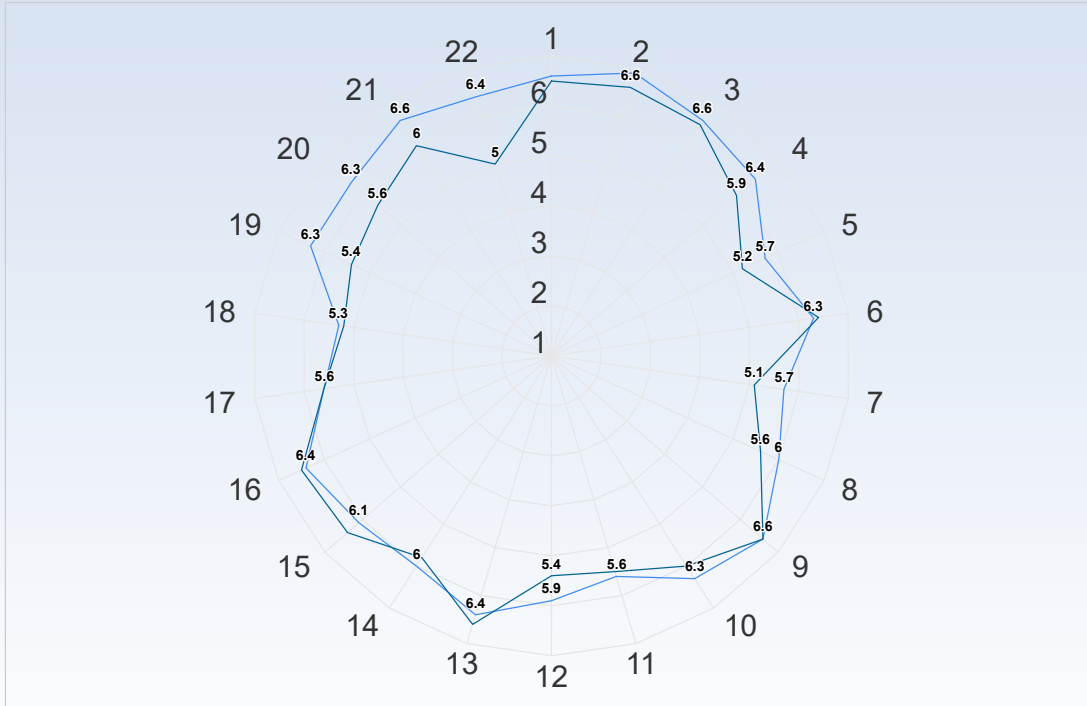


Comments

Comments (I am: Man)

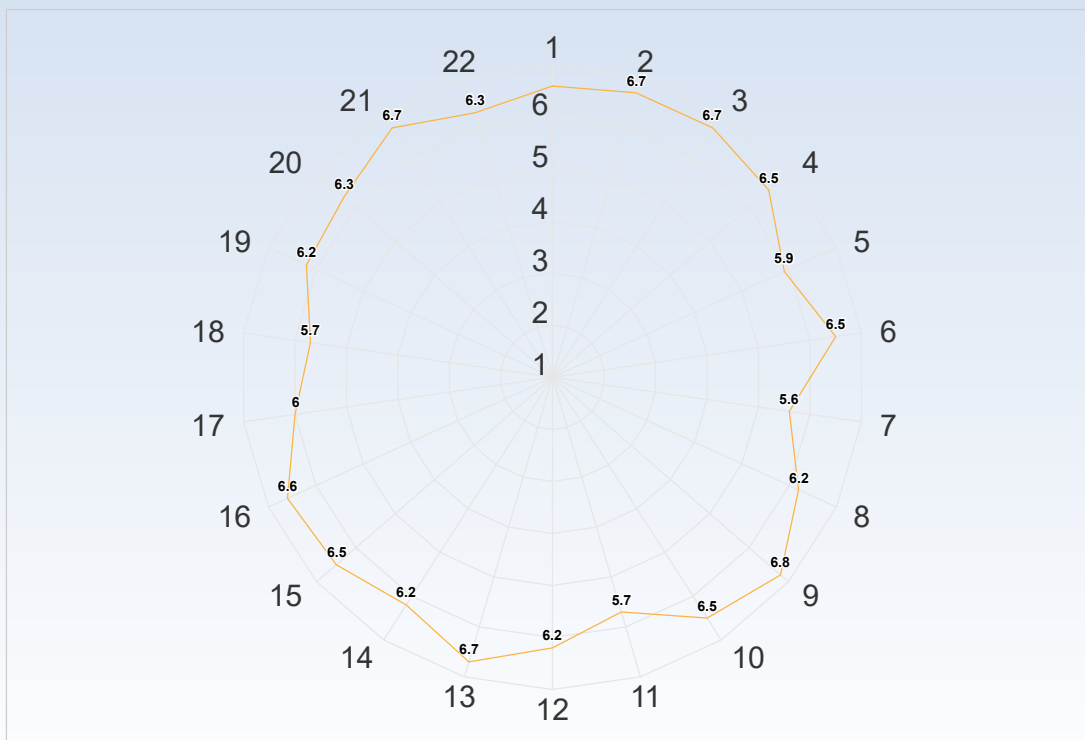
Most of the peer was male.

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

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: 9-11 timmar/vecka)

The fact that we were able to learn together with other students.

The ability to form your own solutions without any restrictions made it really fun

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

The projects themselves. I particularly enjoyed the first and third projects.

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

The team organization encouraged us to compete to get the best results while helping each other to find better solutions.

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

The projects' topics are very interesting.

Getting to experiment with whatever solution you believe in made it really fun

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

I enjoy projects and the research aspect, delving into academic papers

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

That the assignments were open, we could choose what solution to try

Learn from other teams. The presentation part was really helpful as it gives me hints where to improve.

The competitions and diversity of subjects.

Fun coding and doing bigger assignments

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

I liked the freedom we had to explore the projects with our own ideas. It was a bit unfortunate that for most projects it seemed that one approach outperformed all others.

Fun and difficult. I also think Petter had a great way of always connecting the assignments to actual problems.

It was a new way of working for me, with open-ended questions and fun sub-problems.

You learn by doing, which is really nice. I would say the best thing is being paired with someone as motivated as you are. It's when you learn more. I really liked the third assignment (reinforcement learning), since I got to try new tools that will be valuable for me. The visuals of the assignments were cool.

What would you suggest to improve?

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

The lectures have really important information about strategies one could use but this led to very similar solutions between all groups. It would be good if more techniques were proposed which might lead to a more diverse solution space.

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

The deployment of solutions and such for the competitions could probably use a bit more streamlining so that there isn't as much problems there, though I understand that can be difficult with how the projects themselves are currently set up.

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

Find a way to make sure both members of the team are active, it is not always for students to notify when their teammate is slacking.

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

Well, I think the time allocated for each project is too short, such that we may come up with some cool ideas, but stop there. The time limitation makes us end up with a simple approach. On the other hand, during the implementation, I think most of us were stuck by Unity instead of the approach itself (what to use, theory of the algorithm, etc). Maybe a very short assignment, 1, to familiarise oneself with Unity first, followed by 2-3 harder assignments with a longer duration. Would that be better?

Group assigning. I got unlucky with my first teammate (he was very kind though) and had to kind of climb my way out of the bottom ranks to get teammates who were better.

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

Less focus on the environment. Battlesnake is a great project. More time on that. Even if the Pac-Man was fun, it didn't allow for more complicated algorithms than rule based, at least not in the time frame. The PacMan was also heavy on issues.

I didn't feel like there was too much time to actually do MultiAgent algorithms.

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

Assignment 2 and 3 were unfortunately not as well run as could have been. I believe assignment 2 was both too difficult and too easy, too easy in that everyone chose the same solution (which was no fun) and too hard in that the workload was large. Assignment 3 felt very disorganised, and the constant changes to the project made it difficult to develop.

The difficulty level of different assignments were quite unbalanced. Assignment 2 was too hard.

Unity was great for the first two projects. However I feel like it created an unnecessary layer of complexity for pacman.

The most important be done with the code for the assignments before the student starts. NOT like what happened for assignment 3. Less presentations (still have them, but less). The code review were also very pointless in my opinion because all of us did not do it very carefully and thus it did not really give us anything and just wasted our time that we instead could have used to write the report

Create assignments were more communication and cooperation is needed. Assignment 2 was TERRIBLE in this sense. It was 2 completely different problems and the easiest way was just to split up the work. So I would HIGHLY recommend to create more of like an extended version of the traffic problem (I really liked this one!) but maybe a bit harder but remove the formation assignment. Maybe have the formation as assignment 3 or 4 but then instead have harder problems where other methods might be needed to be explored!

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

I hoped for more discussion in the sessions. I don't know how to stimulate that. One though would be to form smaller discussion groups where either people with the same or different approaches can discuss their progress. I felt many people didn't really bother to ask questions or even follow the presentations closely. I think there can be a lot of merit in discussing the solutions on a deeper level if this is possible.

Change the matchmaking system of lab-partners.

You could make the first assignment individual and very short, so that everyone needs to do something on their own. Sometimes a peer got "carried" and another peer who performed good was matched with that under-performing student.

Maybe let everyone choose their lab partner.

- The pace of the course is quite high, and I felt that sometimes, specially after assignment 2, people were a bit overwhelmed. It would be nice to structure the assignments in a way that the exam period is free (for example finishing assignment 2 after it, or writing the report during the exam week only). I would also try to avoid doing the tournaments on the weekend or very late on the evenings, specially with short notice.

- The crash-course on Unity was nice, but it would be more useful if it were during the first week, before presenting assignment 1.

Offer support to the students, the course felt copy pasted from previous years as many canvas pages were filled with outdated and invalid links. Some of the course files were fileld with errors and now all of a sudden our task is to fix that aswell.

Get another TA in the course and offer help sessions, as of now students are helping eachother but it just feels like the teacher is offloading his workload onto the students.

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

The workload of the second assignment should be different. I felt that this one was the one were I learned the less due to a high workload.

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)

Start working on the assignments immediately and communicate regularly with your partner

Get to know unity a bit before the course. People with no unity experience might struggle for the first assignment

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

Don't be afraid to try out solutions you think are interesting, but also be careful not to get tunnel vision with certain solutions and get locked into them.

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

Learn Unity!

Your solution doesn't have to be perfect, you can instead reflect on why it didn't work. Just put in the time and report how it went. Also keep good track of what day each meeting is because it's not always at the end of the week.

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

Get started straight away, don't spend all your time in the beginning reading literature, make sure you get a working MVP as soon as possible.

Keep good communication with your groupmate.

Start in good time, and try simple solutions that you are sure that you can implement.

Start the assignments on time and it will all work out!

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

It is vital to start early! Be active in the sessions, try to interact with as many people in the course as possible many have interesting approaches

Read literature and start early on the assignments. Also, put boundaries for yourself so you don't waste your whole life on the course :)

- Choose this subject next to a "calm" one, that doesn't require much group work.

- Work since day one for every assignment.

- Try to make your code clean and understandable, specially assignment 1 (you will reuse it for most of the assignments).

Do not take this course unless it is your dream to work with it, many mandatory meetings that dont give much and no help offered other than on canvas and google.

Is there anything else you would like to add?

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

No

Is there anything else you would like to add? (I worked: 24-26 timmar/vecka)

I really enjoyed this course, and I have to commend Mart for his work to help us!

The course overall is perfect, but I would except more lectures for more background knowledge instead of every team looking up for what they were interested in. Also, I cannot join the Discord channel, it was expired at the end of the semester and the new link wasn't shared.

Great course even though there are some problems and stuff that could be improved. Overall a great course which Uml very much enjoyed.

One of my favorite courses!

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

From the description of the course I expected a bit more Artificial intelligence in the sense of RL or other learning paradigms. I was a bit disappointed that for most assignments a A* approach seemed to work best. I was hoping for more insight into state of the art learning. In retrospective that is quite unrealistic to get that done in the short amount of time we had but maybe that could be a bit clearer in the description.

I also liked the fact that we worked with Unity, although to me the importance of getting the controls for the vehicles right was a bit too high, especially in the first assignments. I have not worked much with robotics and struggled a lot in figuring out the controls of the vehicles. It might be helpful to give a more comprehensive introduction to those topics.

- Even if it was the same type of assignment, it was really nice that you changed from cars/drones to pacman and snakes. The assignment felt different, and you could be more focused on the AI algorithm than in the PD Controller.

- Sometimes it was difficult to learn from the class presentations, since there were people that just mentioned the general stuff and not what made their algorithm better or different.

- Sometimes it is not "fair" to pair people being based on how fast the car went, but I guess it is difficult to measure the effort of people. In courses that are A-F people seem honest when they pair to do project work. However, I don't know if it is because the course is Pass/Fail or because of other reason, the motivation of the group members wasn't always the same.

- There were people that were extremely competitive (not being fair on the excel sheets about their tournament results, re-running the matches...) I think it would also have been nice to, in some assignment, try something without that much competition.

SPECIFIC QUESTIONS

RESPONSE DATA

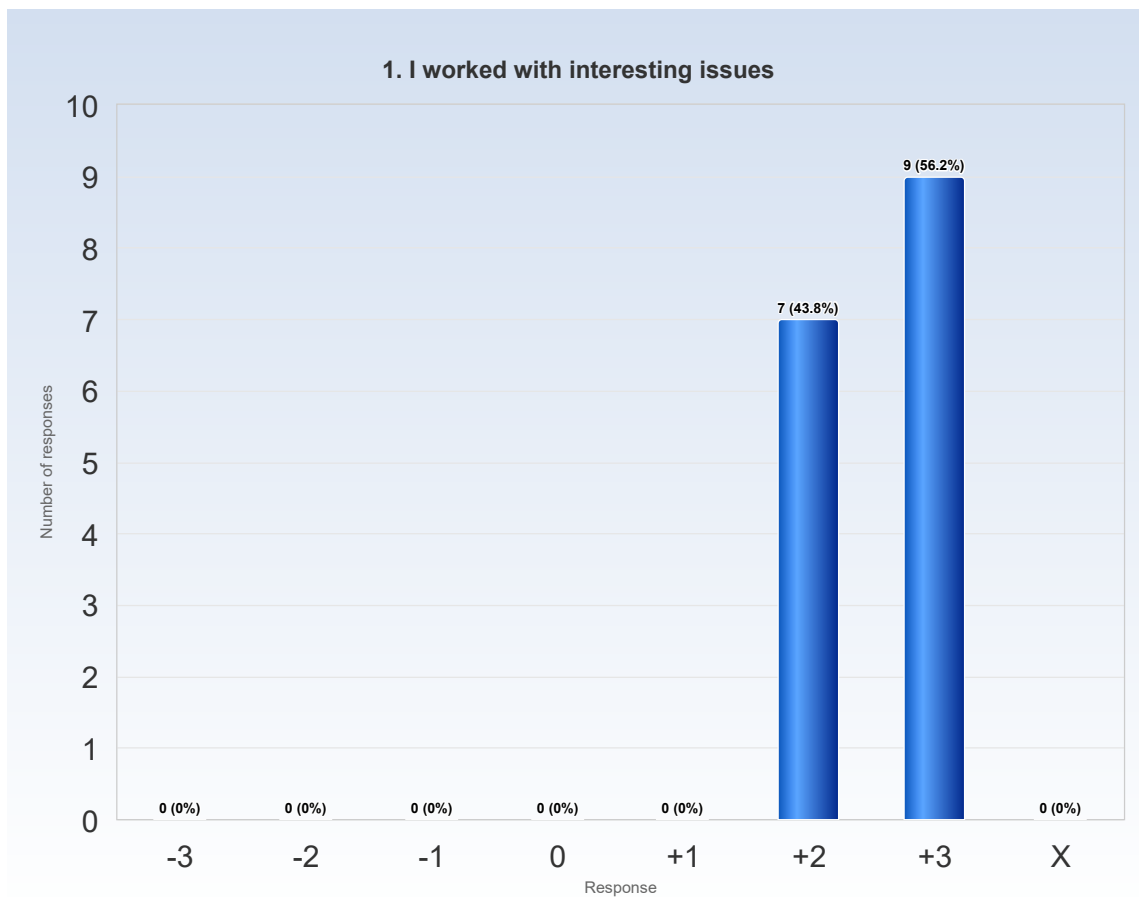
The diagrams below show the detailed response to the LEQ statements. The response scale is defined by:

-3 = No, I strongly disagree with the statement

0 = I am neutral to the statement

+3 = Yes, I strongly agree with the statement

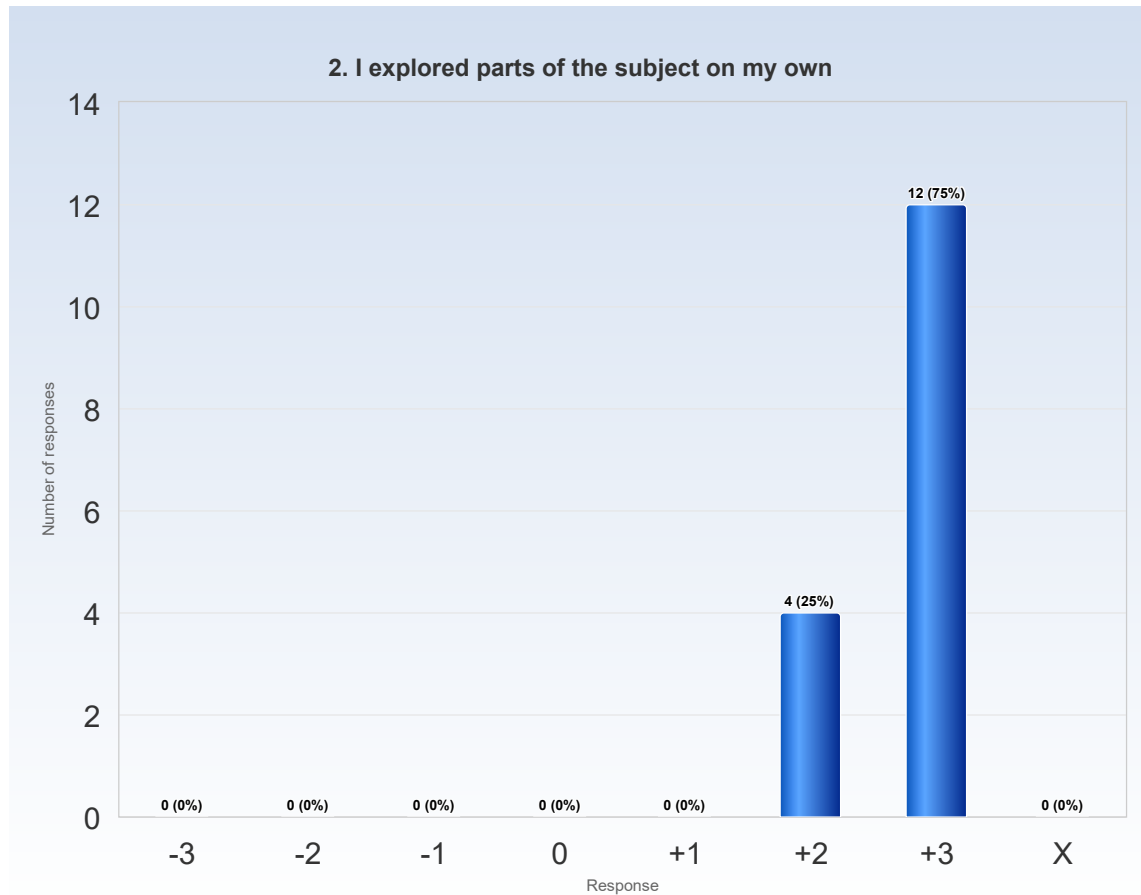
X = I decline to take a position on the statement



Comments

Comments (My response was: +2)

To a high degree, the problems were fun. I'd love to have less focus on the environment and use more time working on the AI. The projects didn't suit well for ML algorithms either, except for the battlesnake
the problems were interesting, but the solutions that we had time for were not as interesting.
Personally I liked assignment 1 and 2 more but this is very subjective.



Comments

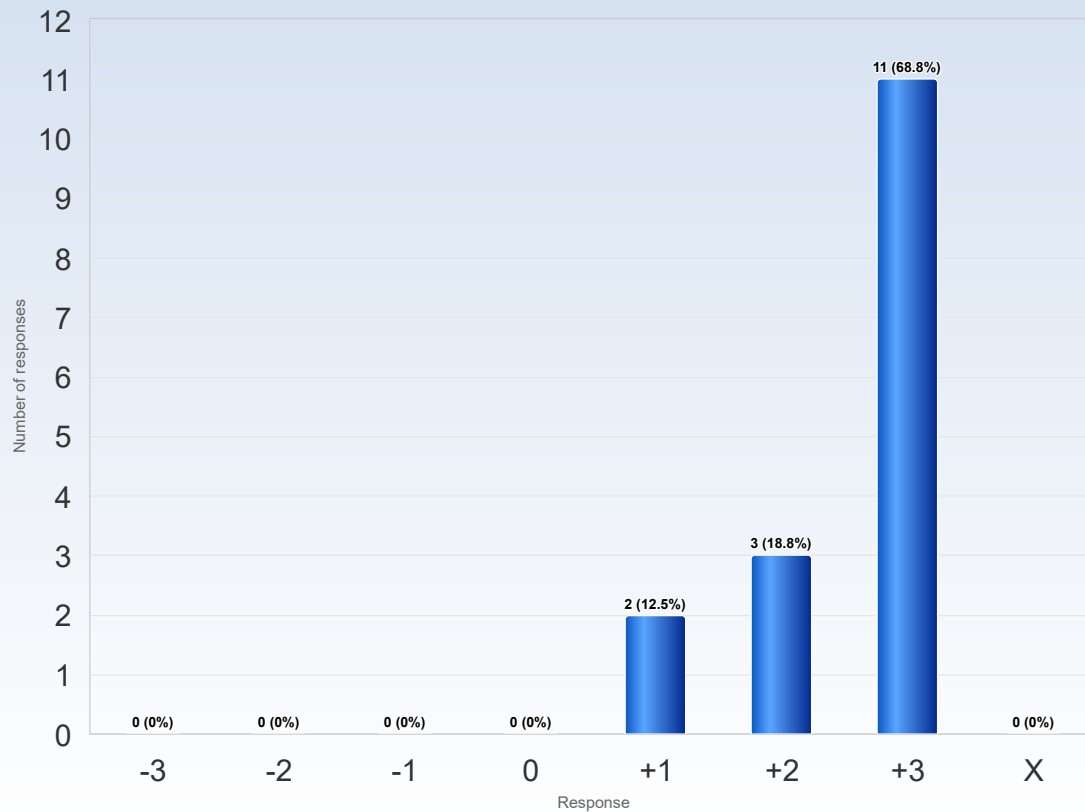
Comments (My response was: +2)

That's how the course is structured, doing research is a part of it

While developing and researching good AI solutions, I often ended up looking into and exploring various topics on my own.

Yes! However if in a time crunch and you need to start it is easier to just pick method(s) talked about during the lecture and thus not exploring other alternatives. But then we need to explore the method on our own so still exploring it alone

3. I was able to learn by trying out my own ideas



Comments

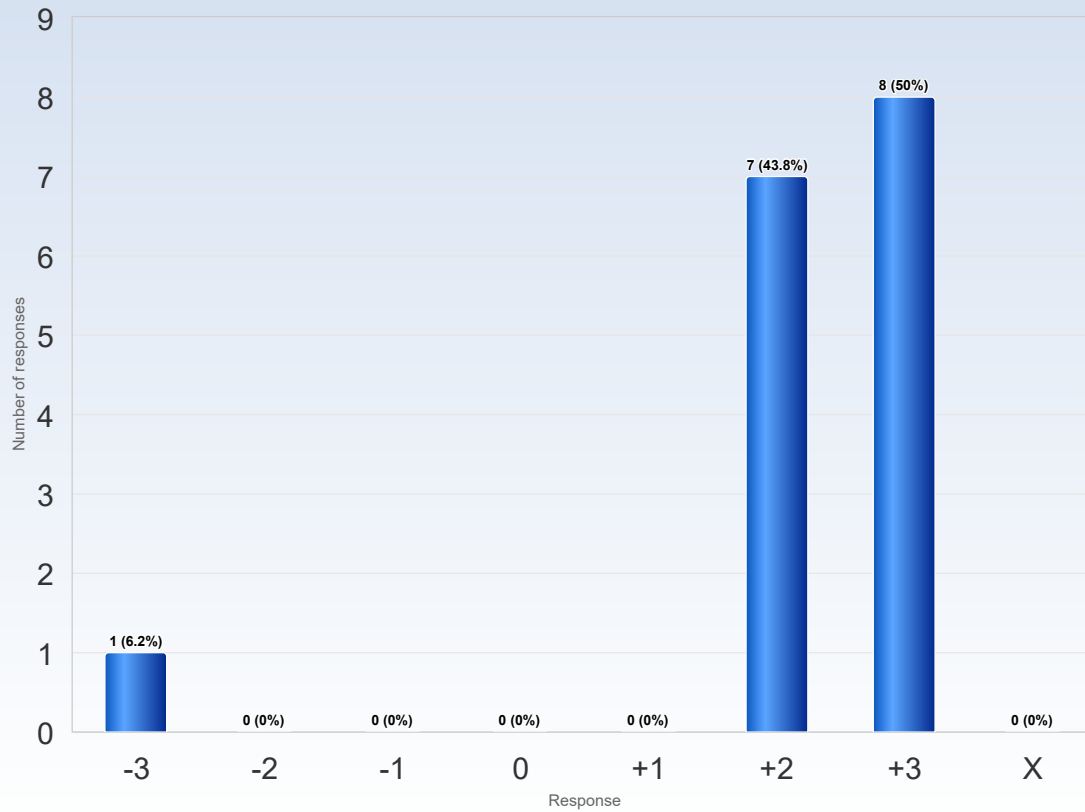
Comments (My response was: +3)

I loved that the course was very open to new ideas, even when they didn't necessarily work

This was really nice, you weren't forced to follow a given approach, which I think it makes you more "engaged" with the project

Yes! The fact that you could fail the assignment but still pass is a proof of this

4. The course was challenging in a stimulating way



Comments

Comments (My response was: +2)

Both yes and no. It was fun. But I wanted to learn more ML usage

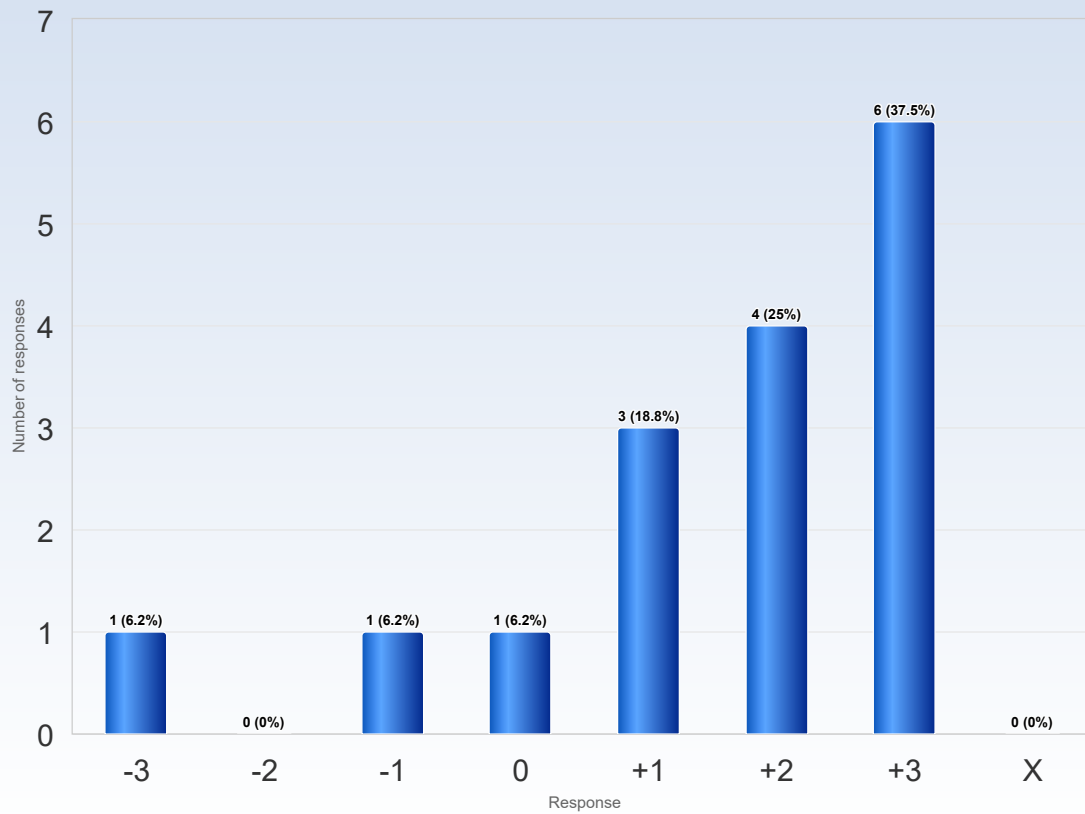
Yes I would say so. However some problems, mostly with assignment 3 where the change in the code and were the fact that everything were not done at the beginning of the assignment affected how I saw on the assignment. The big update created errors which made us need to debug and find it and spend time in that instead of the assignment itself. All of the changes made me very unmotivated (previously I loved the course and was very motivated)

Comments (My response was: +3)

Very challenging

It was not particularly challenging but it was fun and enjoyable

5. I felt togetherness with others on the course



Comments

Comments (My response was: +1)

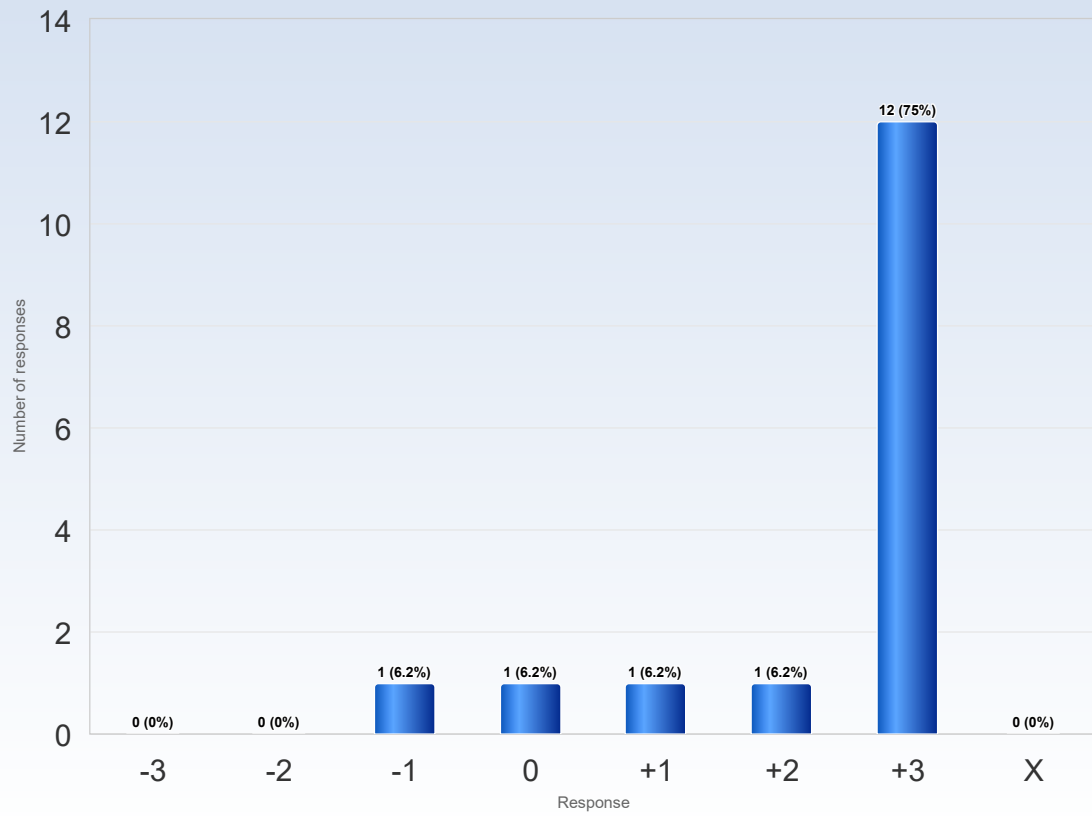
Only during the presentation. But the small group and the fact that most assignments were best to split up made it a course where you often worked alone

Comments (My response was: +3)

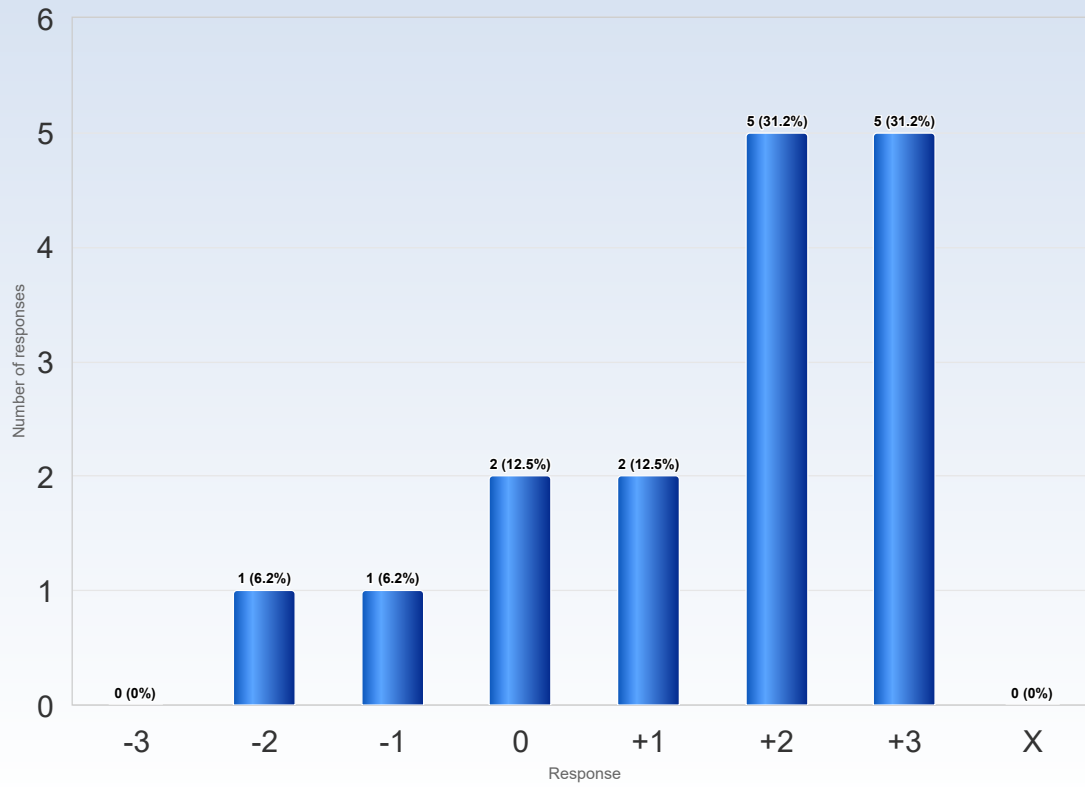
Switching people around was a good idea to let people meet others

It was nice to share ideas with others. I think a key point here was the Discord server (for assignment 3)

6. The atmosphere on the course was open and inclusive



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



Comments

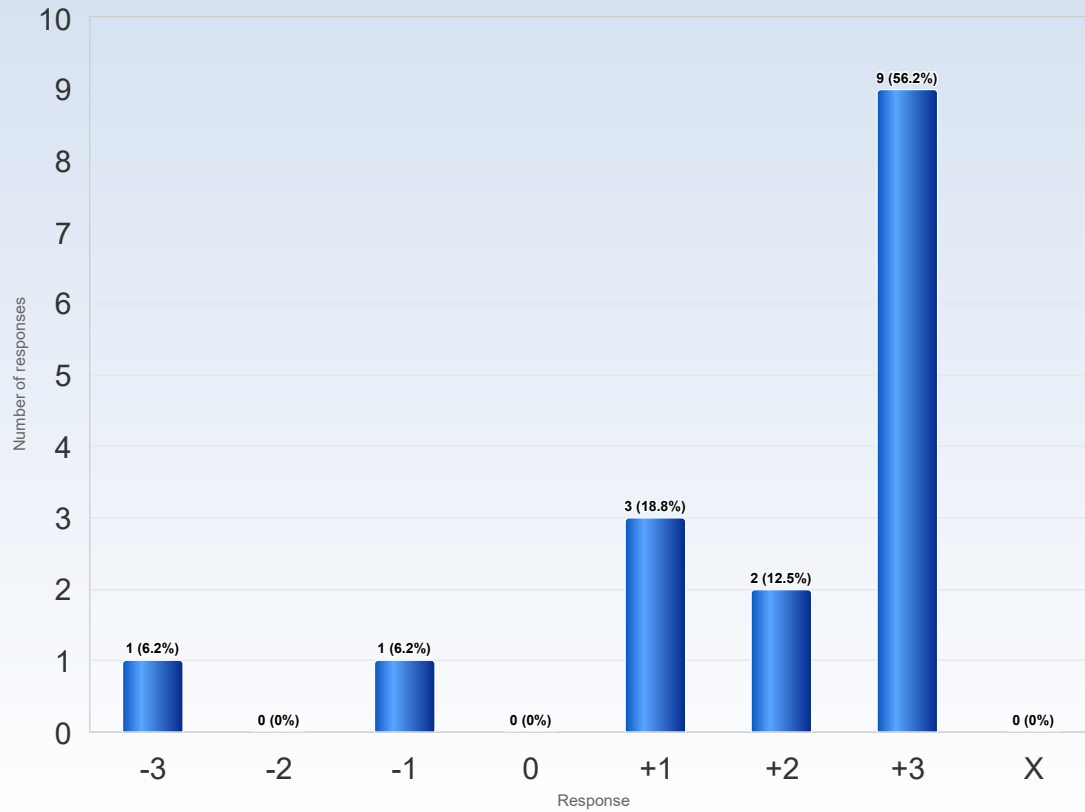
Comments (My response was: -2)

I don't know what the expected learning outcomes were

Comments (My response was: +2)

I learned alot of practical skills.

8. The course was organized in a way that supported my learning

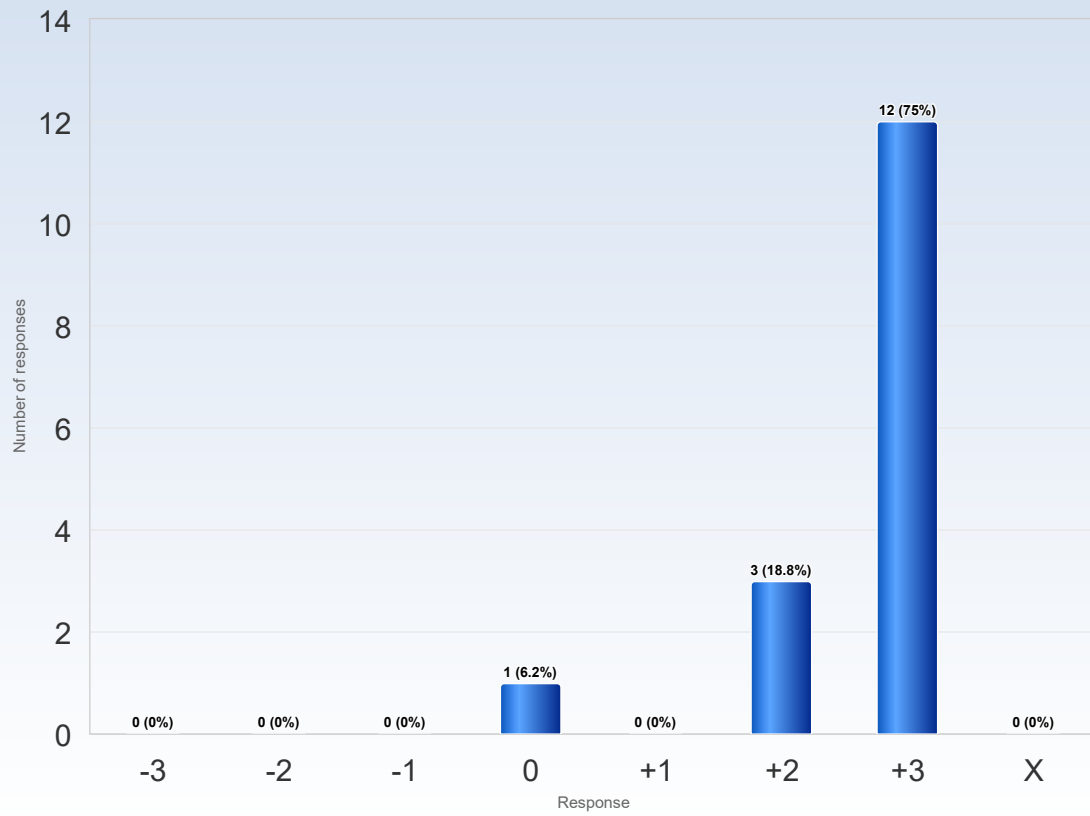


Comments

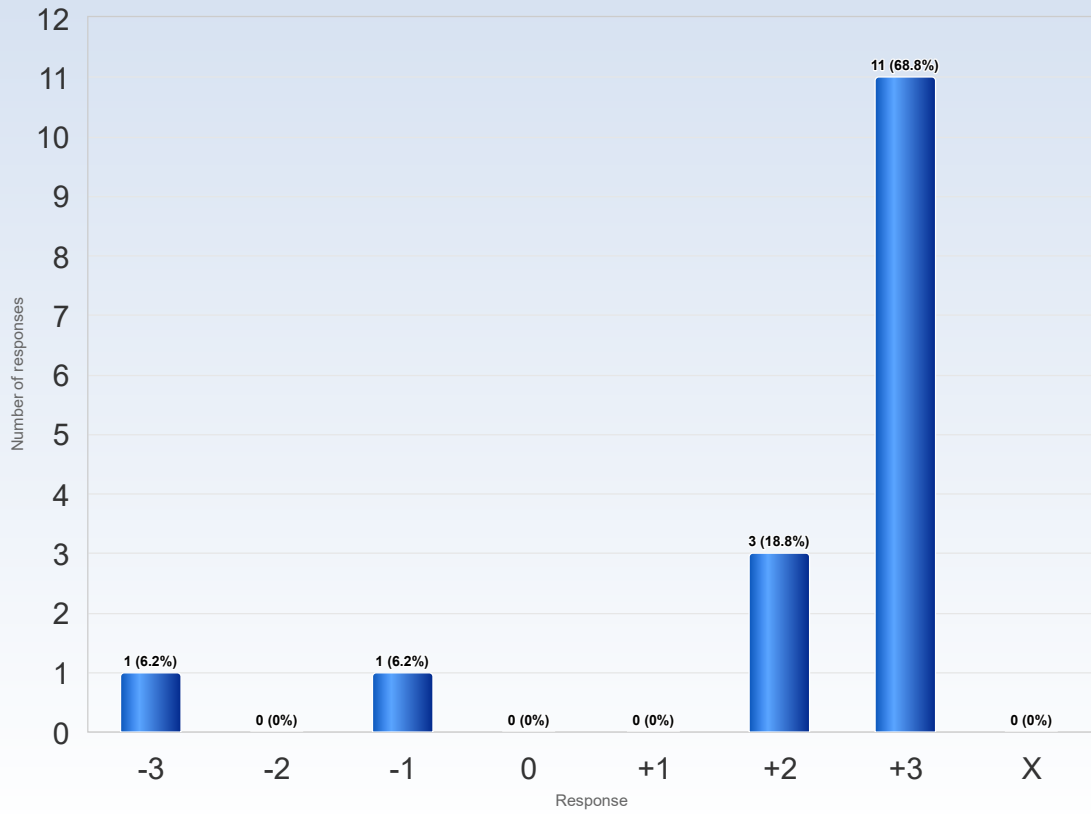
Comments (My response was: +3)

Yes code and getting hands on experience helps me A LOT!!!

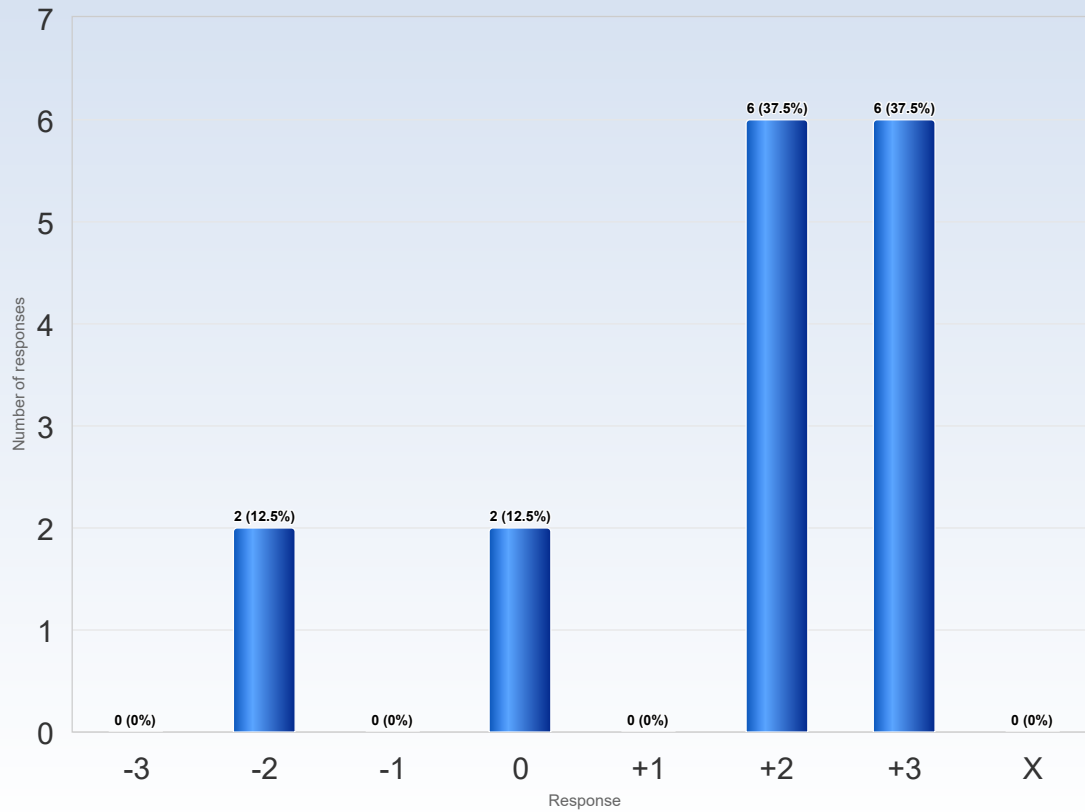
9. I understood what the teachers were talking about



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



11. Understanding of key concepts had high priority

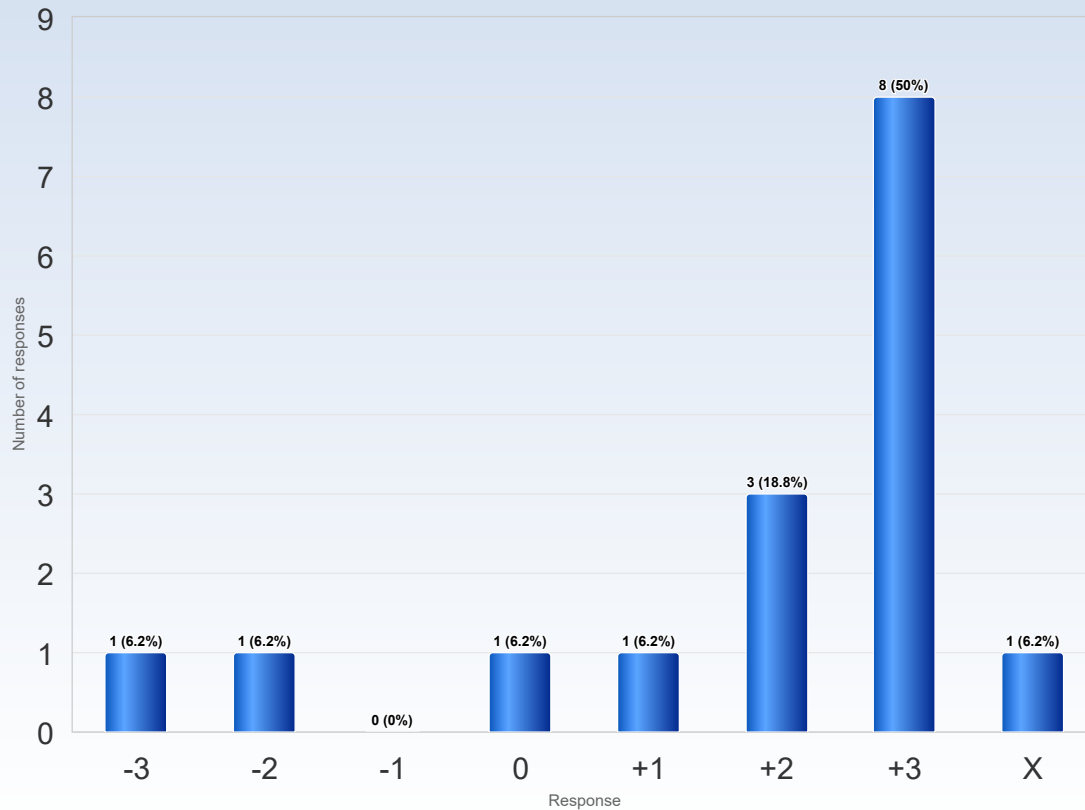


Comments

Comments (My response was: -2)

Often the most simple solutions worked the best.

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

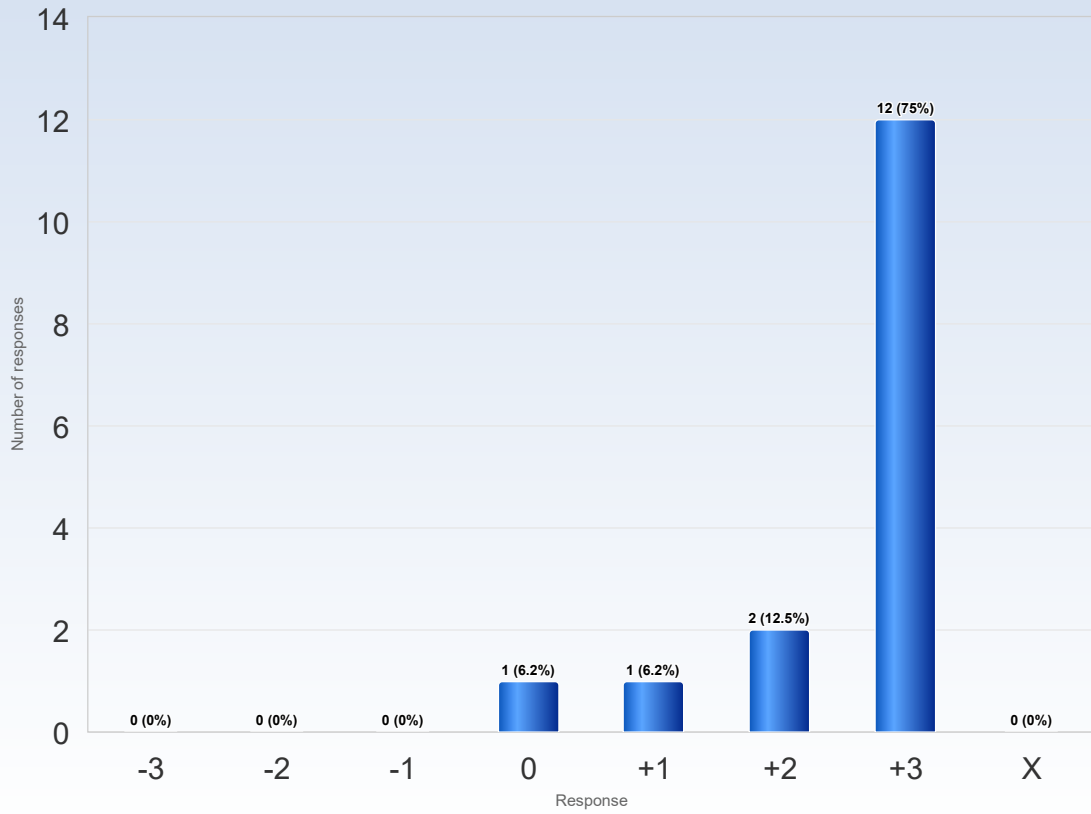


Comments

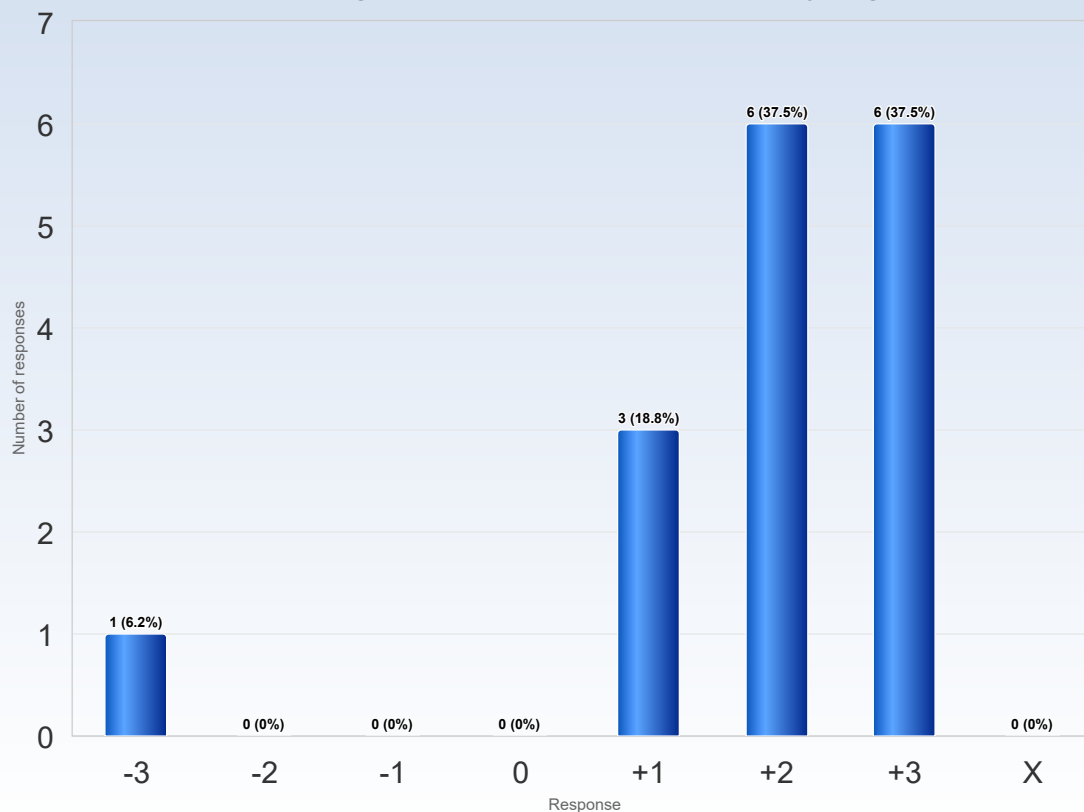
(My response was: 0)

I would say that the presentations sometimes helped me but sometimes the opposite. First of all I think there were too many presentation which was a waste of time. But then the presentation of the other could often affect the solution for us. If all other groups had different solutions it was possible that you started to question your own solution which might have helped but also might have prevent us from ccreating a fun and interesting solution. So I would say that the presentations are good but maybe not as many. One after like 1.5 weeks then the final one and MAYBE one in between

13. I understood what I was expected to learn in order to obtain a certain grade



14. I received regular feedback that helped me to see my progress



Comments

Comments (My response was: +1)

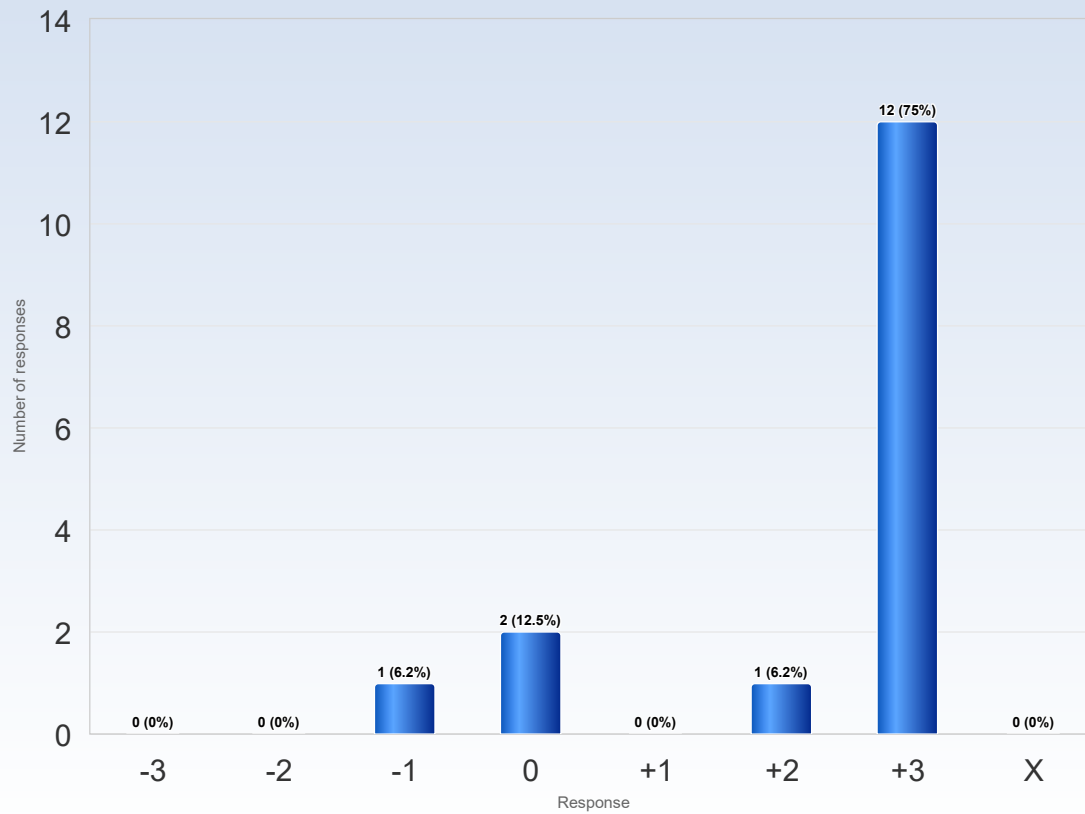
The presentations I guess but you did often not receive clear feedback, which I guess is intended as you would not like to affect our work if it might turn out to work better as expected.

Comments (My response was: +2)

Weekly meetings were mostly good, when there was a variance in solutions

The weekly sessions helped you reflect and you got some feedback from students. I noticed that in the first assignments people had more questions and talked more, but at the end sessions were more "passive", I think in those cases where there are not many questions, it is nice if the professors can give a bit of feedback.

15. I could practice and receive feedback without being graded



Comments

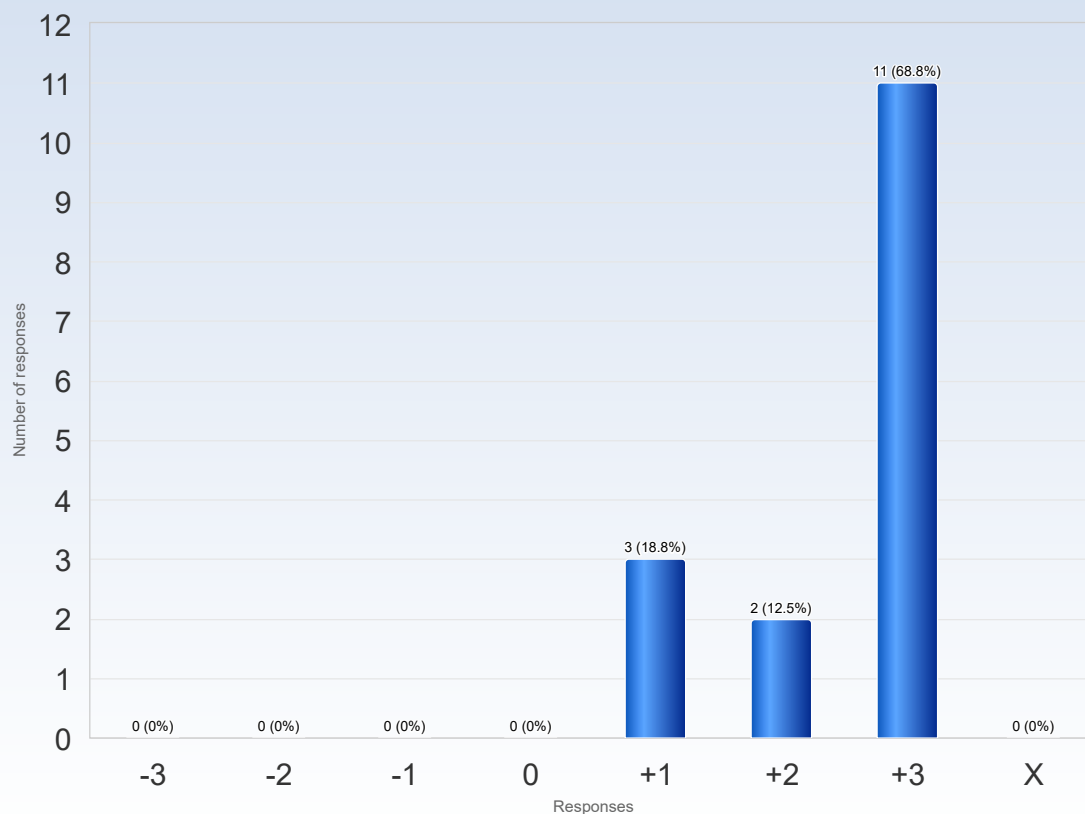
Comments (My response was: +2)

In the sense of writing code and testing it out but also exploring a topic and then present it.

Comments (My response was: +3)

We got feedback on the presentations and our approach several times before the projects were graded

16. The assessment on the course was fair and honest

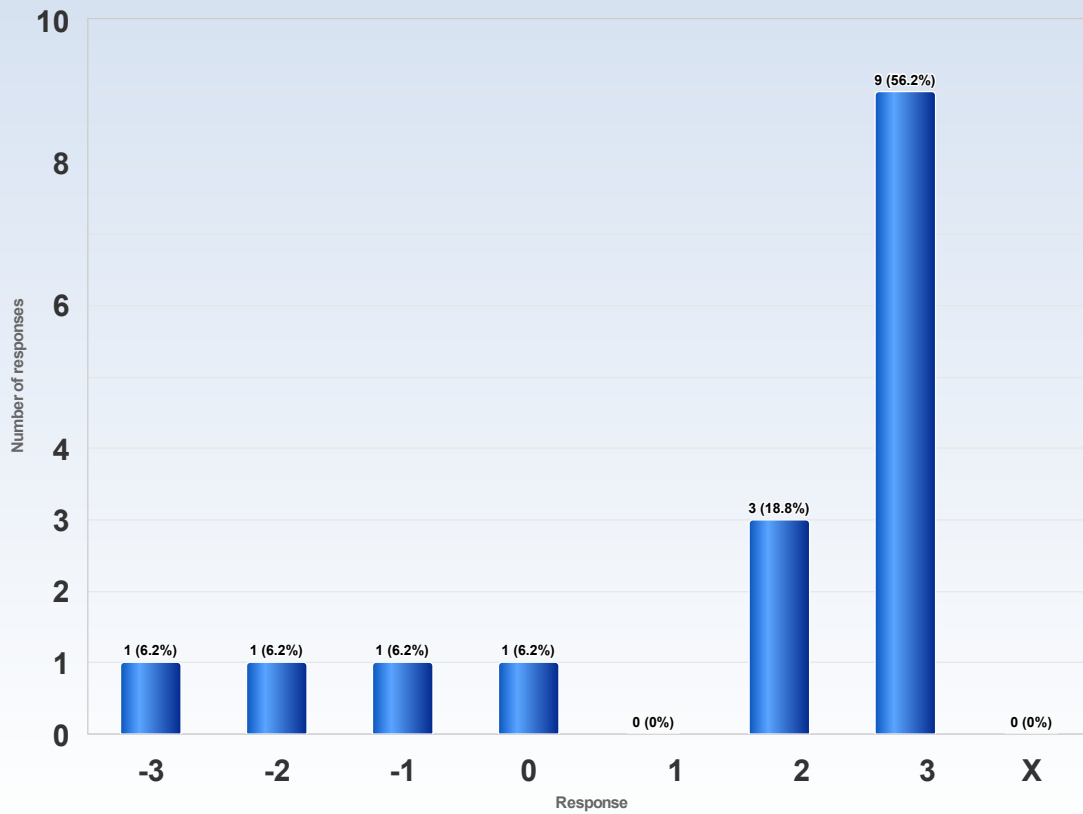


Comments

Comments (My response was: +1)

The unfair part was that if you made a not so good solution on one assignment, you were disadvantaged at the next since you probably get a worse lab-partner

17. My background knowledge was sufficient to follow the course



Comments

Comments (My response was: -2)

Sufficient in the sense that I'm able to add new things on top of it. But otherwise it was a lot of new stuff to learn

Comments (My response was: -1)

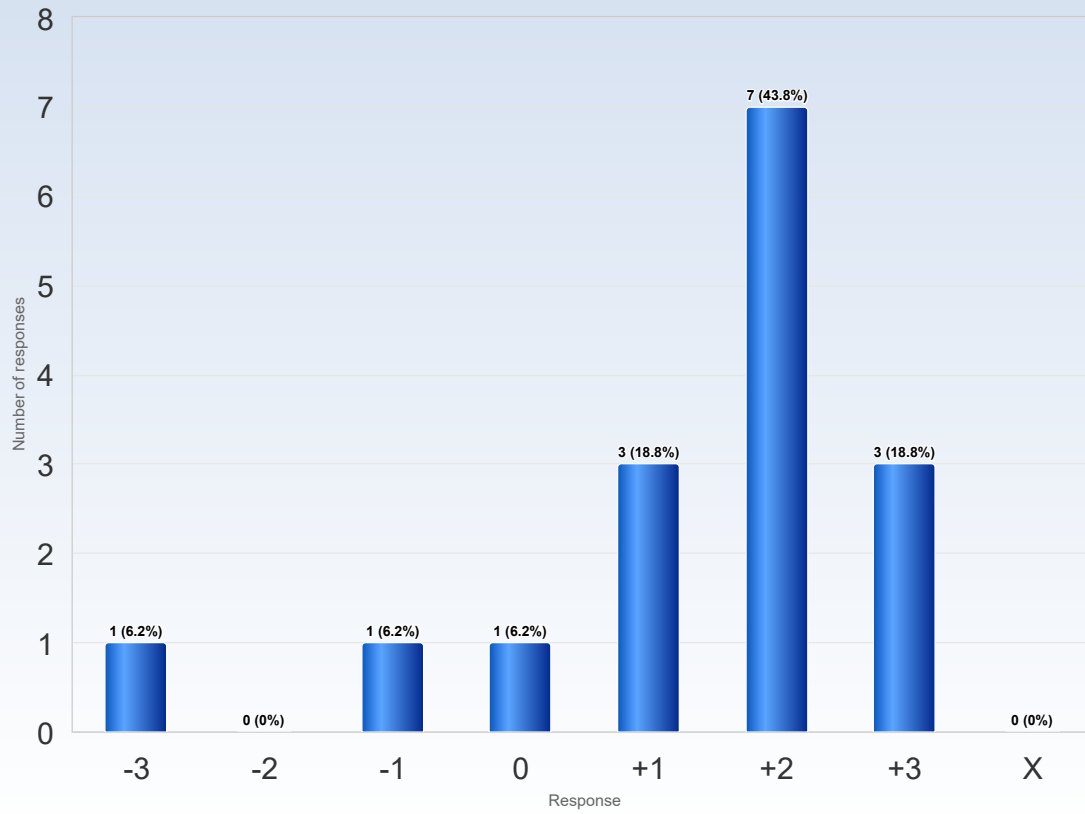
I hadn't coded big projects before, and I had to sprint at the beginning to not get behind and catch up.

Comments (My response was: +3)

I feel that many peers were unprepared

I already had experience with Unity so it made the start easy for me. Other's I believe we're not so lucky so I expect this number should be lower.

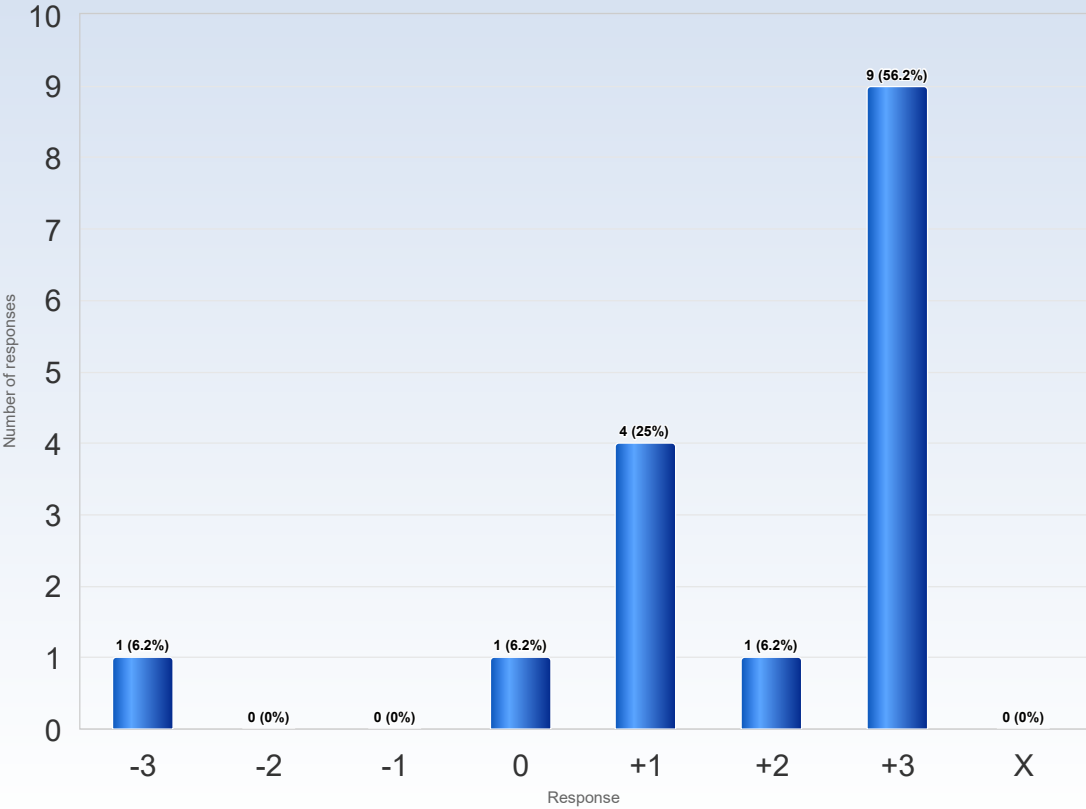
18. I regularly spent time to reflect on what I learned



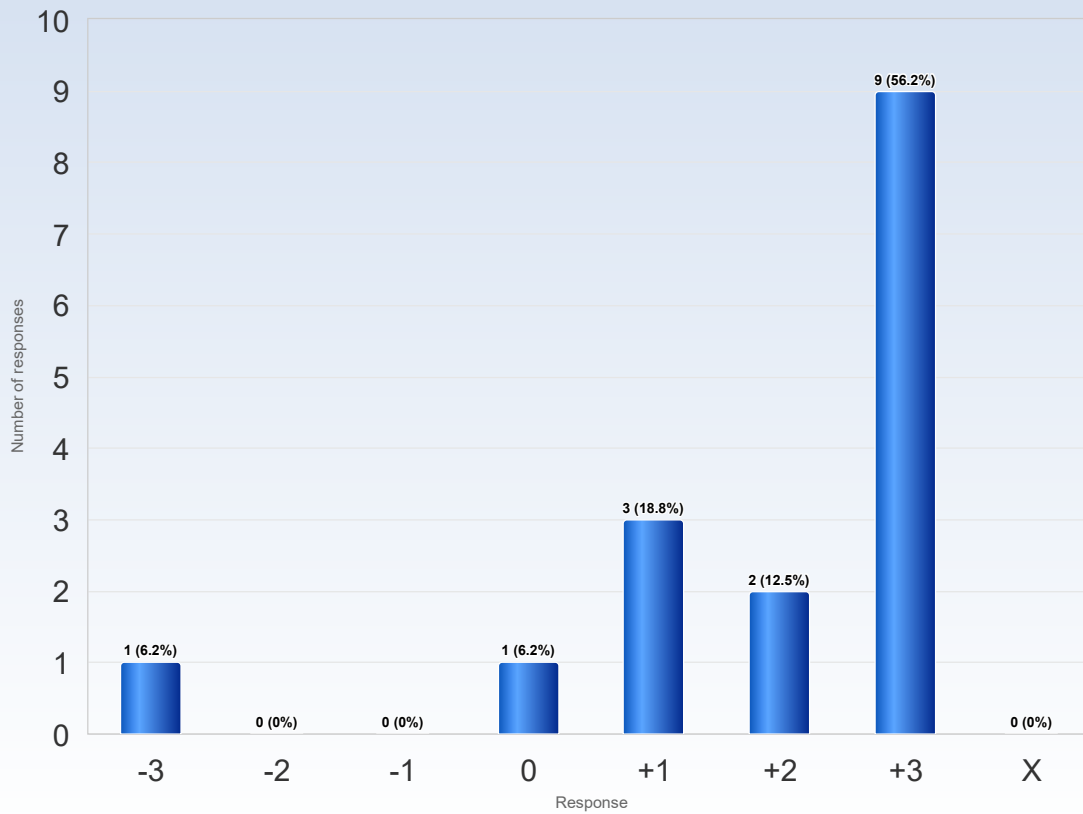
Comments

Comments (My response was: +2)
The presentations helped with this

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



20. I had opportunities to influence the course activities



Comments

Comments (My response was: +1)

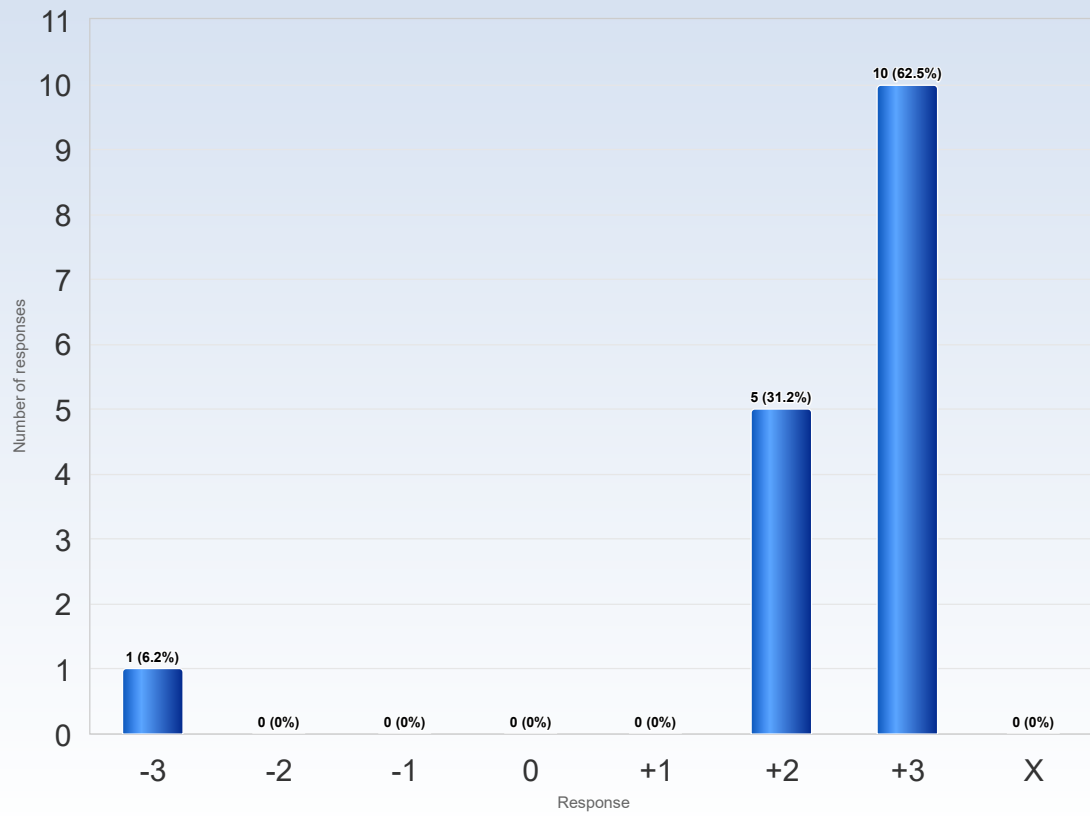
We had the possibility to direct some

The competitions for assignment 4 yes. Most of the other stuff no. Personally I liked it

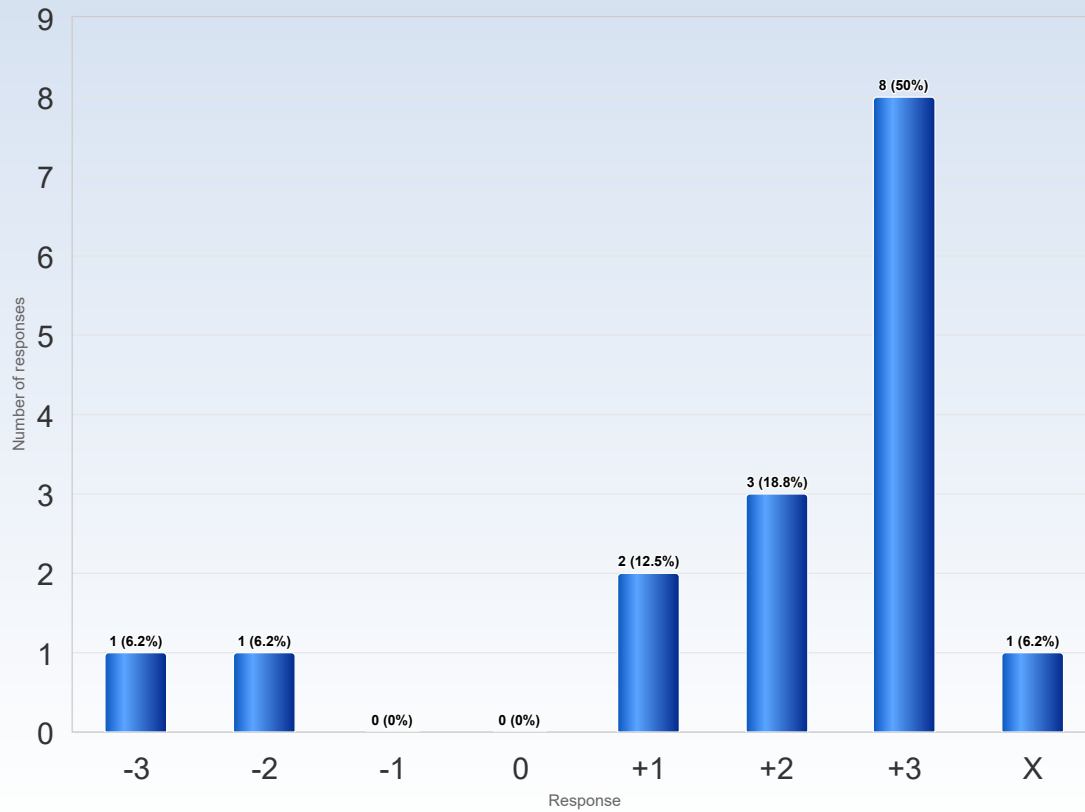
Comments (My response was: +2)

We were asked for specific meeting times and some leeway in assignments

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



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



Comments

Comments (My response was: -3)

no support offered?

Comments (My response was: -2)

Not really but I guess the point is for us to solve it and find resources online

Comments (My response was: +2)

Maybe some scheduled slots for questions and help would have been good

Comments (My response was: +3)

Mart is a king!

SPECIFIKA FRÅGOR

Vad tyckte du om Assignment 1 (Single agent in a maze)?

SPECIFIKA FRÅGOR

Vad tyckte du om Assignment 1 (Single agent in a maze)?

It was pretty basic, but it was perfect to get familiar with Unity and the course's organization (presentations, progress report, etc)

Interesting problem, simple enough to get used to Unity while important enough to reuse the solution in other assignments.

Having two vehicles did not seem necessary though since the drone is just a simpler model than the car.

I think it was a great start from a complexity point of view. As mentioned above I would have liked a bit more guidance on how to control the vehicles in a good way and what theoretical foundations for controllers exist. I am also unsure if the two different types of vehicles were necessary I didn't feel like I learned much from that.

Nice! However, it was pretty boring that A* was so good. We went with RRT and had to put down a lot of time to get a somewhat good solution.

Very great introduction, perhaps more focus should have been on helping students with Unity.

In my opinion, it truly makes a difference to make a good attempt at assignment 1, since it is the base for the others. In this assignment I would say that you spend a lot of time getting used to the Unity environment, specially if you have not used C# before. The classes are "big" and if you miss some of the functions that are already implemented, you can lose a lot of time doing something that is already done. It would be helpful to go a bit more deeper through the code in class, maybe in a separate session from the Unity crash-course.

A good starting with Unity and C#, also challenging in the sense of looking for the best route and steering.

Nice introduction but a lot of focus on the controller.

It was very fun and a good introduction to the course, I think.

Good introduction to the course. Could have spent less time on it to allow for more time on the more fun assignments.

Fun and not too hard

The workload was fair since in the first weeks we were to learn also about the unity environment. I would maybe avoid to assign the drone as well, since the things that I learnt were about planning algorithm and not about the different dynamics of the vehicles (car and drone).

Great introduction to the course!

Vad tyckte du om Assignment 2 (Many agents in a maze)?

Vad tyckte du om Assignment 2 (Many agents in a maze)?

This assignment was very interesting because it was the one that felt the most applicable to the real world. However, the fact that it was made up of two independent problems (traffic and formation) made it so that I didn't really work together with my partner and I haven't learned much about the other problem.

The traffic problem was interesting though improving it required a lot of "fine-tuning" regarding the vehicles or situations, which took time and do not afford to find a general solution.

The formation problem was a much simpler case of the traffic problem

In my opinion this was the most difficult assignment to do well. It was good that we had a lot of time for it. I liked the fact that we could work with existing algorithms such as VOs or ORCA. I think that was a well rounded assignment that offered deep insight into this topic.

Fun and challenging! My lab partner did not do anything but I got pretty good results by myself. Would have wanted some more weeks on this assignment. It felt like no solution was that fun.

The split in the assignment made it difficult to pair up, as one student worked on one part while another worked on the other without need for communication. Also the solution space was stale, as almost everyone did the same thing.

It was hard and really big. Due to the lack of time, almost everyone used the same algorithm for the car and the drone, making some tweaks to the PD controllers of assignment 1. I liked the part of formation, but maybe it could be oriented at something different than racing (like a drone choreography where they still need to be coordinated and avoid crushing, but where it's more important to look good than the time). Apart, having that many agents can be computationally expensive, specially with all the graphics. Sometimes my computer lagged incredibly running the traffic problem, which made it really difficult to debug.

There wasn't a lot of relation between the 2 sub-assignments (traffic and formation), I think it would be better to divide it in two different tasks so that both members on the team focus on the same thing since the very beginning. If you split the task at the beginning, it is difficult to intervene and catch up with the thinking process and implementation of your partner. I feel communication is really important in this subject, but some people don't realise, or prefer to go solo, which makes it a bit inconvenient for the partner.

Traffic car was too difficult. Formation problems were good.

It was fun with velocity obstacles.

While interesting, I unfortunately think assignment 2 had too much in it all at once and was structured in a way that encouraged partners so split the workload unevenly.

Good introduction to collision avoidance

Too hard, would've been enough without the formation problem or the other way around.

It was too heavy. I would assign only the multi car, without drones and the race in the gates. It would have been interested to reflect only on cool ways to solve problem about the cars on the same map.

Traffic problem great but would recommend as previously mentioned to remove the traffic problem in order to get more of a cooperation. Make the traffic problem a bit harder and then have both people work on this.

Vad tyckte du om Assignment 3 (Pacman Capture the Flag)?

Vad tyckte du om Assignment 3 (Pacman Capture the Flag)?

This was definitely the most fun to work on, despite the many bugs and problems that we encountered. However, the fact that we implemented a rule-based solution (a bunch of if-else) made it feel like a classical software engineer problem more than a multi-agent one.

Though the problem was really fun, the time constraints were a bit annoying, especially regarding some bugs and errors in the beginning.

I really liked this assignment. I think it allowed for many different strategies and therefore was more open than the first two which was good as a third assignment. As we already discussed in the Course the environment was a bit annoying to deal with and the tournament was very tedious. In my opinion there was no benefit from using Unity for this assignment. I think using the 2D pacman version maybe with incomplete observability would have opened even more possibilities for interesting solutions. It would have definitely simplified the handling of the environment.

Obviously the competition was stressful and difficult to work with.

I could not play other teams until Thursday before the competition which were on Sunday...

I think the game was far too difficult with a continuous state space.

The continuous changes in the branch made it difficult to work on. Also working on a server-client made it unnecessarily awkward.

It was fun and different. However, the server setup wasn't very comfortable. It would be nice if you could test your code in the same place where the tournament will be run, because if not you have to fix things for both host mode, and client mode. It is very difficult to debug in client mode. Maybe if it was set like a turn-taking game (like the one in DD2380) it would be easier or quicker to run the tournaments.

Interesting, but hard to begin with as the previous two problems were all about cars, and suddenly there comes the Pacman??

It was fun but with a lot of issues and difficulties using anything else than rule based approaches. I'd suggest to have a big realistic solution space, that doesn't only involve adding new rules. It was also tedious to play the tournaments

A very interesting assignment.

Interesting game where we could apply strategies from both previous assignments

Very fun! A lot of bugs that made it hard but they were gradually fixed and as it turned out at the end is pretty good in my opinion. Would be nice if running the tournaments was easier but it worked.

It was cool and fair workload. I would not modify it. Maybe I would find another way to test the algorithm because we had a lot of issues regarding the servers.

Chaotic! Should have been done before we start! Otherwise I think it had the potential to be good. But personally I am more interested in the type of problems in assignment 1 and 2. But I can see a lot of people enjoying this assignment if done before we start

Vad tyckte du om Assignment 4 (BattleSnakes/BattleCode/Revisit1-3)?

Vad tyckte du om Assignment 4 (BattleSnakes/BattleCode/Revisit1-3)?

(BattleSnake) The workload of this problem was adequate for the amount of time we had available to complete it. However, I didn't learn anything new about multi-agent algorithms.

The battle snake was also fun, but the time constraints were once again a bit short. Especially concerning the end of the year, a whole new problem, and other courses

It was unfortunate that we had so little time for this assignment. I liked it for similar reasons as the 3rd one. Again the hosting of the games was a bit suboptimal but I can't really think of a better solution other than a script running all the games over night to ensure that no games run in parallel (for battle snakes). I didn't revisit one of the old assignments but it seemed a bit unnecessary given that we didn't talk about it in the sessions at all. I would have been a bit disappointed I think if I received so little recognition for what I did.

The most satisfying assignment. Free choice of lab partner and the more difficult strategies actually paid off to do.

Battlesnakes was a lot of fun and a fantastic way to finish the course, more time on this assignment would be great.

There was very little time for it. I feel that I missed the time of testing and improving this project. It was difficult to find snakes to play against that weren't bots, then, it was more like implementing the algorithm you believed it was okay, fixing bugs and crossing fingers. I guess that if we have had one more week, we would have been able to improve more our algorithms.

Battle Snake was interesting, but the preparation time was insufficient.

Battlesnake was great. More time on this. The environment is simple to use. With a big solution space. I'd probably put this as early as the second assignment.

A good assignment to end on, especially when we didn't have as much time for it as with the rest.

This assignment could have been given more time to allow people to create better solutions.

Battlesnake was really fun but it would be kind of nice if there could be a simple tutorial on how to use it with C# since we'd been using that during the rest of the course.

I think the workload was perfect.

Battle snake pretty good but the tight timeplan affected what was possible to do and thus many opted for just simple approaches (and close to summer vacation)