

Report - ID1019 - 2023-04-17

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

Please note that there is only one respondent to this form: the person that performs the course analysis.

Course analysis carried out by (name, e-mail):

Johan Montelius

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.

Studenterna har inte valt några kursrepresentanter så de synpunkter som studenter har haft har givit direkt till mig under och efter föreläsningar. Jag har samla inte in någon information om vilken könstillhörighet studenterna har så dess aspekter har lämnats därhän. Studenter som är funktionsutmanade har fått sedvanlig hjälp antingen direkt eller via FUNKKA.

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.)

Informella diskussioner efter föreläsningar.

COURSE DESIGN

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

Kursupplägget var som förra året men en revidering av uppgifterna gjordes innan kursen.

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?

Av kursenkäten (svarsfrekvens 10%) var arbetsfördelningen vad man kan önska sig för en kurs på halvfart.

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?

En hög del som klarar kursen och jag tror att den är högre än förra året. Studenterna kan ha varit bättre förberedda på kursen upplägg då de tagit ID1021 under hösten som nu har ett liknande upplägg.

STUDENTS' ANSWERS TO OPEN QUESTIONS

What does students say in response to the open questions?

Kursenkäten bifogas.

SUMMARY OF STUDENTS' OPINIONS

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

Kursen uppskattas av studenterna även om den i vissa avseenden är krävande med många deadlines.

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.

Det saknas tid till att ge individuell feedback på programmeringen och de skriftliga rapporterna. Få studenter kommer till föreläsningarna och det bör ses över hur dessa ligger i schemat i förhållandet till uppgifterna.

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?

Det finns naturligtvis en stor spridning som jag tror främst beror på programmeringsvana.

PRIORITIZED COURSE DEVELOPMENT

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

Kursen bör delas upp i två olika kurser. En som hanterar funktionell programmering enbart och en kurs som tar upp flertrådad programmering.

ID1019 - 2023-03-31

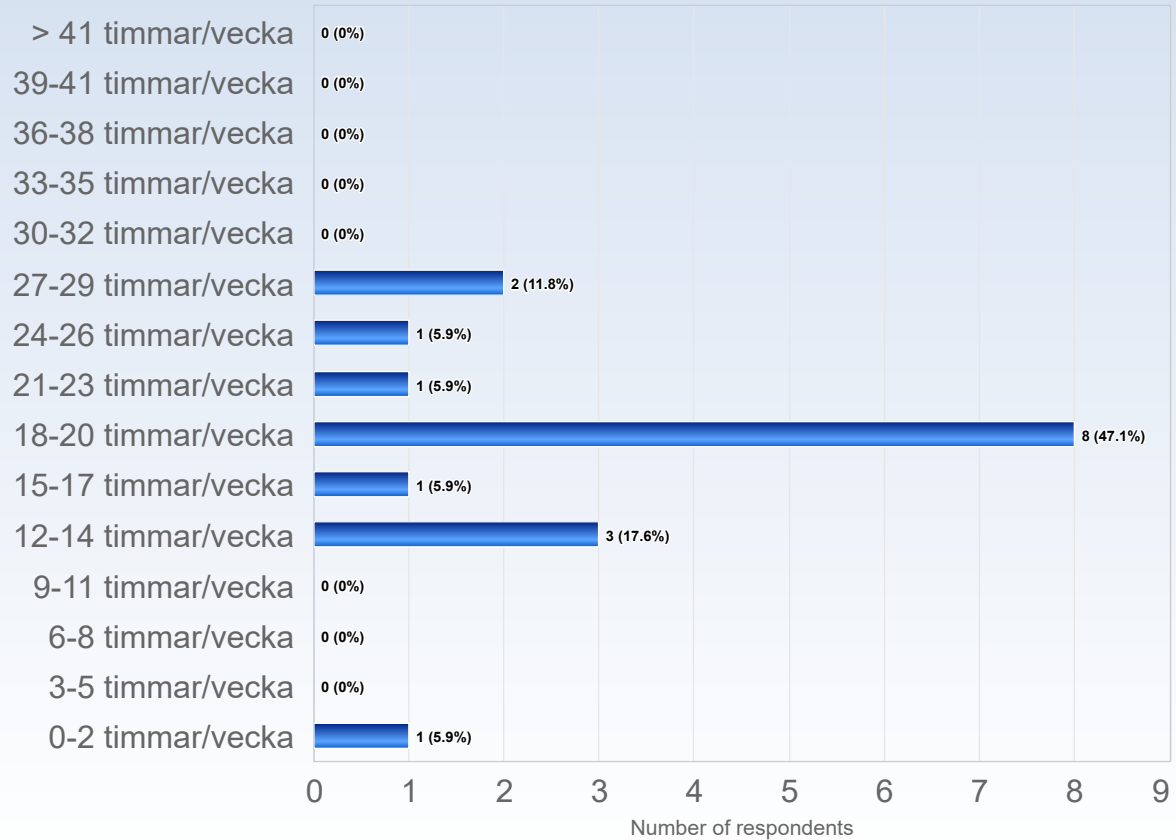
Antal respondenter: 160

Antal svar: 17

Svarsfrekvens: 10,63 %

ESTIMATED WORKLOAD

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



Comments

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

Det här var en tuff period. Jag hade 4 kurser samtidigt vilket gjorde så att det näst intill var omöjligt att jobba med kursen 20 timmar/vecka. Very good in terms of challenging students. It also has great ability to teach students in a way where instead of preparing for just one final exam it perpetually reminds students about studied topics.

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

Reasonable workload

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

For the most part, I did not go to lectures and just followed video lectures on course pages. Deadlines were rough and hard to meet especially when also attempting the higher grade exercises, but the grading was pretty lenient (extensions were given when a honest attempt had been made) so it wasn't too bad.

Rimlig arbetsbelastning om man gjorde högrebetygsuppgifterna.

The assignments were nicely thought through and provided much knowledge. Some required more time and others less, but in the end it evened out to a 20h workload per week

In my case, this was enough for passing the course. I wished I had more time to invest and therefore learned more.

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

Was quite intensive in the beginning before getting used to Elixir and the structure of the assignments. So probably closer to 30h first 2-3 weeks and then less and less towards the end.

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

Some weeks were quite challenging which made the work hours a little long

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

Var tidskrävande att tolka uppgifterna då det ofta var ganska oklart vad som förväntades av en.

LEARNING EXPERIENCE

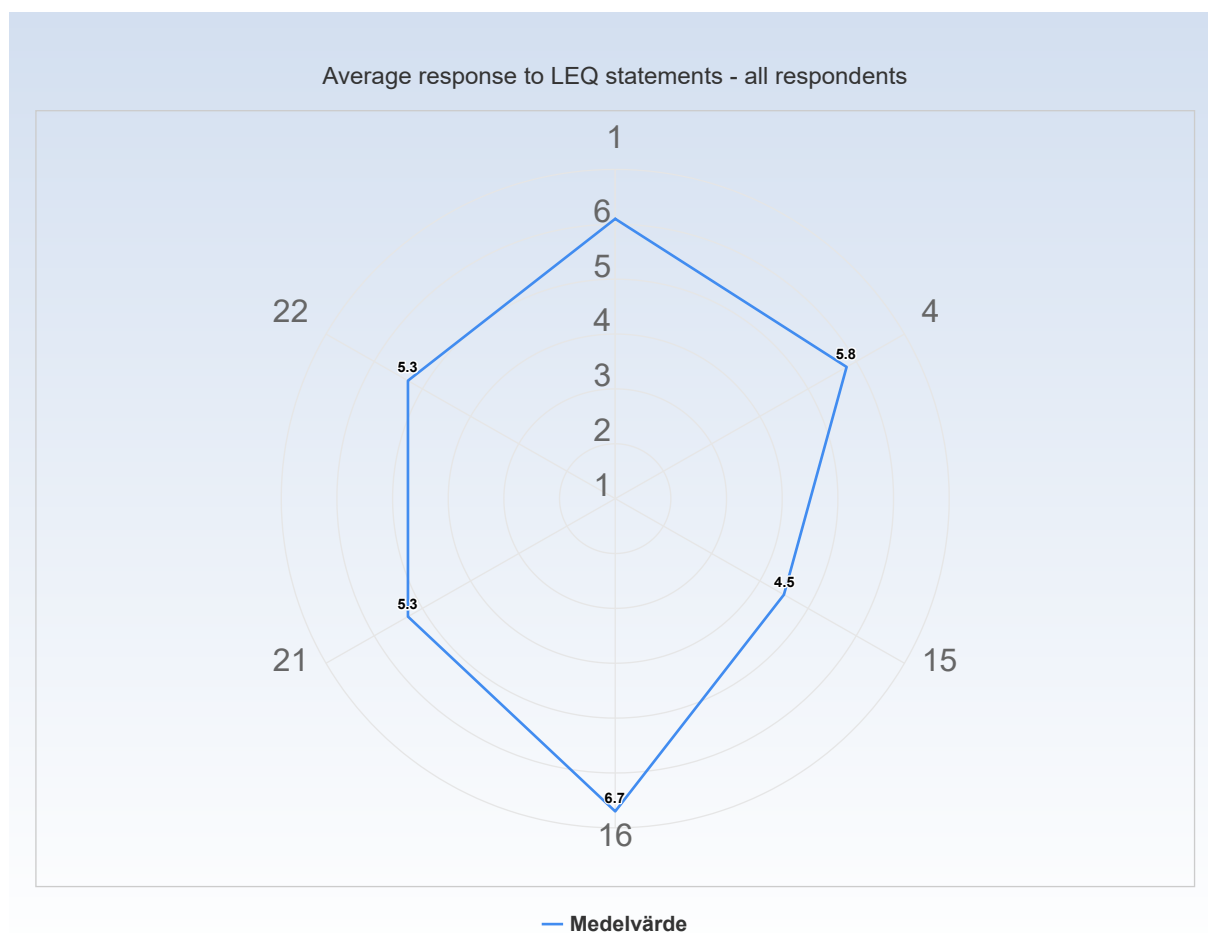
The polar diagrams below show the average response to the LEQ statements for different groups of respondents (only valid responses are included). The scale that is used in the diagrams is defined by:

1 = No, I strongly disagree with the statement

4 = I am neutral to the statement

7 = Yes, I strongly agree with the statement

Note! A group has to include at least 3 respondents in order to appear in a diagram.



KTH Learning Experience Questionnaire v3.1.4

Meaningfulness - emotional level

Stimulating tasks

1. I worked with interesting issues (a)

Exploration and own experience

2. I explored parts of the subject on my own (a)
3. I was able to learn by trying out my own ideas (b)

Challenge

4. The course was challenging in a stimulating way (c)

Belonging

5. I felt togetherness with others on the course (d)
6. The atmosphere on the course was open and inclusive (d)

Comprehensibility - cognitive level

Clear goals and organization

7. The intended learning outcomes helped me to understand what I was expected to achieve (e)
8. The course was organized in a way that supported my learning (e)

Understanding of subject matter

- 9. I understood what the teachers were talking about (f)
- 10. I was able to learn from concrete examples that I could relate to (g)
- 11. Understanding of key concepts had high priority (h)

Constructive alignment

- 12. The course activities helped me to achieve the intended learning outcomes efficiently (i)
- 13. I understood what I was expected to learn in order to obtain a certain grade (i)

Feedback and security

- 14. I received regular feedback that helped me to see my progress (j)
- 15. I could practice and receive feedback without being graded (j)
- 16. The assessment on the course was fair and honest (k)

Manageability - instrumental level

Sufficient background knowledge

- 17. My background knowledge was sufficient to follow the course (f)

Time to reflect

- 18. I regularly spent time to reflect on what I learned (l)

Variation and participation

- 19. The course activities enabled me to learn in different ways (m)
- 20. I had opportunities to influence the course activities (m)

Collaboration

- 21. I was able to learn by collaborating and discussing with others (n)

Support

22. I was able to get support if I needed it (c)

Learning factors from the literature that LEQ intends to examine

We tend to learn most effectively (in ways that make a sustained, substantial, and positive influence on the way we think, reflect, act or feel) when:

a) We are trying to answer questions, solve problems or acquire skills that we find interesting, exciting or important

b) We are able to speculate, test ideas (intellectually or practically) and learn from experience, even before we know much about the subject

c) We are able to do so in a challenging and at the same time supportive environment

d) We feel that we are part of a community and believe that other people have confidence in our ability to learn

e) We understand the meaning of the intended learning outcomes, how the environment is organized, and what is expected of us

f) We have adequate prior knowledge to deal with the current learning situation

g) We are able to learn inductively by moving from concrete examples and experiences to general principles, rather than the reverse

h) We are challenged to develop a true understanding of key concepts and gradually create a coherent whole from the content

i) We believe that the work we are expected to do will help us to achieve the intended learning outcomes

j) We are able to try, fail, and receive feedback before, and separate from, each summative assessment of our efforts

k) We believe that our work will be considered in an honest and fair way

l) We have sufficient time for learning and devote the time needed to do so

m) We believe that we have control over our own learning, and not that we are being manipulated

n) We are able to collaborate with other learners struggling with the same problems

Literature

Bain, K. (2004). *What the Best College Teachers Do*, Chapter 5, pp. 98-134. Cambridge: Harvard University Press.

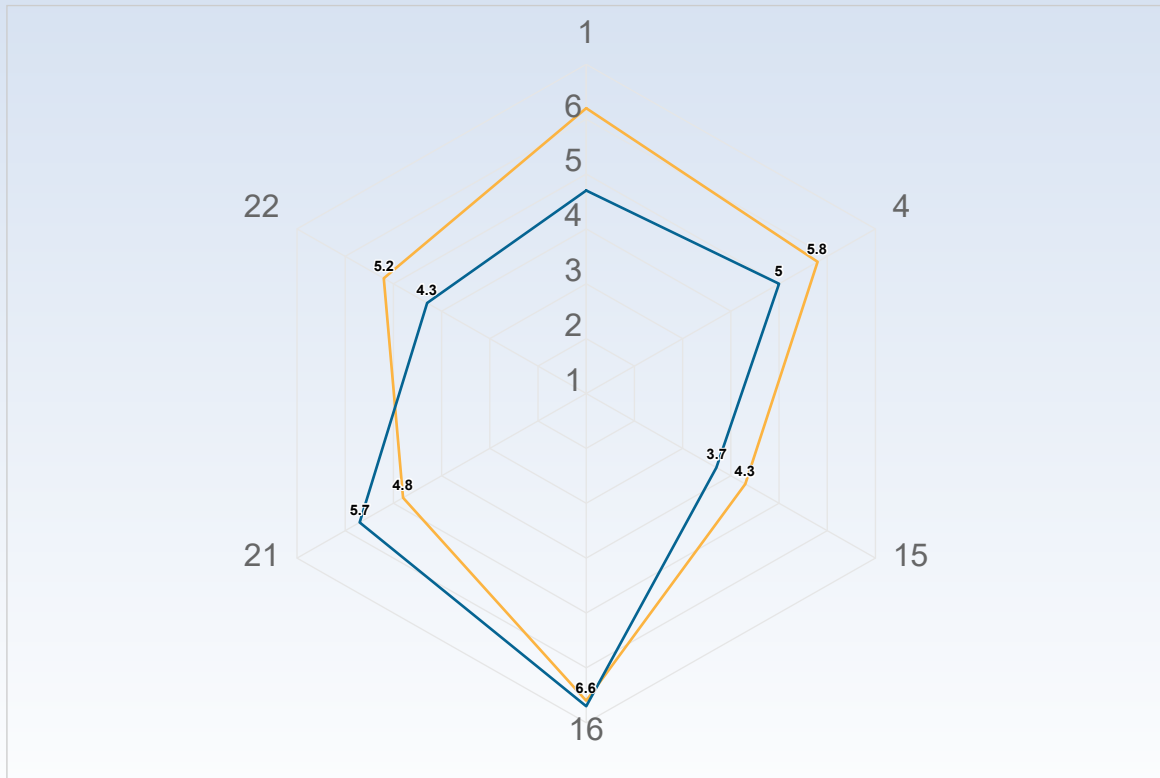
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

Elmgren, M. & Henriksson, A-S. (2014). *Academic Teaching*, Chapter 3, pp. 57-72. Lund: Studentlitteratur.

Kember, K. & McNaught, C. (2007). *Enhancing University Teaching: Lessons from Research into Award-Winning Teachers*, Chapter 5, pp. 31-40. Abingdon: Routledge.

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

Average response to LEQ statements - per gender



— Kvinna — Man — Annat — Vill ej uppge

Comments

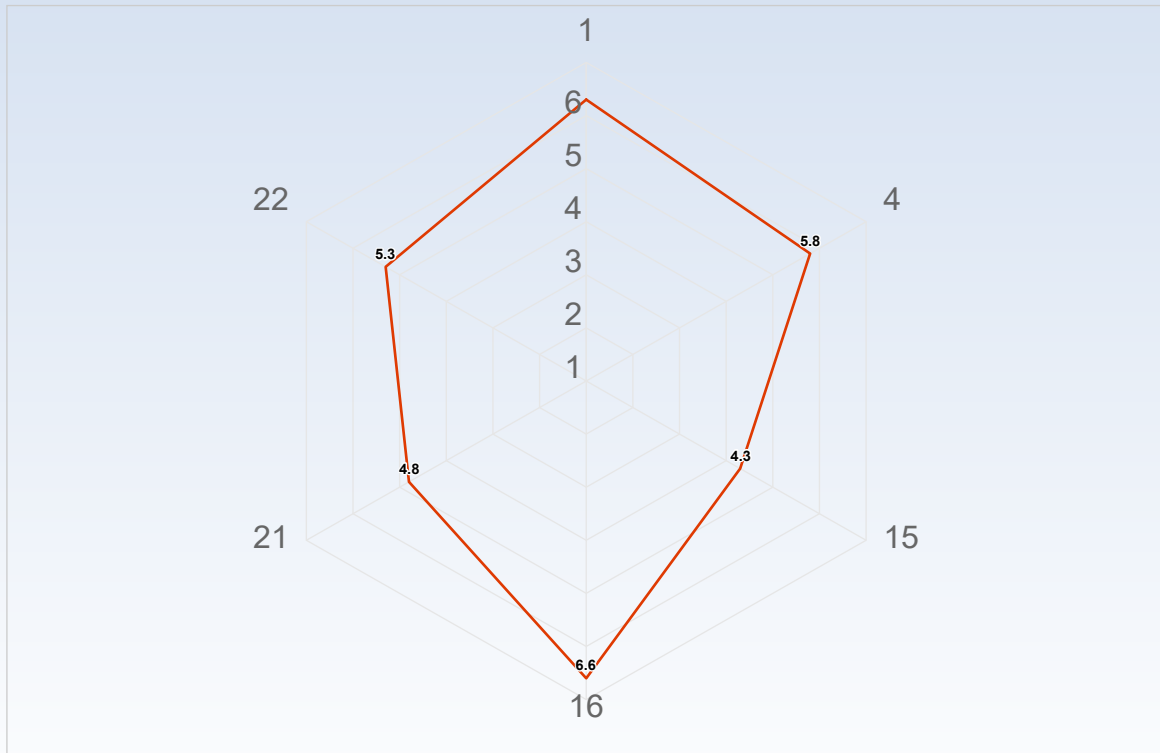
Comments (I am: Kvinna)

This is one of the rare courses (if not the only one) where it sometimes happened there were more female than male students in the classroom. It doesn't have to mean anything, but maybe indicates how equal we felt within it, comparing to the female presence in Kista campus in general.

Comments (I am: Man)

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Average response to LEQ statements - per type of student



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

Comments

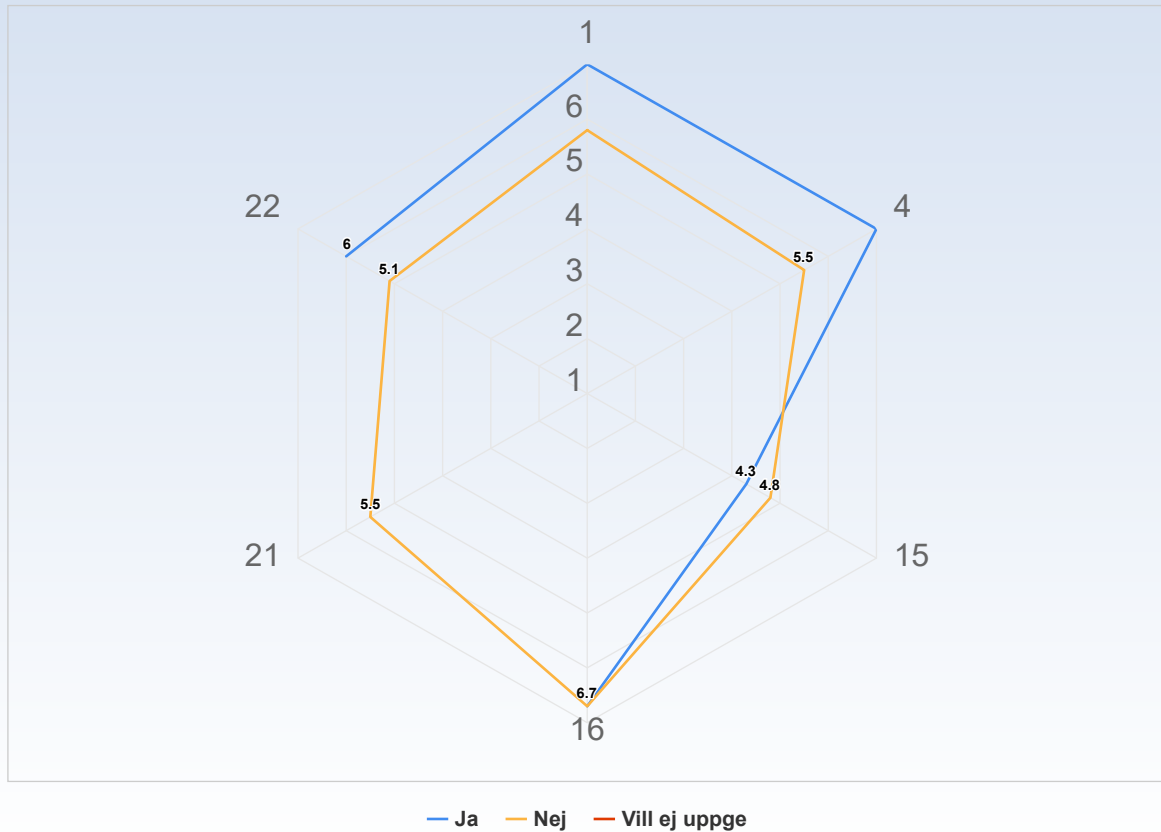
Comments (I am: Svensk student i årskurs 1-3)

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Comments (I am: Annan typ av student)

International bachelor student

Average response to LEQ statements - per disability



Comments

Comments (My response was: Ja)

I have a neuropsychiatric disorder which significantly impacts my ability to go on lectures due to sensory problems, aswell as work in groups. So the structure of assignments and video lectures worked really well for me.

Comments (My response was: Nej)

-
Not that I know.

GENERAL QUESTIONS

What was the best aspect of the course?

What was the best aspect of the course? (I worked: 0-2 timmar/vecka)

It was possible to complete the course online.

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

Läraren! Väldigt snäll och hjälper till om man frågar.

Fun assignments, learning how functional programming makes solving certain problems considerably easier.

Problems that we were required to solve.

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

Fun programming challenges. And Elixir is a fun language.

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

Doing Advent of Code in Elixir

I feel like I grew alot as a programmer. The course covered alot of interesting programming problems in addition to the course topics. After this I felt motivated and confident to start learning a language that supports functional programming (Rust) and write some hobby projects on my own.

Intressant och kul att lära sig funktionell och concurrent programmering.

The examination method allows for an efficient way of learning new content.

Learning functional programming and recursion.

Interesting subject, good lectures

The teacher. Elixir/Erlang itself is also great, but can not be compared to Johan's pedagogical approach and inspiring teaching style.

I think it is a really complete course. On the one hand you have the theory lectures which are really good to understand the course and on the other hand you have the assignments which are fun to do and provide you with a better understanding of the course.

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

I like the way of the assignments work, good way to practice programming

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

The course gave me an eye opening towards fun challenging programming objective, as well as fun learning about different types of algorithms

What would you suggest to improve?

What would you suggest to improve? (I worked: 0-2 timmar/vecka)

Make an exam or at least partial exams or submission of codes of the tasks.

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

Skulle nog personligen säga hur svårighetsgraden på uppgifterna "skalar". Det var en väldigt stor överraskning när första betygshöjande uppgiften var väldigt svår :(T.ex.: (vet inte om det är okej att göra såhär då man kanske måste göra om hela upplägget för kursens föreläsningar) jag hade föredragit att ha "Interpretor" efter "Higher order functions" pga deras svårighetsgrader.

Annars så kändes också upplägget med föreläsningar lite för tajt med deadlines:en. T.ex. att man hade en föreläsning om en uppgift som ska lämnas in samma dag... fast jag vet inte vem det är som bestämmer schemat så det kanske är svårt att ändra på.

More explanation to the problems. Also, if possible to check for minor mistakes in documents (spelling, unfitting formulas and mixture of languages)

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

A bit more clear course and assignment schedule.

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

More Advent of Code in Elixir. Create a leaderboard for the class, to compete again each other.

Consider working on improving video lectures. They are an amazing resource for all students but particularly for those who have an disorder, and having some available is a great start. It'd probably be some extra work to record the full lectures (think IE1204)but I think the pay off would be good.

Någon mer uppgift på concurrency/parallellprogrammering tror jag vore bra.

Either release assignments earlier, or extend the deadlines to cover the weekends. All participating students are adults and should be allowed to manage their time as they deem best. Micromanagement is not required.

Incorporate concurrent programming into one of the required assignments please.

The assignments sometimes feel unstructured, which I think could be improved simply by giving a vision of where we're headed in the assignment introduction. For example: "At the end of this assignment, we will have created an algorithm that does this, meeting the following criteria" and so on. The same idea could also help make the lectures even better, to make it easier to put the lecture content in context immediately. I would have liked some sort of constructive feedback regarding what I do understand well and what I can try to improve.

Some of the classmates were concerned when they were waiting for the results longer than others or when they were mixed up with someone else.

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

Maybe try to balance the difficulty of the assignments with the length of the assignment. Some tasks was much harder and more extensive then others and still only 5 working days to complete them.

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

Personally, I would have a little more in depth focus on a topic, for example one assignment every two weeks.

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

Hade gärna sett att kursen helt görs om och istället blir en påbyggnad på programmering 1 kursen med mera Java och gå in mer på djupet och lära oss det bättre istället.

Sen uppgiftsbeskrivningarna kändes som om de bara var nedskrivna tankar utan någon struktur, med många fel, både stavfel och konstiga meningar som inte var grammatiskt korrekta och ibland bara slutade mitt i. Var väldigt jobbigt att läsa och tolka och förstå vad som skulle göras.

What advice would you like to give to future participants?

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

Försök gärna förstå och lösa uppgifterna utan att kolla på ID1019-Githuben! :) Kolla endast om man verkligen är lost, annars så kanske man inte lär sig något alls. Uppgifterna tar tid, så börja så fort som möjligt.

Keep track of your time. Problems may seem to be fast to solve but remember that you have other courses to deal with and the sooner you are done with one problem the more time you will have for other important things.

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

It is a fun course.

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

Advent of Code is great practice for becoming familiar with Elixir.

Read the problem as soon as it releases at 8.00 on Mondays. You may not have to start working instantly but allowing the brain time to work on a problem and estimating the workload, makes it easier to finish before the deadline.

Försök lära dig hantera listor i Elixir grundligt.

Don't slack!

Enjoy this course, it is fun! And be open to learning a new programming paradigm!

Read about Elixir prior to the course. If there is something you are concerned about, have courage and talk to the course responsible.

I think its a really nice course to take. I would recommend going for higher grade because the assignments are quite fun and you get to fully understand the subject.

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

Get going asap and read up on Elixir library. Many useful functions in there.

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

I would suggest to really take time and learn recursive thinking

Is there anything else you would like to add?

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

Tack för kursen! :)

-

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

No

Even long after my batch graduates, I would like to hear Johan has taken good care of himself, and the community has taken good care of him, and is still making the difference for students, one way or another.

-

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

Montelius is a great professor!

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

No

SPECIFIC QUESTIONS

RESPONSE DATA

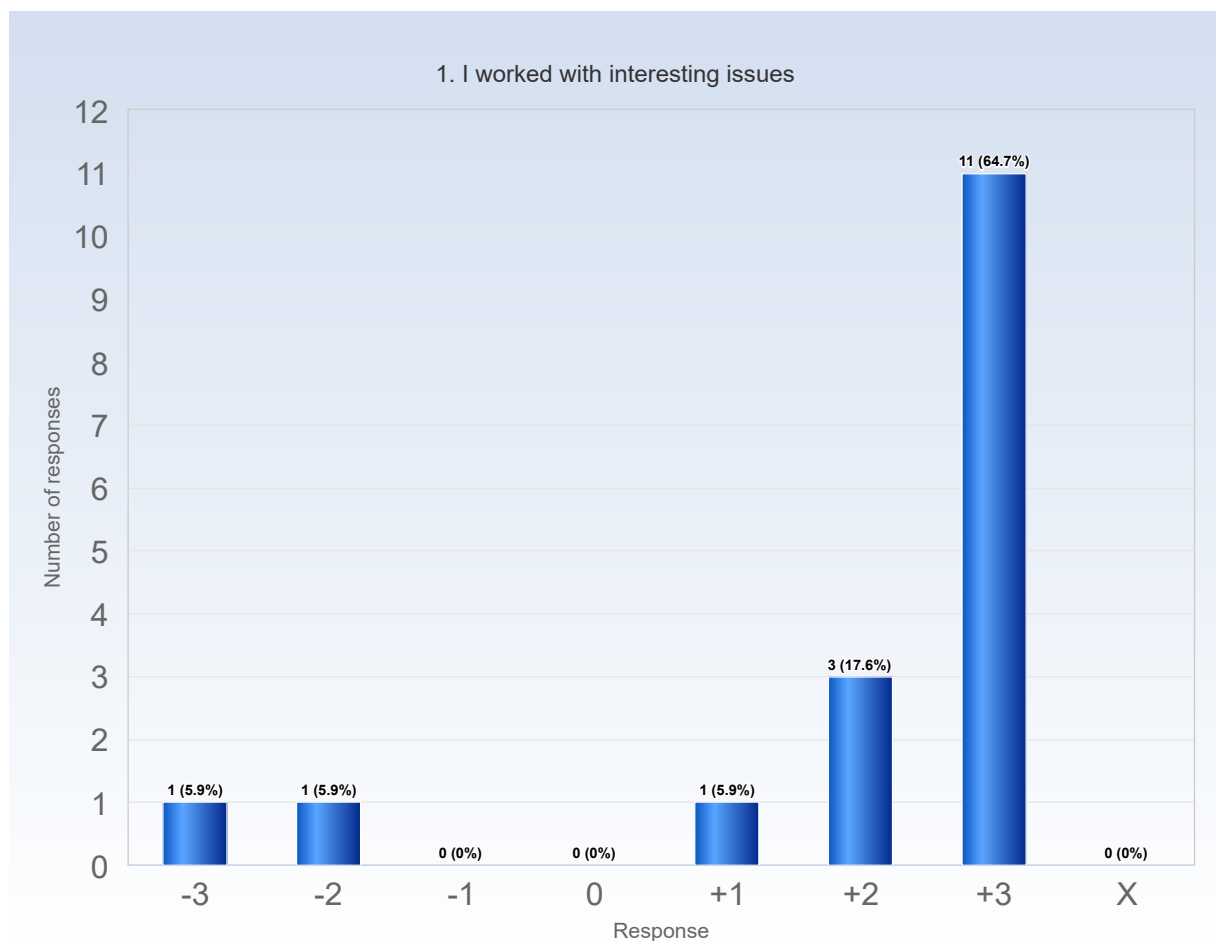
The diagrams below show the detailed response to the LEQ statements. The response scale is defined by:

-3 = No, I strongly disagree with the statement

0 = I am neutral to the statement

+3 = Yes, I strongly agree with the statement

X = I decline to take a position on the statement

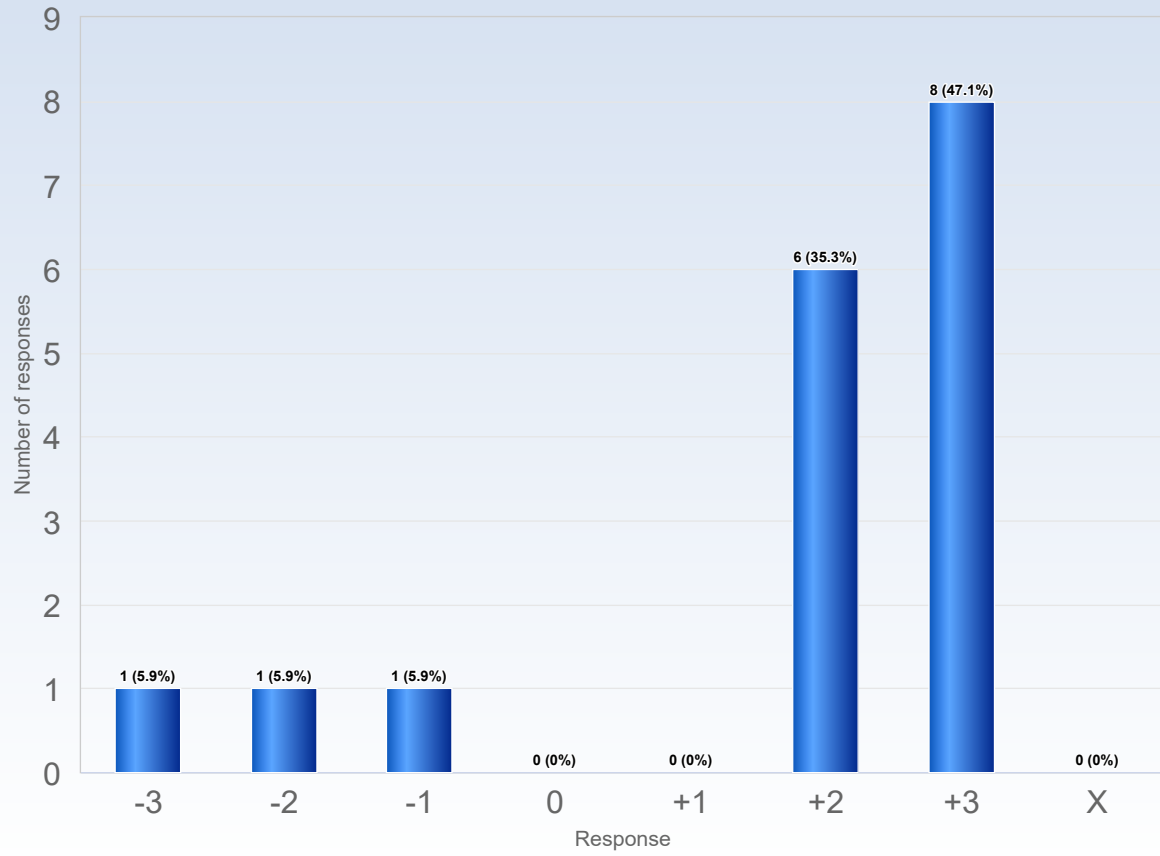


Comments

Comments (My response was: +3)

Väldigt intressanta uppgifter! Jag fick lära mig många nya saker och att få lära sig Elixir var också väldigt kul.

4. The course was challenging in a stimulating way



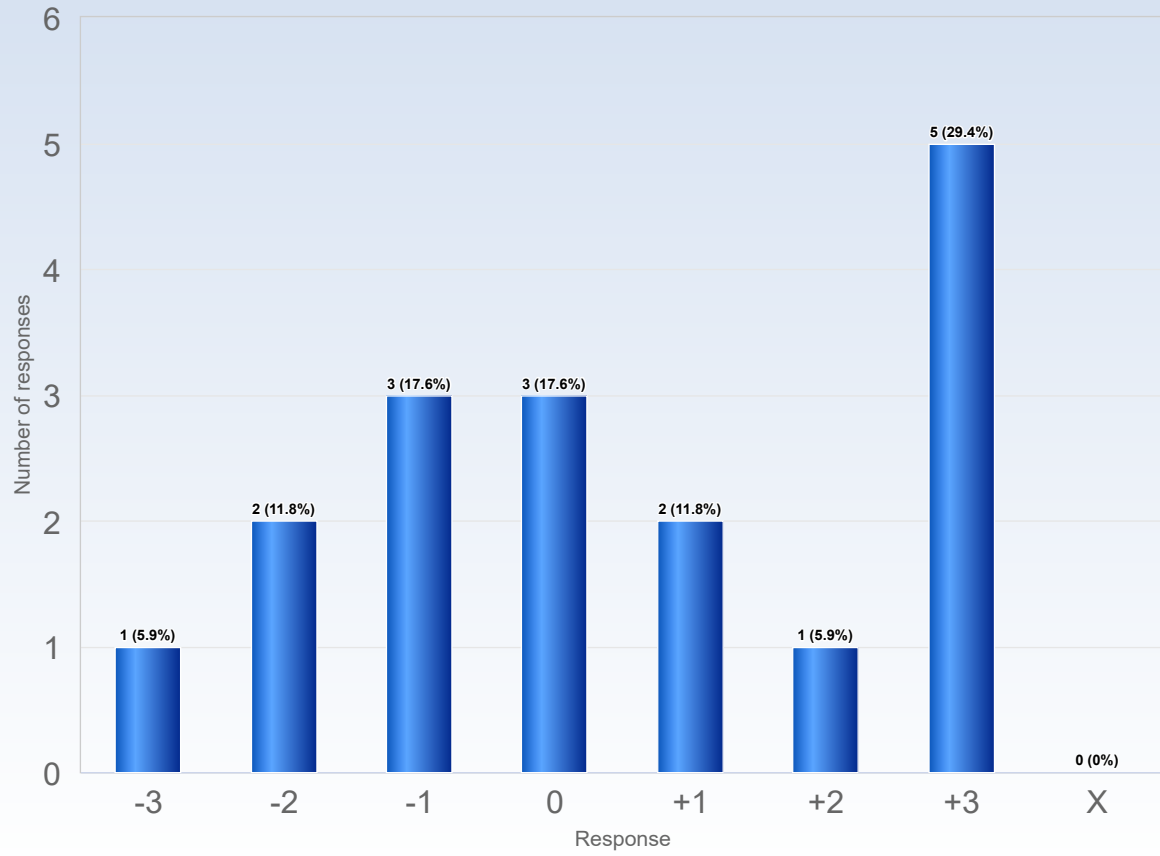
Comments

Comments (My response was: +2)

Oftast ja! Men vissa uppgifter kändes alldeles för svåra kanske...

-1 for report writing becoming a bit repetitive

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

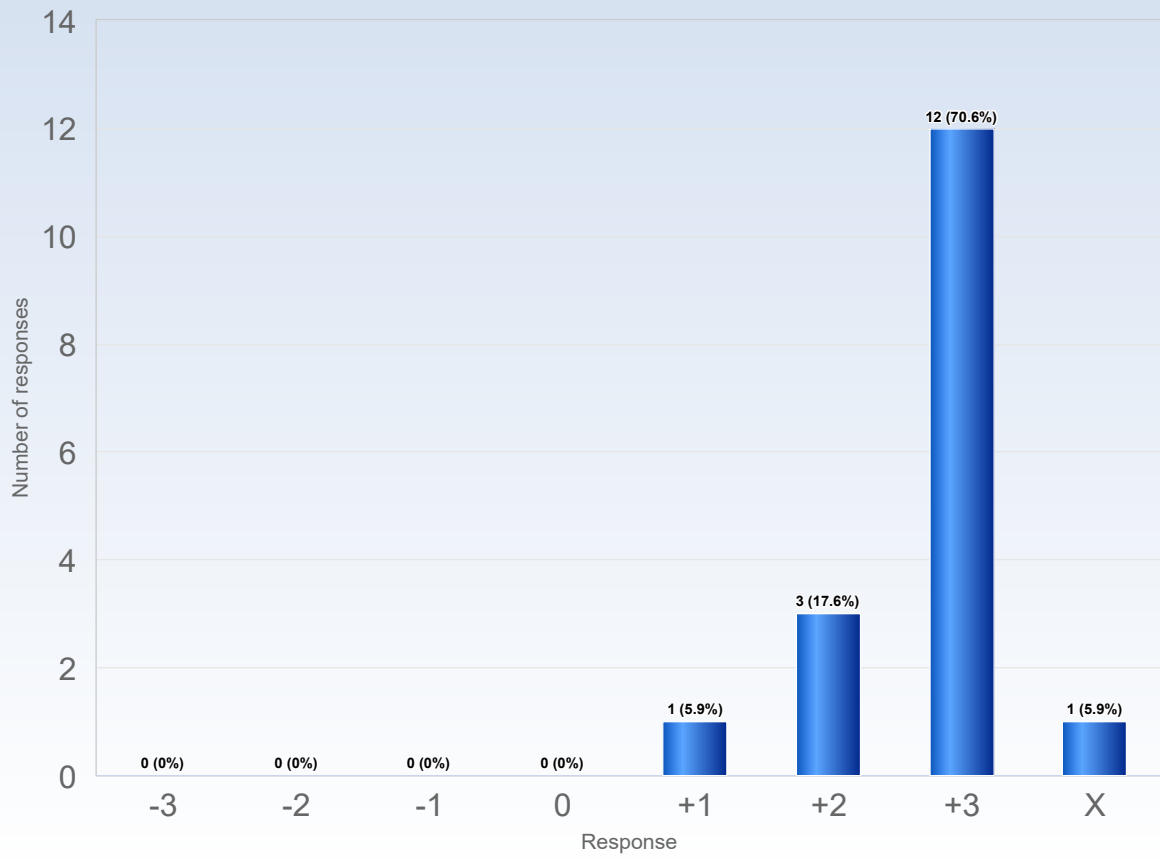


Comments

Comments (My response was: +3)

It was possible to ask questions on canvas.

16. The assessment on the course was fair and honest

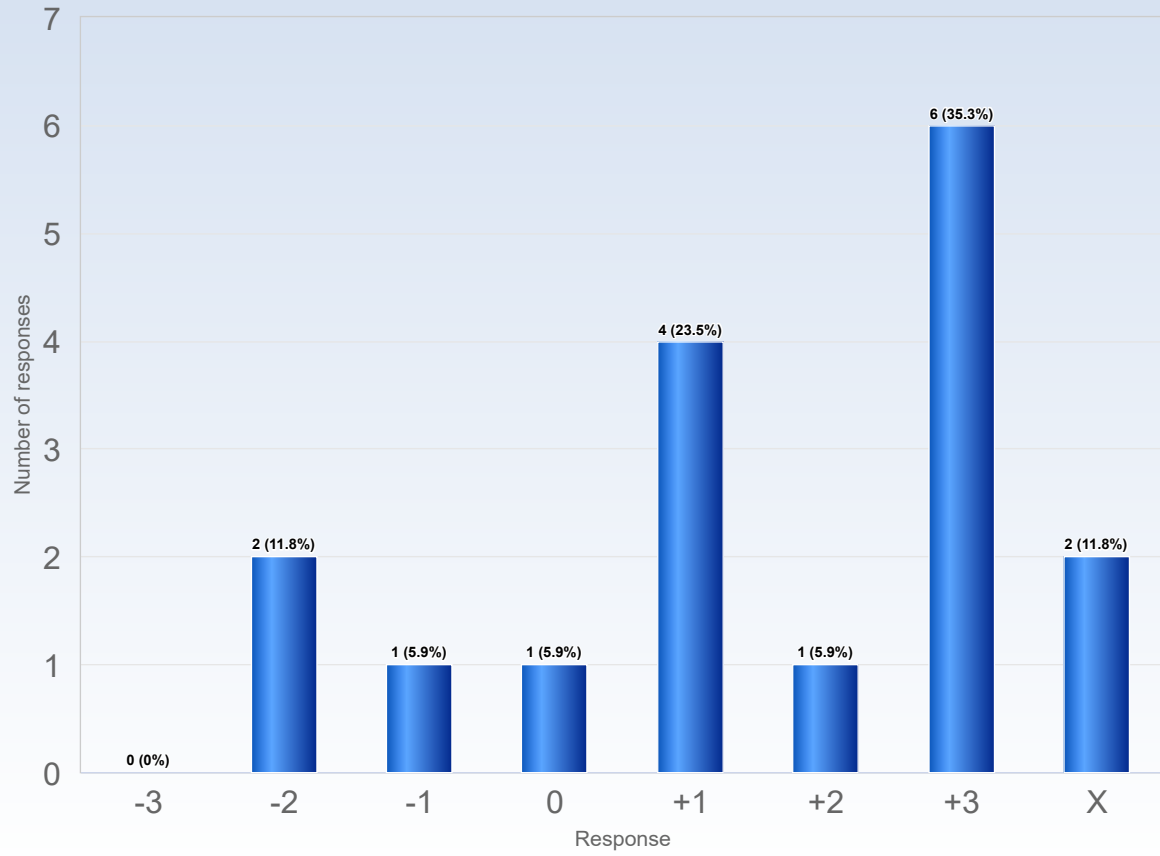


Comments

Comments (My response was: +3)

As mentioned previously, considering the deadlines, I think the grading was good.

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

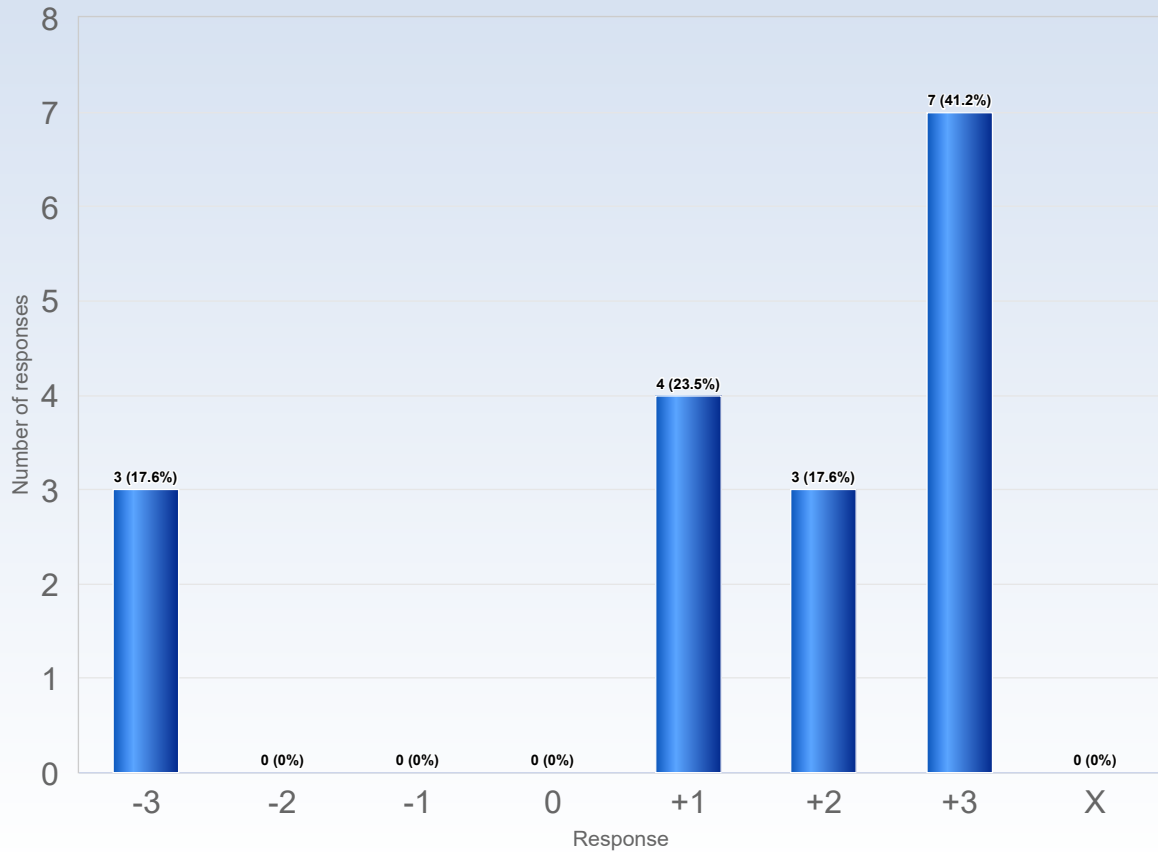


Comments

Comments (My response was: X)

Completed the course alone, so kinda hard to give an statement on this.

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



Comments

Comments (My response was: -3)

Montelius var svår att få kontakt med utanför föreläsningarna.

SPECIFIKA FRÅGOR

Inlämningsuppgifterna: var det några som var bättre än övriga, vilka var inte meningsfulla?

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Inlämningsuppgifterna: var det några som var bättre än övriga, vilka var inte meningsfulla?

Mina favorituppgifter jag jobbade med (de jag tyckte var roligast/"bättre än övriga"): Towers of Hanoi, Advent of Code Day..., Train shunting, Huffman coding, Higher order functions & Philosophers and Concurrency.

Uppgifter jag tyckte var meningsfulla: Taking the Derivative, An environment, Huffman coding, Interpreter, Higher order functions & Philosophers and Concurrency.

Uppgifter jag tyckte var mindre meningsfulla: Towers of Hanoi & Monte Carlo.

OBS: bara för att vissa uppgifter kändes mindre meningsfulla så betyder det inte att de var "dåliga". T.ex.: Towers of Hanoi gick väldigt snabbt att göra och skriva en rapport om, och man kanske till och med kanske tänker att den var lite för lätt. Men, jag tror att den här perioden är mycket tuff jämfört med andra perioder och att man gärna kan behöva en "lättare" uppgift som en liten paus. För mig med 4 kurser så hamnade de lättare uppgifterna alltid på veckor där de andra kurserna var extra intensiva, så tack vare dessa "lättare" uppgifter så hann jag även med de andra kursernas deadlines.

I think they were all pretty good.

Non

Evaluating an expression did not feel super meaningful considering the simplification step of the derivative assignment. They were essentially the same thing except with the addition of a map in the expression assignment.

No.

All the assignments were meaningful.

I don't really see the point in assignments 1 and 2 as they're both versions of each other. I'd suggest making one assignment out of the two.

All of the assignments were meaningful. There is not much I can say about which ones were the best but I really liked the train shunting problem. The most challenging though was the Day 16 Advent of code problem.

Some assignments (particularly towers of Hanoi) were so quick to solve that I struggled with finding things to discuss in the report. To me it can feel like a waste of time to try come up with things to write about rather than actually studying the subject. One solution would be to replace the report with an oral presentation to a TA, maybe just for one or two assignments.

In my opinion, all were meaningful, and I even plan to do more of them than I managed during the course. When it comes to personal preference, I enjoyed the Derivative, Hanoi, Advent of Code, Train shunting and Morse code the most.

I particularly think that the hanoi towers and the montecarlo simulation were the least interesting and I really enjoyed the Advent of code 16 (although I found it quite challenging)

Inlämningsuppgifter vs tentamen: fördelar och nackdelar?

Inlämningsuppgifter vs tentamen: fördelar och nackdelar?

There was no exam

Att ha inlämningsuppgifter varje vecka kan kännas lite jobbigt om man har andra kurser som kräver mycket fokus, men jag tycker det är ett väldigt bra sätt att "tvinga" oss att arbeta med relevant teori från föreläsningarna. Annars finns det risk att man kommer på någon ursäkt och försöker skjuta fram det som går igenom på föreläsningarna och att det potentiellt kan leda till att man aldrig hinner lära sig/glömmer bort att lära sig det inför tentan.

Det kanske också är lite jobbigt att ha en tenta om just Elixir? Jag tror nästan ingen kommer vilja skriva en Elixir-tenta på papper frivilligt och personligen ogillar jag också digitala tentor. Så just för den här kursen tycker jag att inlämningsuppgifter helt enkelt borde fungera mycket bättre än tentor.

Pros of assignments is that there is quicker feedback so you can adjust while the course is still going. You get to work on something more interesting with a weeks time while in a exam the scope of any problem you are expected to solve must be smaller. I think there would mostly be drawbacks to not having an exam is the course was more theoretical, because then knowledge of specific concepts would be more important to retain.

Pros

- Weekly test, no need to cram everything in the end
- Focus on one part at a time

Cons

- No way to test what you've learnt throughout the course

Hemuppgifterna tvingar en väl att bli bättre på det praktiska kodandet, möjligen blir den teoretiska förståelsen lidande men vet inte om en tenta är så mycket bättre på lång sikt ändå.

While assignments can be more stressful during the progression of the course, they are a better solution compared to exams in a course like this. Exams place a single point of failure and become incredibly stressful, as you become forced to solve a set of issues in a specific time, while assignments can be more open and relaxed.

Assignments make you study during the whole course, if there is a 7.5hp exam at the end it might be vacation mode to the week of the exam. Also good with assignments is that you have time to be sick and still be able to catch up. Being sick on exam day means instant re-exam which is very unfortunate.

Much prefer assignments.

Assignments are easier to "cheat" from, you could always take code from the teachers github and use that - exams/partial exams give a more fair assessment.

Föredrar inlämningsuppgifter då det speglar mera hur arbetslivet är när man programmerar.

Assignments allow for continuous examination which is perfect for any course in programming as you can target certain core topics for a specific week. Written exams in programming are horrible in my experience (especially when written on paper).

Assignments:

Pros: Always learn and remember old stuff. Consistent grading. Can receive feedback and help before even submitting

Cons: Take time to complete. Some can be deceiving in terms of estimating the amount of time needed to solve them

Exam:

Pros: Challenges the overall understanding of all topics that were taught. Students can prepare for them with one week revision time (or more if they see fit)

Cons: Questions can be either too simple (rare) or extremely challenging (more frequent). Only gives a one time learning experience after which students will forget most of the material in a week or less.

Assignments, pros: Given that all weeks have a similar workload, one or two assignments a week gives a good flow and balance to the course (similar schedule each week), which means learning can be in focus (not keeping track of a bunch of different deadlines). Also, in many courses with an exam, the workload is greater towards the end of the course.

cons: While writing a report can be helpful for learning and reflection, it does become tedious toward the end of the course, removing the fun and taking focus away from learning to passing the course. The last point could also be said about having many as opposed to fewer assignments. I could have written better code and/or come up with better solutions to many of the assignments, but the only difference to me is that it would have taken more time.

Exams, pros: The obvious benefit to having an exam at the end of a course is that the student is examined more on the knowledge acquired during the course, and less on prior knowledge. A student who has a lot of prior knowledge can show that at the exam as well, without putting as much time into the course as with weekly assignments.

cons: Students tend to only learn what is required for the exam, and then forget it soon after.

I think the best exam would be similar to the last assignment: a programming problem with very little preparation except for the course itself, with about one workday to solve.

I would say I have learned more in assignment-based courses/parts of the courses in general. Comparing to Algorithms and Data structures, I also liked the introductory quiz and the last assignment in the classroom, they were very useful addition from learning perspective, but far less stressful than the exams. The only disadvantage I see in this concept is not having some sort of official "re-exam" option if one misses some deadlines for objective reasons, students are worried about that in every course/part of the course of this type.

I think the course is best evaluated with assignments as it is