

DD1354 VT21 Course Analysis

Modsim 6.0hp

DD1354 crosses mathematics, programming, visualisation and simulation. In order to pass the course, students must pass four lab assignments (P-F), complete a project that they specify themselves (A-E) and pass an exam (P-F).

Overview

Aspect	Feedback and action
There were many positive comments in relation to the general philosophy of the course with respect to getting students exciting about mathematics, programming and nature with a view to supporting <i>active</i> and <i>lifelong</i> learning	Thank you for the many positive comments. This comment from the evaluation captures our feelings better than anything we could write: <i>"This course is a rare opportunity to explore and deep dive into an aspect of your choice. Put in the effort to create something you are proud of, can showcase and perhaps even continue developing after the course"</i>
Lab assignment programming aspects somewhat shallow in some cases	Collected detailed feedback from class via questionnaire on each specific lab. Will update lab materials to add complexity to some of the specific questions that students felt were somewhat shallow, while avoiding taking emphasis in the course away from the project component
Gender representation on the course	Continue to monitor female participation in the course, although scores on LEQ were similar across all genders i.e. for those that did participate
Relationships of project and grades could be made clearer	Will provide further exemplars in relation to previous projects and grade outcomes and continue to highlight the importance of the specification definition and feedback process
Collaboration and discussion with others could be improved	While students had a tendency to relate this down to Covid, which is a clear factor behind it, further student-driven sessions related to presentation could be explored

Details

Students appreciated the fun and practical nature of the course, although reactions were mixed in relation to the complexity of the lab tasks - some thought they were too light and could have a deeper mathematical component in order to better meet the course ILOs. This likely led to the rating of 5.4 on question 4 of the LEQ related to challenge. Others noted that the depth in the course relates primarily to the project component, in which students have freedom to choose the degree to which they investigate the subject. We requested and received feedback from the class for each specific lab assignments and will use it the update, clarify and extend the labs appropriately, while also being careful not to reduce the time available for students to set their own level of challenge via the project specification and completion.

Another question on the LEQ that was rated lower than others was question 7 in relation to the clarity of the tasks asked of students. This likely relates to the project component of the course, which students themselves must define, specify and conduct their own projects on a topic of relevance to the course. While many students greatly appreciated the open nature of the project, it also poses challenges in relation to communication grade requirements. Apart from a detailed specification process in which students get feedback from the course team, currently they also see previous project blogs. We will follow some of the ideas suggested by students in the course evaluation that further information will be given about these exemplars in relation to grading at a coarse level.

The course team conducted a drive this year to try to obtain feedback from as many participants as possible. This worked well with 54 total responses which provides a very good representation for the cohort this year.

There appeared to be a low number of female participants/responses (~7 through a brief manual count) in the course this year, although it is not clear why. The ratings for questions on the course evaluation were generally the same across gender, apart from the feeling from females versus males that their background knowledge was less sufficient to take the course (5.0 versus 6.3). This should be further investigated as otherwise as the experience and performance across genders were otherwise very similar. It would be nice to be able to query more data in relation to gender for those registered to a course and in the course analysis so that a more comprehensive analysis can be conducted.

At a programme level, there have also been discussions of the possibility of running this course after (rather than in parallel) with another conditionally optional course, *multivariate analysis* (SF1626). The DD1354 course team strongly support this move as they feel that both courses are complimentary to each other and it is logical that students would attend SF1626 first.

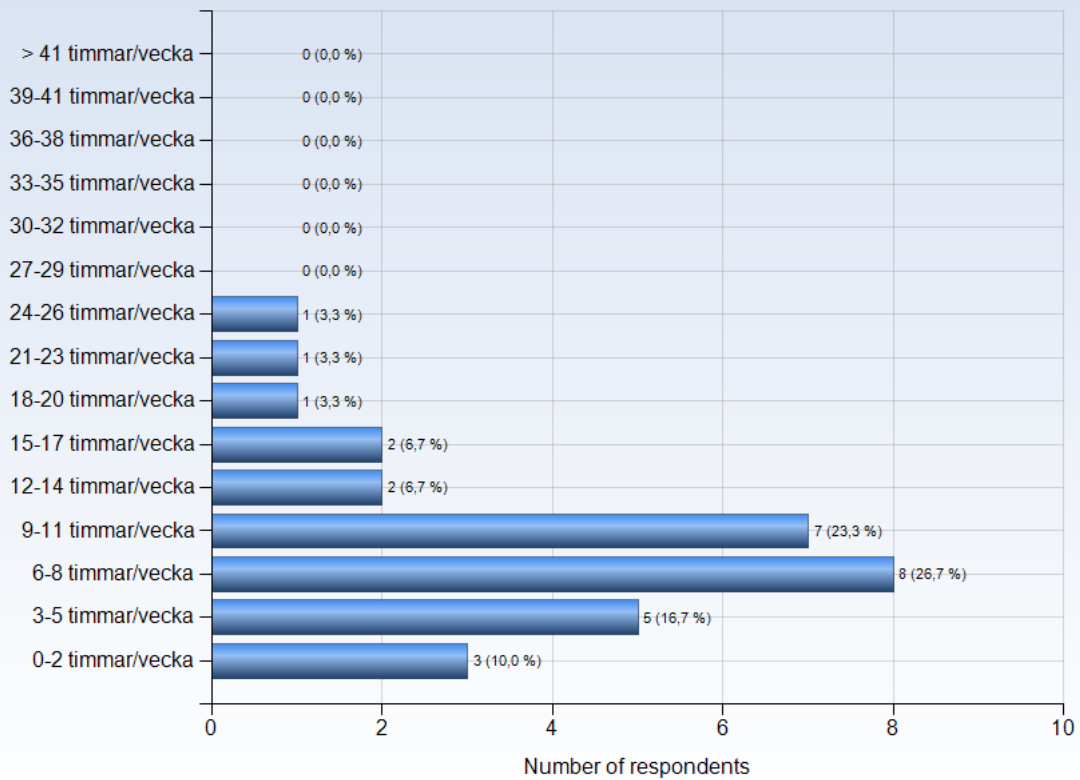


DD1354 - 2021-03-23

Antal respondenter: 54
Antal svar: 30
Svarsfrekvens: 55,56 %

ESTIMATED WORKLOAD

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





Comments

Comments (I worked: 0-2 timmar/vecka)

Materialet är instressant men kursen är för enkel.

Jag tyckte att den här kursen var alldeles för enkel. Jag tycker att det är kul att göra simulationer och så, men det känns som att man inte riktigt lärde sig hur man gjorde på riktigt i den här kursen. Man fick färdig kod som man skulle ändra på någon siffra i eller skriva till typ två rader så simulationen gjorde vad den skulle. Om man istället hade lagt mer fokus på hur matten faktiskt funkar och så man får skriva mer kod själv så tror jag att kursen kan vara mycket mer givande. Just nu känns det som att man ger upp på att försöka förstå alla komplicerade differentialekvationer. Om man istället hade gjort flervarven till ett förkunskapskrav tror jag att man hade kunnat faktiskt försöka förstå sig på den krångliga matten och på så sätt lära sig mer av kursen.

Comments (I worked: 3-5 timmar/vecka)

Under veckan då projektet gjordes var det såklart mer.

Comments (I worked: 6-8 timmar/vecka)

The amount of hours includes watching the lecture (around 2 hours/lecture) and working with labs. As I was happy with a pass on this course I did not do the extra tasks.

Enkel att få passing grade, men har man tid och vilja så kan man gå väldigt djupt.

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

This made the course feel less stressful and more enjoyable.

Did all the labs in the first few weeks of the course to ease the workload later. This makes it hard to gauge how many hours/week I worked with the course.

Det var inte så många föreläsningar utan mycket arbete. Tyckte dock att det gjorde det lite knepigt eftersom lite fler föreläsningar hade behövts för att kunna förstå det man gjorde.

Koncentrerat kring projektperioden

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

This was hard to answer, the number of hours before the project wasn't much, but after the project started I spent a lot of time on that.

The course could be completed in rather short time, since the lectures were not really required to get a passing grade. However, since there were a lot of opportunities to spend time on things that interested you, for instance in the extended parts of the labs, as well as in the project, it was really up to you how much time you wanted to spend on the course.

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

Jag tyckte att kursen behövde en lagom mycket tid. Föreläsningar och annat ligger på mig, men kursen är förståelig om man har en tuff situation så det är jättebra.

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

det tog sin tid att genomföra labbarna + projektet



LEARNING EXPERIENCE

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

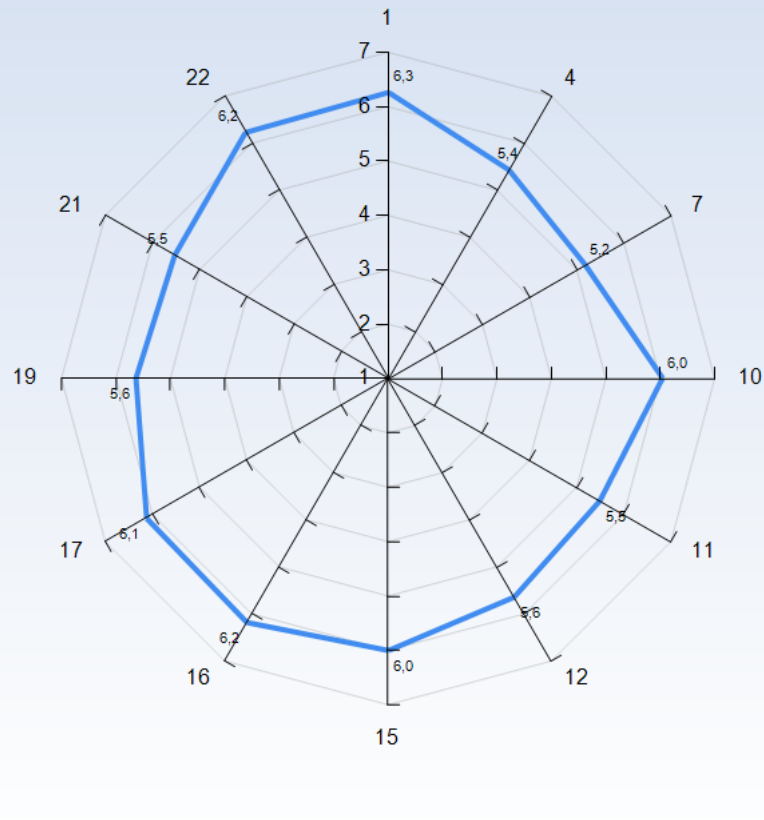
1 = No, I strongly disagree with the statement

4 = I am neutral to the statement

7 = Yes, I strongly agree with the statement

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

Average response to LEQ statements - all respondents





KTH Learning Experience Questionnaire v3.1.4

Meaningfulness - emotional level

Stimulating tasks

1. I worked with interesting issues (a)

Exploration and own experience

2. I explored parts of the subject on my own (a)

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

Challenge

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

Belonging

5. I felt togetherness with others on the course (d)

6. The atmosphere on the course was open and inclusive (d)

Comprehensibility - cognitive level

Clear goals and organization

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

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

Understanding of subject matter

9. I understood what the teachers were talking about (f)

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

11. Understanding of key concepts had high priority (h)



Constructive alignment

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

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

Feedback and security

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

15. I could practice and receive feedback without being graded (j)

16. The assessment on the course was fair and honest (k)

Manageability - instrumental level

Sufficient background knowledge

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

Time to reflect

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

Variation and participation

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

20. I had opportunities to influence the course activities (m)

Collaboration

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

Support

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



Learning factors from the literature that LEQ intends to examine

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

- a) We are trying to answer questions, solve problems or acquire skills that we find interesting, exciting or important
- b) We are able to speculate, test ideas (intellectually or practically) and learn from experience, even before we know much about the subject
- c) We are able to do so in a challenging and at the same time supportive environment
- d) We feel that we are part of a community and believe that other people have confidence in our ability to learn
- e) We understand the meaning of the intended learning outcomes, how the environment is organized, and what is expected of us
- f) We have adequate prior knowledge to deal with the current learning situation
- g) We are able to learn inductively by moving from concrete examples and experiences to general principles, rather than the reverse
- h) We are challenged to develop a true understanding of key concepts and gradually create a coherent whole from the content
- i) We believe that the work we are expected to do will help us to achieve the intended learning outcomes
- j) We are able to try, fail, and receive feedback before, and separate from, each summative assessment of our efforts
- k) We believe that our work will be considered in an honest and fair way
- l) We have sufficient time for learning and devote the time needed to do so



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

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

Literature

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

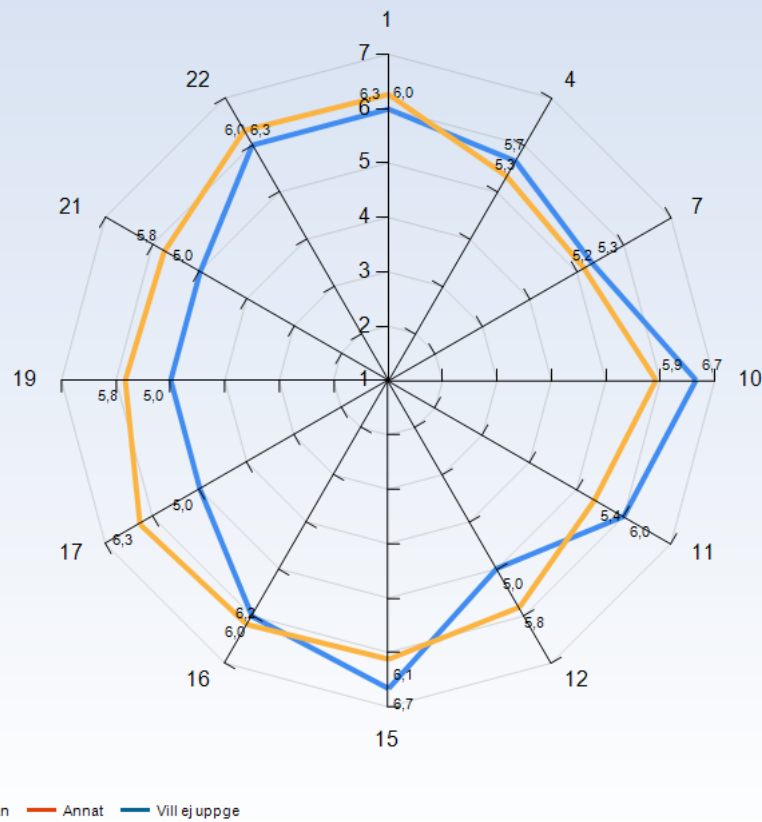
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

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

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

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

Average response to LEQ statements - per gender



Comments

Comments (I am: Man)

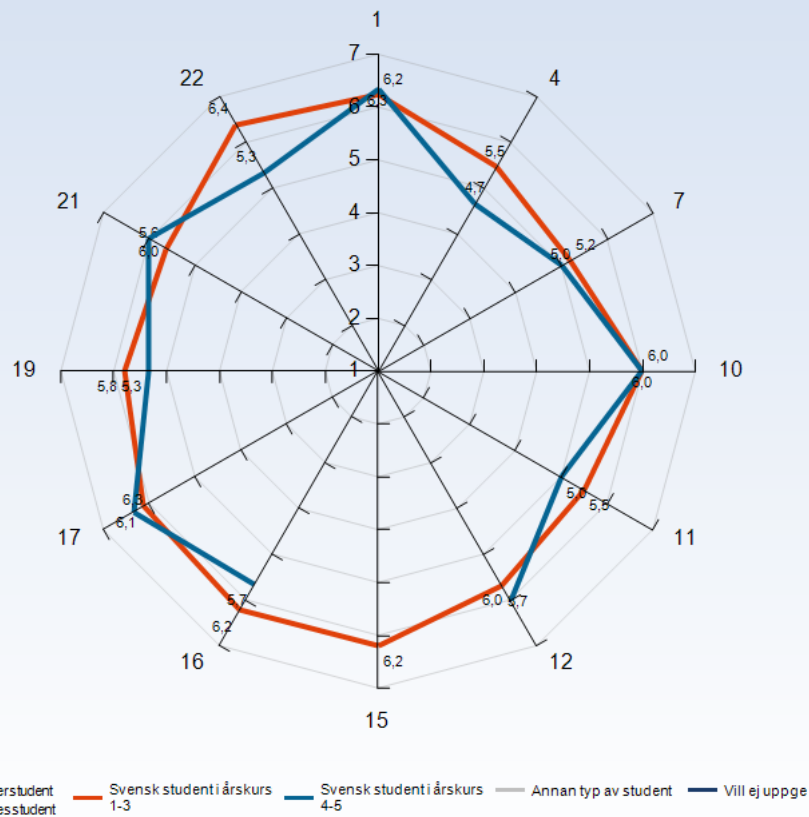
Nu såg jag ju inte alla deltagare i kursen pga pandemin men fick intrycket att snittet kvinnor mot män som valde den här kursen var lägre än de som valde den andra villkorligt valfria, flervariabelanalys

Skägget var i vägen, i dunno.

Tror inte man/kvinna har spelat någon roll.

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Average response to LEQ statements - per type of student



Comments

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

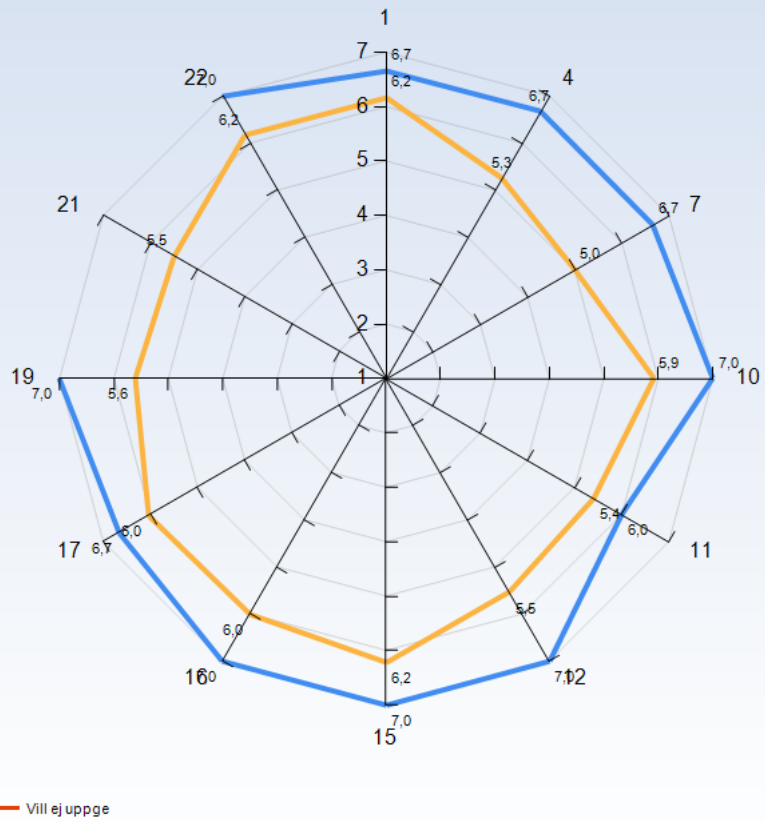
Kursen var kul och intressant. Den var light jämfört med de andra kurserna vilket är jätteuppskattat. Fortsätt med samma upplägg och svårighetsgrad men fixa oklarheten på vissa frågor och se till att det inte finns några buggar i den givna koden. Min favorit kurs på kth hittills. Kändes som rätt bra nivå.

-

Comments (I am: Svensk student i årskurs 4-5)

The requirements to pass the course were relatively low, however, there was no upper limit since the project allowed for depth. Jag valde kursen för att jag saknade 1 valfri kurs och den lät intressant. Men det gick också rykten om att kursen är barnsligt lätt och inte går att misslyckas med, vilket ärligt talat också var en stor anledning till att jag valde den då jag hade ont om tid denna period. I efterhand önskar jag att den hade varit lite mer utmanande, den nivån labbarna lög på hade man inte ens behövs plugga på högskola för att klara.

Average response to LEQ statements - per disability



Comments

Comments (My response was: Ja)

Min funktionsnedsättning skapade inga problem för mig i denna kurs.

Inga problem för rullstolsburna!

Comments (My response was: Nej)

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GENERAL QUESTIONS

What was the best aspect of the course?

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

Häftiga och roliga labbar. Bra upplägg med projektet. Föreläsningarna var intressanta.
Projektet var det roligaste.

What was the best aspect of the course? (I worked: 3-5 timmar/vecka)

Uppgifterna var för det mesta praktiska vilket är uppskattat då det flesta kurserna är mer teoretiska.
Working with interesting simulations, and being able to set the level yourself depending on your ambitions.
Roliga och intressanta labbar. Generellt kul upplägg överlag på hela kursen. Fokus låg mer kring att leka typ
Att kursansvarig var flexibel gentemot kursmedlemmarna med ex. tider och inlämningar.

What was the best aspect of the course? (I worked: 6-8 timmar/vecka)

Friheten i projektet
The course was in general very interesting as I have been wanting to go a course like this one.
Projektdelen tyckte jag var väldigt intressant och jag lärde mig mycket genom det.
De praktiska momenten där matten faktiskt tar form i något visuellt.
Allmänt bra struktur
The possibility to adapt the project to my level of knowledge and ambition.

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

Projektarbetet, det var kul att göra något som man fick komma på helt själv då man kunde utgå från egna intressen
Boids labben var kul
Labs and projects as a main learning tool. Lectures gave general knowledge about the field and all the learning about applying theory could be done separately by doing the labs and projects.
The project. Having the freedom to choose your own area was fun and rewarding since I learned a lot.
Kursens schema var anpassad efter oss och kursansvarige gjorde sitt bästa för att se att våra behov var tillgodosäta
The course topic is pretty interesting. I appreciated the labs providing concrete examples of how to use physics simulations to simulate behavior. I thought the project was fun, and appreciated the freedom when choosing what project to do.
I also really appreciate the option to receive feedback in advance of final submissions.
Föreläsaren, innehållet

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

The project! It was so fun to be able to do something practical!
The best aspect of the course was that you had a lot of freedom with how worked within the course. The test and the labs were not that difficult, but the project could be as difficult and expansive as you wanted it to be, which allowed you to work that you were interested in, and that you could work with when you wanted to.

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

Möjligheten att få hjälp under lab sessions.

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

Labbarna och projektet.

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

Att få lära sig Unity genom praktiskt arbete och stöd från assar vid behov.

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

Projektet! Även om det var lite tidspressat!



What would you suggest to improve?

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

Anställ en assistent att över sommaren uppdatera labbarna så de kan köras med senaste versionen av Unity så att de kan köras på andra OS än windows.

Som jag sa ovan så skulle man lätt kunna lägga mer fokus på matten i labbarna och i kursen allmänt. Jag tyckte också att föreläsningarna inte var särskilt givande.

What would you suggest to improve? (I worked: 3-5 timmar/vecka)

Ägna kortare tid åt labbarna och lägg lite mer tid på projektet.

Put the non-graded hand-in for the labs earlier so you and your TAs have time to grade them in time.

Kanske tydligare kommunikation om vad som förväntas av studenterna. I början såg det väldigt seriöst ut men det var inte alls så seriöst som man trodde.

What would you suggest to improve? (I worked: 6-8 timmar/vecka)

Lite tydligare röd tråd genom kursen, men kan va pga pandemin om det lätt blir lite rörigt.

More labs where we could implement basic simulations that does not require "complicated" 200 line code.

Labb 3 tyckte jag kändes lite oklar, mycket teori som man inte använde sig av sen.

Mer interaktiva/utmanande labbar, inte bara copy paste kod / ändra variabler som man kunde gjort utan att ens läsa kursen.

Mer tydlig information om feedback till projektspecifikation (d.v.s att en måste aktivt gå till labbsessioner för att få feedback över huvudtaget)

More challenging labs.

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

Tyckte första delen av labb 2 (havet) var aningen för lätt. Skulle ha varit intressant att få skriva lite kod i den labben för att få lite mer förståelse

Tyckte inte att tentan tillförde något till kursen. Den kändes mer som en enkät än ett prov på kunskap.

The steps of lab 2 were ambiguous, perhaps clarify or mention that any interpretation is valid if stated.

I would have liked to have a presentation at the end, where we could see all the projects of fellow course participants.

Vissa av föreläsningarna behöver få ett bättre syfte. Man fick inte ut så mycket av dem när man skulle göra labbuppgifterna eller projektet och många av föreläsningarna var dessutom alldeles för repetitiva.

I think the labs could afford to be a bit more involved. Interacting on a fairly surface level with the labs doesn't really prepare you that much for the project, and I feel like it could involve a little more implementing actual code yourself rather than just tweaking parameters. On lab 2 in particular, more time was spent trying to interpret the questions than actually solving any of the problems. I was often left wondering if the lab asked for a simple, roughly eyeballed solution or a comprehensive solution with a lot of maths and new code.

I felt like the lectures were either very technical, almost needlessly so, or quite surface level. I understand that the distinction is sort of by design, but I think there's maybe room for something more balanced in difficulty.

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

Two things:

1. Update the lab specifications. This isn't a major issue, but they felt outdated. For example, I think the first lab referenced "the previous lab". I guess the order was different previous years and that the lab spec hadn't been updated since.

2. Update the lab code to current stable versions of Unity. The Unity labs used a really old version of Unity that I couldn't figure out how to install on Linux. It turns out that Unity is able to convert old projects to new projects, and it did so with quite a satisfying result (some things broke, like the ability to view the grids in the ocean labs). However, it would be nice if the lab code was shipped that way. (Here is Phillips Ocean using a current version of Unity: <https://github.com/Scrawk/Phillips-Ocean>)

None of these isn't crucial, but it would be the cherry on top for a otherwise very good course.

I would perhaps like to see that the project was introduced earlier. This could maybe be restricted to giving examples of what a project could look like, and what the requirements of it were. Further, I think that the labs could require you to do more work on your own, not necessarily more difficult work, instead of doing small implementation of formulas, so that you could get more comfortable with unity, and with the simulations.

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

De kan vara lite svårt att veta vad det är som krävs för att klara delar av labbarna. Men det går bara om man går på hjälp tillfällen och frågor.

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

Enklare föreläsningar

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

Feedback, att ha möjlighet att få någon innan sista deadline skulle ha varit bra.



What advice would you like to give to future participants?

What advice would you like to give to future participants? (I worked: 0-2 timmar/vecka)

Gå inte på föreläsningarna. De tar mer tid än vad det är värt.

What advice would you like to give to future participants? (I worked: 3-5 timmar/vecka)

Jobba i grupp så löser ni labbarna snabbt och undviker många problem när det kommer till projektet.

In this course a lot of the learning comes from your labwork and the project, to learn you need to put in effort yourself

Tänkt tidigt på projektet

What advice would you like to give to future participants? (I worked: 6-8 timmar/vecka)

Börja planera projektet i god tid och stressa inte för mycket över provet.

Attend the lectures as they makes you understand the labs better. Ask for help when needed and for the project try working with something that interests you in the daily life as it may encourage you more in the project work.

Gör mer än vad som egentligen behövs. Gå djupare med labbarna och experimentera själv.

Gör labbarna tidigt, så att du har tid med projektet.

Start the labs as soon as possible to have enough time for the project.

What advice would you like to give to future participants? (I worked: 9-11 timmar/vecka)

Lägg ner mycket tid i början för labbarna, då blir det ingen tidspress under projektet

Börja med labbarna i tid

This course is a rare opportunity to explore and deep dive into an aspect of your choice. Put in the effort to create something you are proud of, can showcase and perhaps even continue developing after the course.

Do the labs as quickly as possible so that they can focus on the project 100% as that begins.

Att göra klart labbarna så fort som möjligt och spendera mycket tid på att få ihop en bra specifikation till projektet.

Don't spend hours staring on lab questions - look through the labs early, take note of the questions where you're unsure of what exactly is asked for and take it up at a lab session or in an email.

Jobba lite åt gången

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

Make sure to create a project specification were the project is divided into different levels, starting with something easy and then progressing to something harder, because something WILL go wrong and if you have done the easy parts first you have at least something to show at the end.

I would give the advice that you should focus mostly on the project, and that everything else is secondary, so that is were most of the emphasis should be. Moreover, try to come up with a project topic early, and try to get as much feedback on it as you can.

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

Om man har funderingar, gå till labb tillfällen of fråga.

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

Börja tidigt med allt och gör en plan med stor marginal för osäkerheter när det kommer till projektet.

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

börja jobba med Unity tidigt

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

Börja med projektet tidigt! Det är tidskrävande och det är lätt att inte hinna med om andra kurser (eller livet i allmänhet) kommer ivägen.



Is there anything else you would like to add?

Is there anything else you would like to add? (I worked: 3-5 timmar/vecka)

Nej.

Kul kurs!

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

Tror ej det.

-

Is there anything else you would like to add? (I worked: 9-11 timmar/vecka)

Nej

Very fun course overall.

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

When deciding on what to do for the project, it would have been nice to have a bit more tangible clue to what grade a project would get. Maybe you could ask this years students if you could mark their project blogs with a ballpark grade (i.e. this project would get a pass and this project would get a higher grade).

When I was deciding on what project to do, I was looking through the project blogs and it would have been nice to know approximately what grade I would get if I managed to do something similar.

Oh, also, the "Links" at the bottom of the main page on Canvas should be moved higher up. It is cumbersome to scroll all the way down there every time :P

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

En generell ide är att lägga feedback formulären i lab instruktionerna, istället för att lägga det i ett email som vi kommer behöva gräva fram när vi ger feedback på labbarna.

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

bra kurs, tack för den! :)

SPECIFIC QUESTIONS



Hur betygsätter du labbuppgift 1? Kommentarer?

Hur betygsätter du labbuppgift 1? Kommentarer?

Väldigt intressant och kul att man fick skriva lite kod själv. Var intressant att se hur tre enkla ekvationer ledde fram till något som såg realistiskt ut

Bra början

Bra första labb, inte för svår. Intressant.

Good introduction, slightly easy, could have perhaps enforced exploring other parts of the simulations.

5/5 Best lab overall. Feels like the lab where I learnt the most.

5/5. Bra introduktion till Unity.

Rolig och intressant uppgift. 10/10

Allmänt en bra labb.

En bra introduktionsuppgift

I really liked lab 1, good opportunity to learn the theory in a fun way.

4/5 Enkel och rolig

It was cool! It was quite fun to compare the finished sim with how it was in the beginning.

Lab 1 was not hard to understand and pass. The coding part was not that difficult and after taking some time to think about the instructions, the lab got pretty clear.

ja den var intressant, vettigt med en del färdig kod att sätta sig in i så man ej står där helt utan något att bygga från.

Kul och jag lärde mig väldigt mycket!

Den var bra och lätt att förstå hur man skulle göra. Man lärde sig en del från den.

Väldigt intressant, 4/5

Den var allmänt bra

Lab 1 var bra, behöver nog inte förändras.

Not challenging enough.

20 (24)

Hur betygsätter du labbuppgift 2? Kommentarer?

Hur betygsätter du labbuppgift 2? Kommentarer?

Som jag skrev ovan tycker jag att havsdelen var lite väl simpel. Andra delen med repet var dock bra

Bra

Hade varit bättre om man fick skriva lite mer egen kod i denna labb. Kändes som man mest ändrade värden på variabler

As previously mentioned this labs instructions were ambiguous. Even though the lab content itself was good.

4/5. Some questions were formatted in a peculiar way, making them hard to understand.

3/5. Teorin var intressant men vissa frågeställningar var oklara så att man behövde göra antaganden för att kunna besvara frågorna. Dessutom så hade Rope delen en bugg som inte uppmärksammats tillräckligt och man behövde fixa den själv.

Intressant men vore najs om materialet var uppdaterat

Lite väl omständigt kanske. Jag måste också påstå att jag inte riktigt fattade grejen med hur simulationen av havet funkade. Det kändes lite som att man hoppade runt mellan fyra olika koncept i labben.

Ganska bred och lite svårt att lidta ut vad som förväntades av en, men ganska bra annars

It's a fun experimental lab, for me it felt a bit tedious getting the parameters "just right", but other than that I liked it.

3/5 Lite svårt att tolka frågorna till part 1 men annars bra!

Good. Many of the questions/tasks was a bit confusing. For some, it felt like you wanted an answer based on some equation that existed, but after searing for some time I decided to just do some reasonable guesses (like when we were supposed to give a value of the viscosity of the water+oil). Maybe we were supposed to know that reasonable guesses was what we were supposed to do, but a small comment at the start of the lab spec that clarified that "if you can't find a way to calculate something, make a well-founded guess" or something.

For some reason I would also like the ocean and the rope parts to be separate labs, mostly because they felt so widely different.

I enjoyed the second part more as it included more coding. I think that the first part was interesting, however it felt like we just changed settings in the inspector and took screenshots which was not that fun in my opinion. Lab instructions were clear and easy to understand.

den var svårare, men extra lärorik.

Väldigt stor och spretig, många uppgifter som inte kändes som att de hängde ihop på något tydligt sätt. Sen gillade jag generellt inte hur de var formulerade (med en sammanfattning av vad som skulle göras i hela labben i första stycket och resten av instruktionerna sen), utan det gjorde mig stressad eftersom jag tolkade första stycket (sammanfattningen) som det jag skulle börja med att göra. Det gjorde i sin tur att jag fastnade och blev frustrerad.

Kul och jag lärde mig väldigt mycket!

Första delen av labben var ganska kämpig att förstå då den var lite för teoretisk och tog upp frågor som man inte hade hållit på sedan gymnasiet. Andra delen var enklare att förstå och man lärde sig mer.

Rätt tråkigt att bara sitta och ändra variabler 2/5.

Hade flera problem med dels att det var gammal version av Unity, vilket skapade problem med t.ex. .js filer som inte stöds längre. Även några instruktioner som var otydliga

Lab 2 kan bli lite förvirrande då kraven kan är lite oklara.

20 (25)



Hur betygsätter du labbuppgift 3? Kommentarer?

Hur betygsätter du labbuppgift 3? Kommentarer?

Intressant att försöka förstå allt om flöde, var utmanande

Bra

Less interesting from a software development perspective, but I see the need for a more theoretical science approach.

3/5. Not a hard lab to complete, but the math involved was quite high-level making it a bit hard to understand.

3/5. Labben var lite olik de tidigare labbarna vilket inte är dåligt men om man ska använda ett nytt verktyg (FEniCS) i mitten av kursen så borde man få en bra tutorial på hur man använder det. Det är uppskattat att man bara behövde besvara en fråga för att bli godkänd och frågan var inte svår, ändå tycker jag att jag inte lärt mig så mycket när det gäller själva verktyget. Teorin däremot har jag förstått tack vare föreläsningen och lite googlande.

Alldeles för enkel. Gick att göra på 10min och kände mig inte alls utmanad

Den här labben var alldeles för enkel. Att man bara behövde ändra typ en siffra i kod man fick och köra den fyra gånger tycker jag inte är en bra labb. Jag tror typ att jag gjorde färdigt den på en halvtimme typ.

Ganska mycket kod och info som man inte behövde sätta sig in i för att klara uppgiften gjord att den kändes lite smal.

We just did the first assignment in it, which made the lab feel a bit unfulfilling. But perhaps it makes more sense if you do a bit more on it.

3/5 Enkel men kan lätt bli komplicerad. Ett svårt ämne man kastades in till.

THIS WAS SO COOL! I spent so much time playing around with the simulation! During the lectures, I was a bit worried that the lab was going to be super hard, so it was nice that the code was given.

Perhaps the easiest one to pass (just change 1 variable)? It's great from a student's point of view to have easy to pass labs, however, if there could be a way to make the student make more work without making the lab super complicated I think that would be very good.

rolig och skönt med färre uppgifter jämfört med de andra.

Väldigt liten i jämförelse med 2an. Framförallt om man bara ville ha godkänt.

Kändes inte genomtänkt. Vi hade även mycket teori från föreläsningarna som inte användes i kursen alls, antar nu i efterhand att e var riktade till labb 3 men vet faktiskt fortfarande inte.

För oförståelig tyvärr. Hela grejen med flödessimulationer kändes onödigt komplicerad med alla formler som man egentligen inte förstod sig på. Labben var lätt att göra men jag fattade egentligen inte så mycket varför resultatet blev som den blev i simuleringen i labben.

Intressant i teorin, men väldigt simpel att utföra, tog max 15 min för hela labben. 3/5

I stort sett bra, inga andra kommentarer

Labb 3 var bra behöver inte förändras.

There should be more than one mandatory exercise.

20 (24)

Hur betygsätter du projektet? Kommentarer?

Hur betygsätter du projektet? Kommentarer?

Kul då man fick göra vad man ville, bästa momentet i kursen

Bra

Great

5/5. Very fun and I learned a lot since we had a lot of freedom.

4/5. Det finns inte så mycket att kritisera förutom att jag som jobbade individuellt kände att tiden inte riktigt var tillräcklig. Detta kan dock mycket möjligt vara ett personligt problem.

Väldigt roligt upplägg med projektet och man fick göra bra reflektioner. Bästa med kursen

Projektet var kul. Jag tycker också att det är bra att betyget sätts utifrån projektet och inte från tentan.

Öppet och roligt. Lite svårt att få koll på deadlines

I really liked being able to pick your own assignment!

5/5 Väldigt roligt att implementera något man själv tyckte var intressant

The project was the highlight of the course. I love converting theory into practice, so this was really great.

The project was fun as I got to simulate something that I enjoy playing on my free time (football/soccer). However I think that we lacked some knowledge in Unity which made us put more time than I believe necessary on setting up the scene. With more introductory work/labs on unity, I believe that we could save more time and also put more effort on implementing the physics simulation.

Nice att kunna lägga den på nivå som passade en bäst.

Kul och jag lärde mig väldigt mycket! Upplägget var väldigt bra

Helt okej, kändes som att man fick mycket frihet att göra det man ville. Däremot fick man inte så mycket hjälp när man fastnade med något.

Helt klart den roligaste delen av kursen, här kunde du gå djupare på det som var mest intressant och lägga så mycket tid du ville. 5/5

Det var bra. Dock var det något oklart med hur en fick feedback på specifikationen

Detta var också bra

Great. I really appreciated the possibility to adapt the project to my ambition level.

Extremt roligt att arbeta med projekt. 10/10

20 (23)



RESPONSE DATA

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

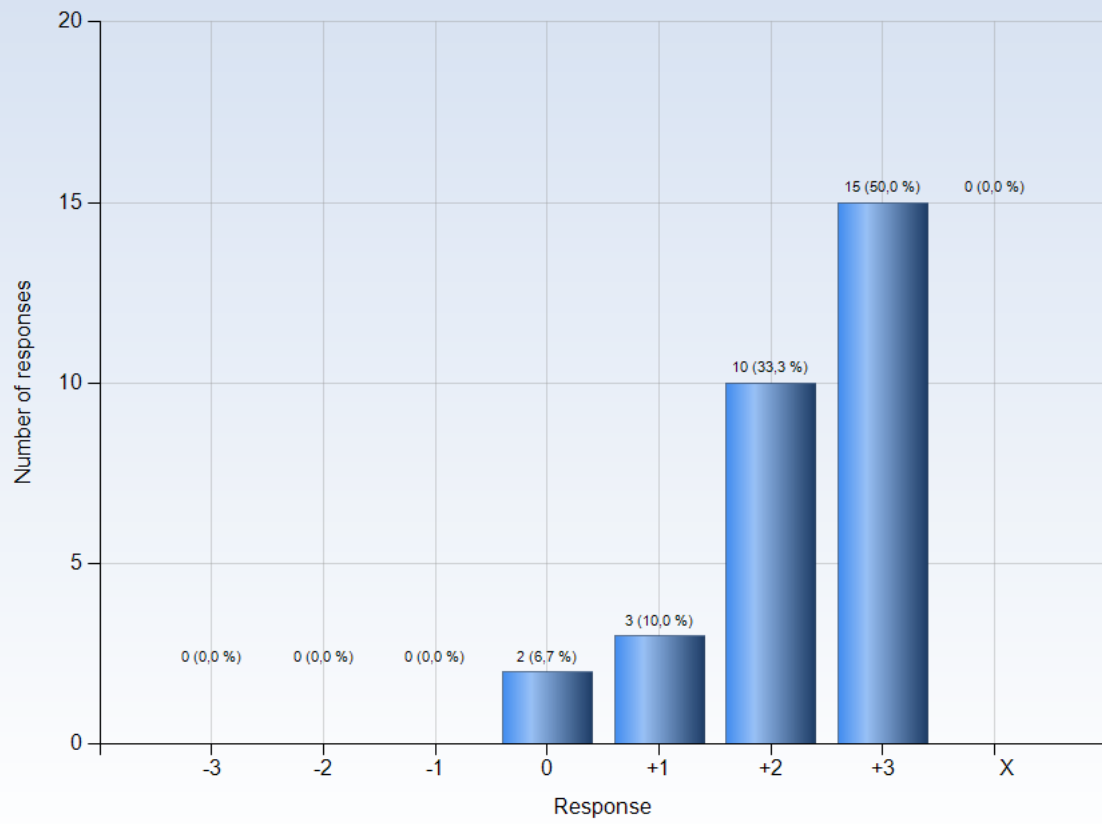
-3 = No, I strongly disagree with the statement

0 = I am neutral to the statement

+3 = Yes, I strongly agree with the statement

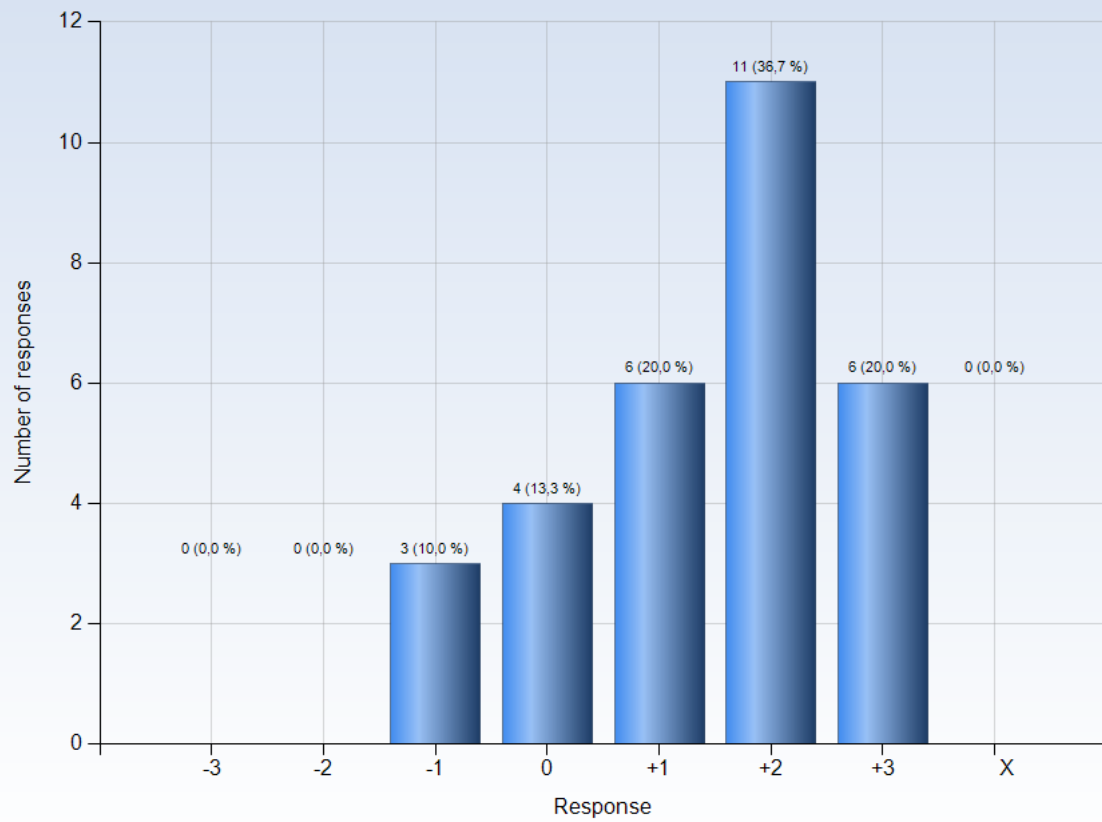
X = I decline to take a position on the statement

1. I worked with interesting issues



Comments

4. The course was challenging in a stimulating way



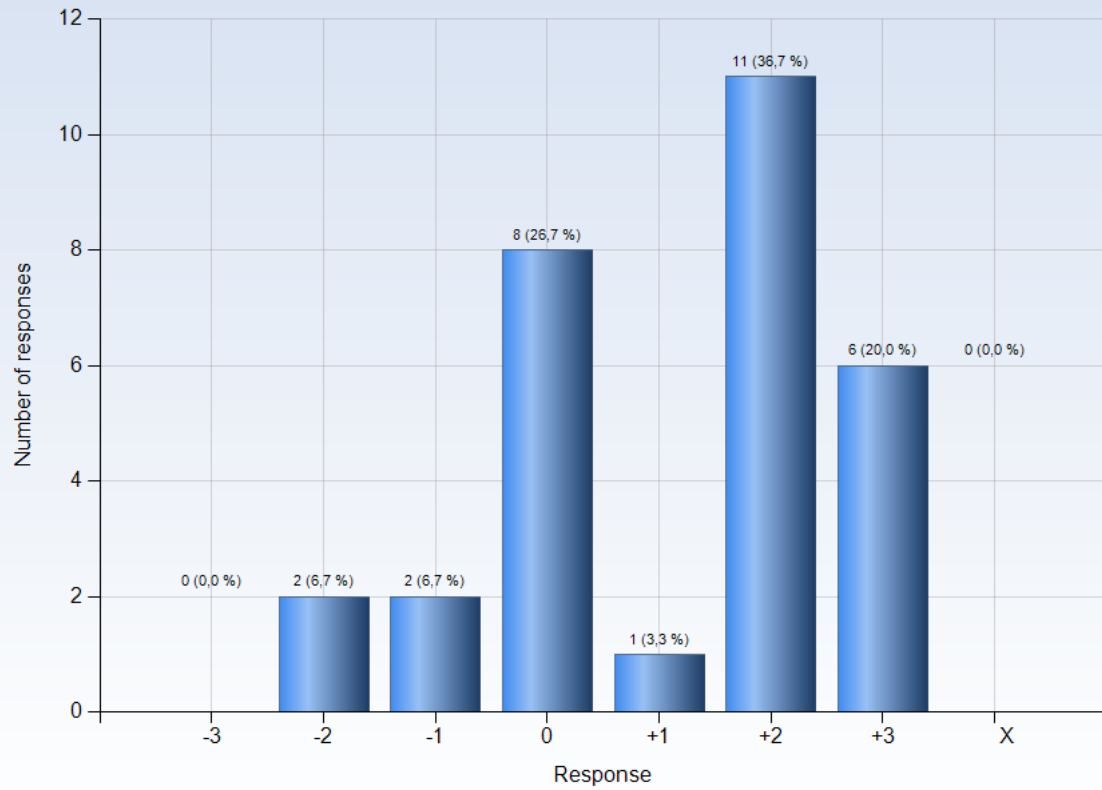
Comments

Comments (My response was: +1)

Var egentligen inte så svårt men kul ändå!

I felt like passing the labs were not very challenging. Even though I learned a lot . For me, as soon as I understood what the tasks were after, the coding didn't take long.

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

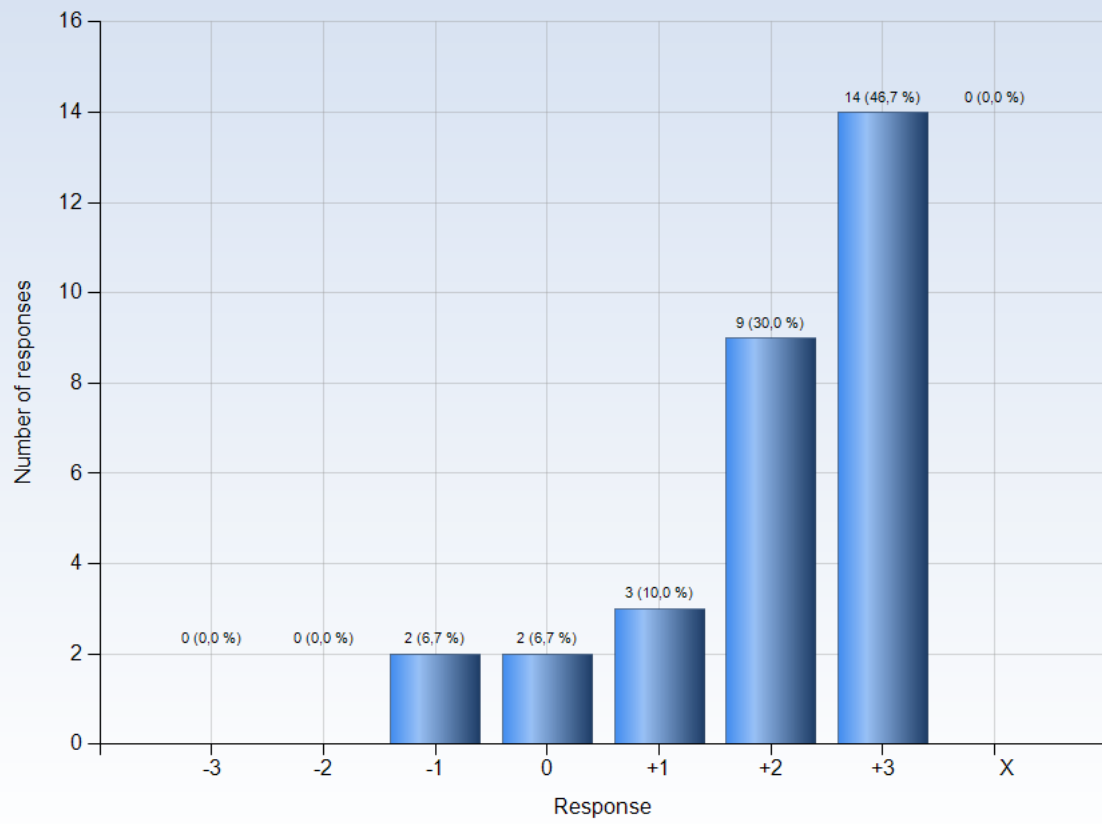


Comments

Comments (My response was: -2)

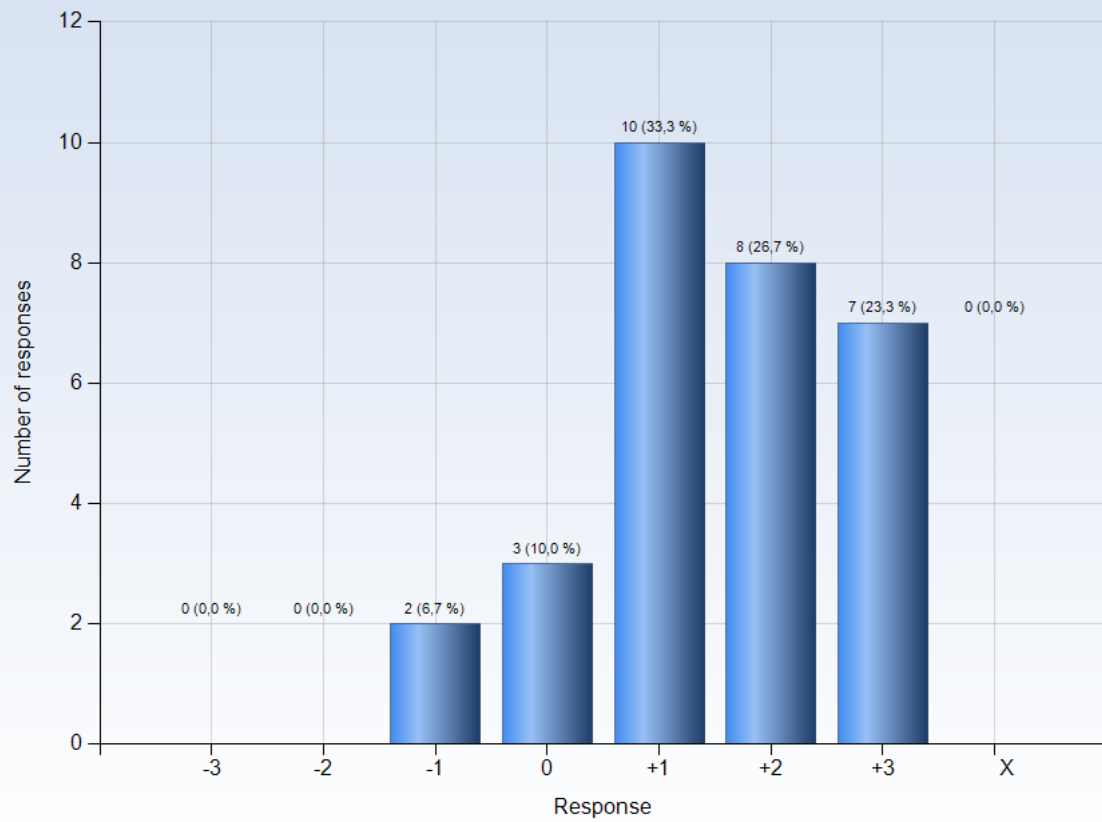
Har ingen aning om vad lärandemålen är.

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



Comments

11. Understanding of key concepts had high priority

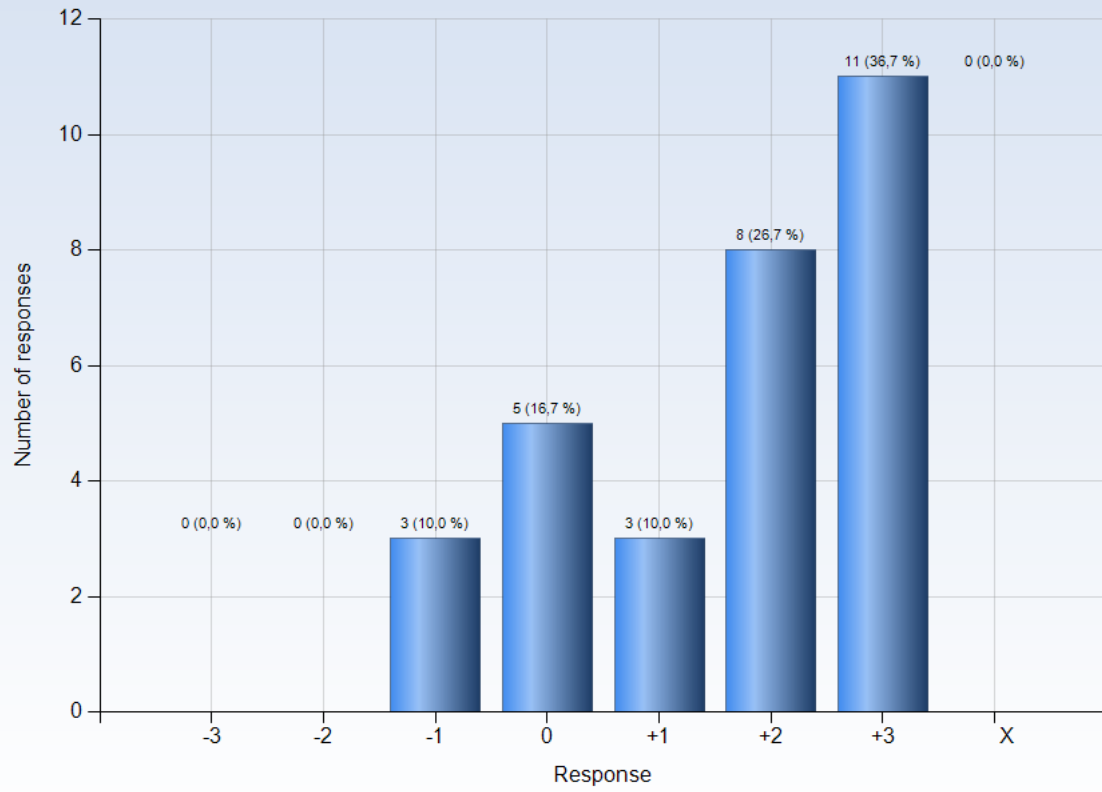


Comments

Comments (My response was: +3)

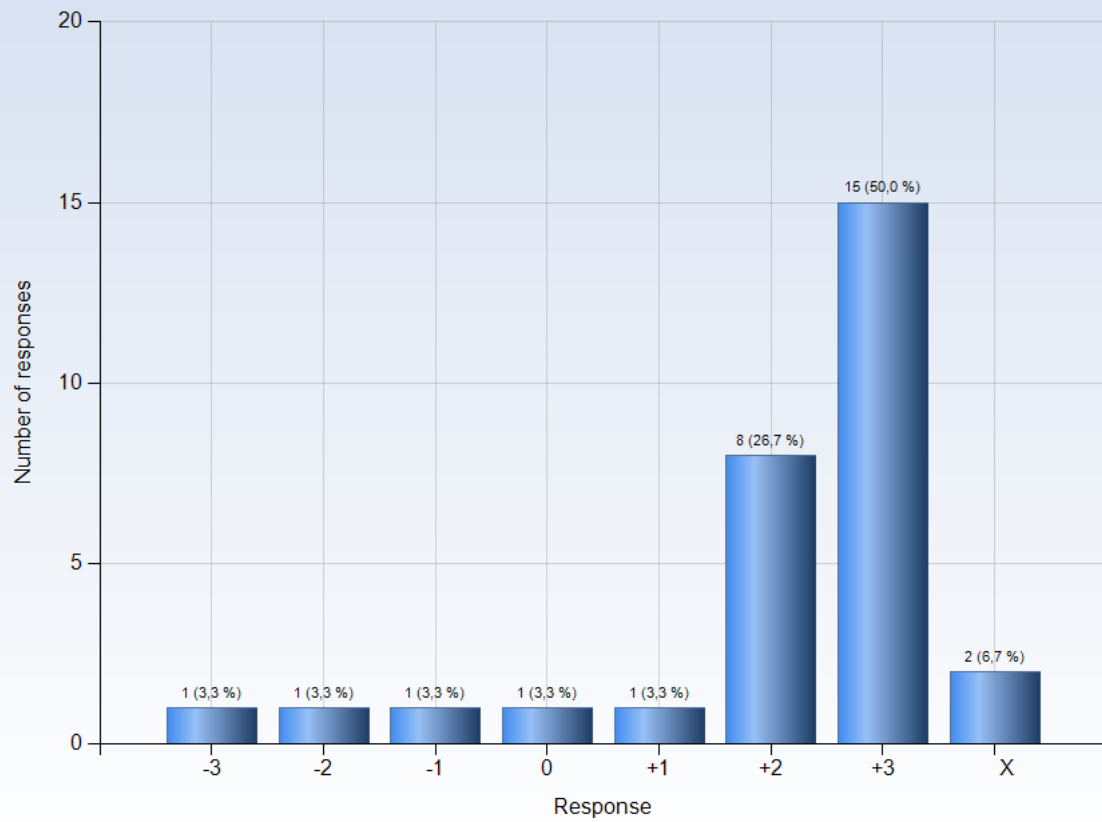
I felt that the course had a great focus and it was not hard for me to keep along

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



Comments

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

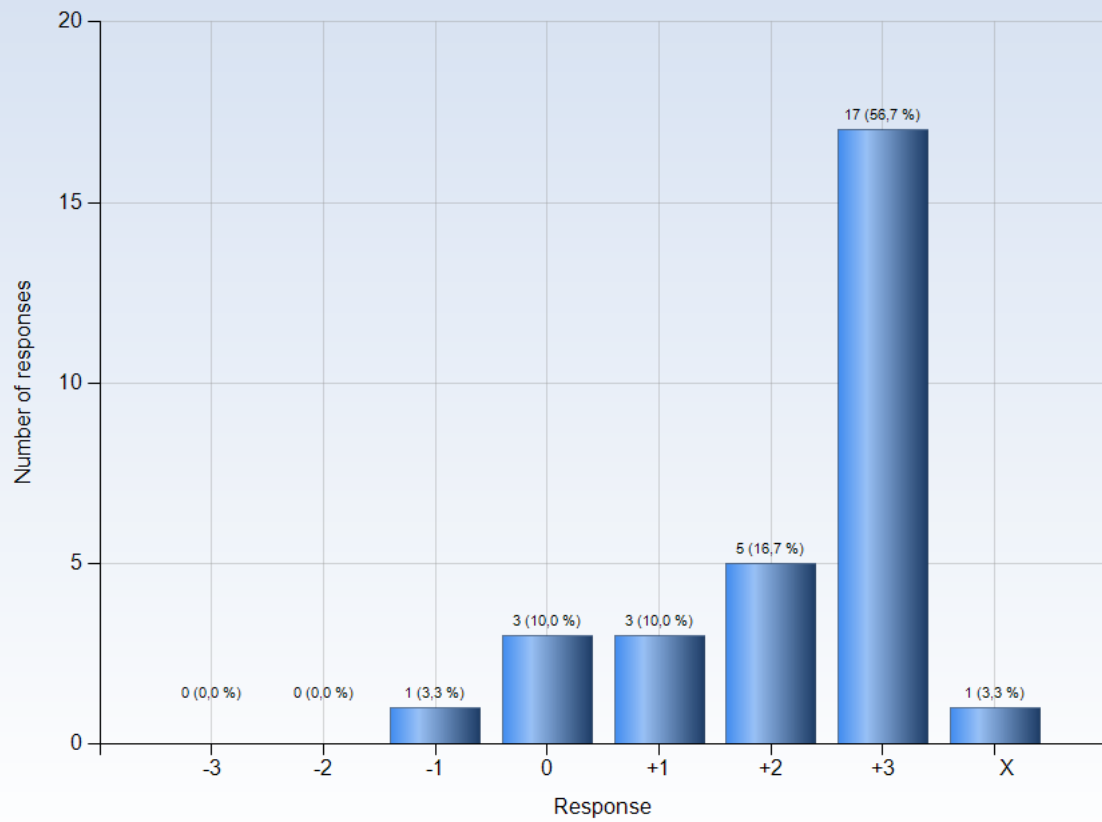


Comments

Comments (My response was: +3)

mycket bra assar som stöttade med svar på frågor

16. The assessment on the course was fair and honest

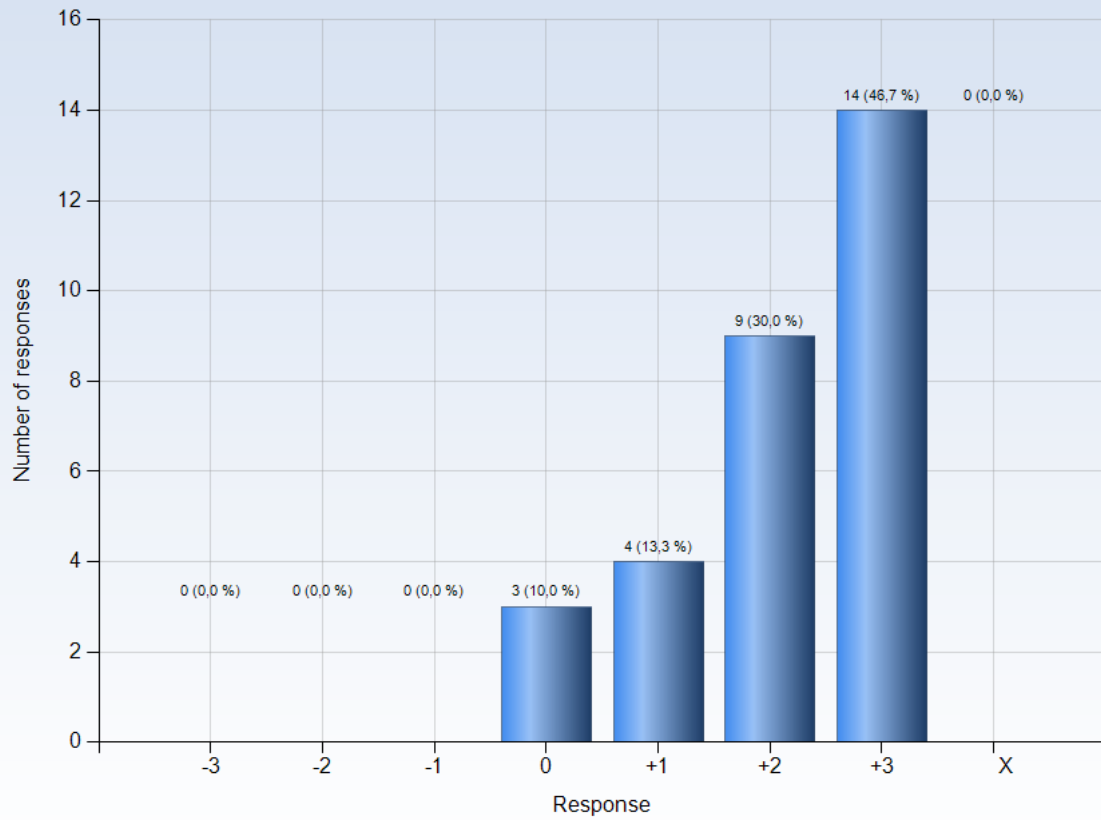


Comments

Comments (My response was: -1)

Honestly, exam seemed maybe a bit too easy

17. My background knowledge was sufficient to follow the course



Comments

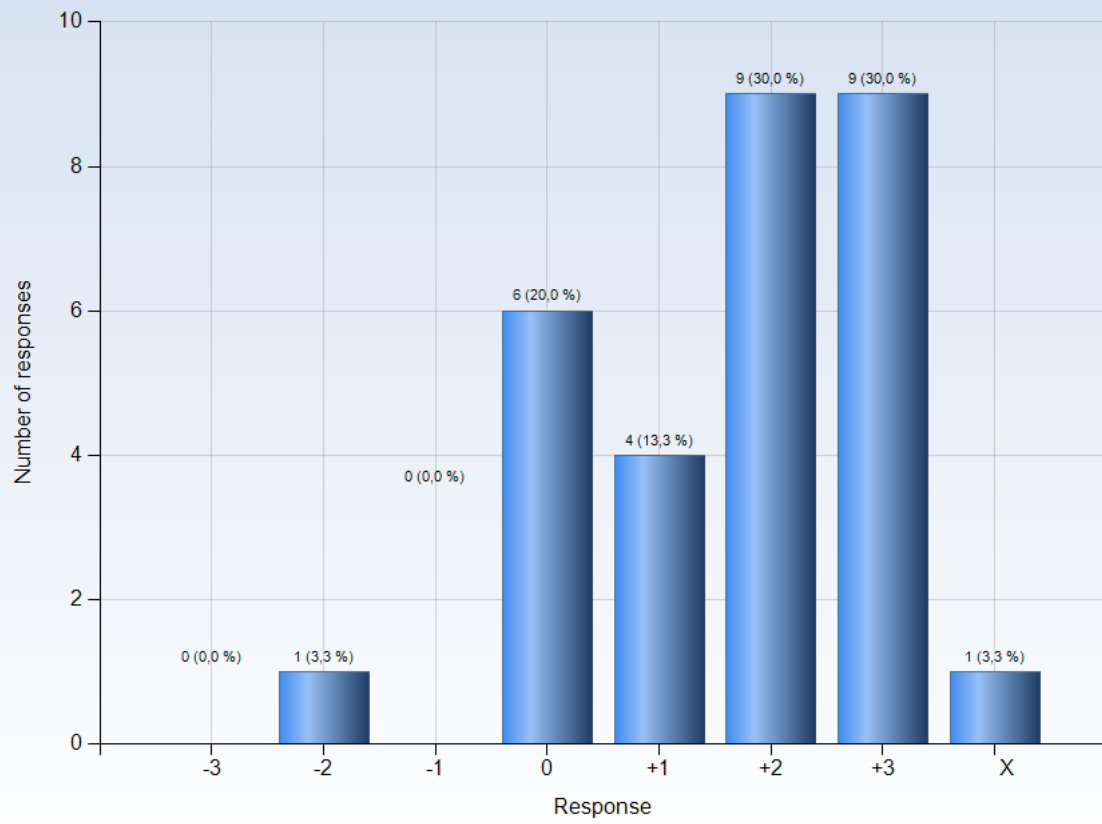
Comments (My response was: +1)

I believe that it would be more fun if we could work more with unity (setting up scenes etc) and also a bit more coding. Even if the coding part is hard, I believe that by perhaps have more coding in the labs, we would learn more for future projects and become more independent

Comments (My response was: +2)

Jag kände mig lite ringrostig på hur man löser diffekvationer numeriskt.

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

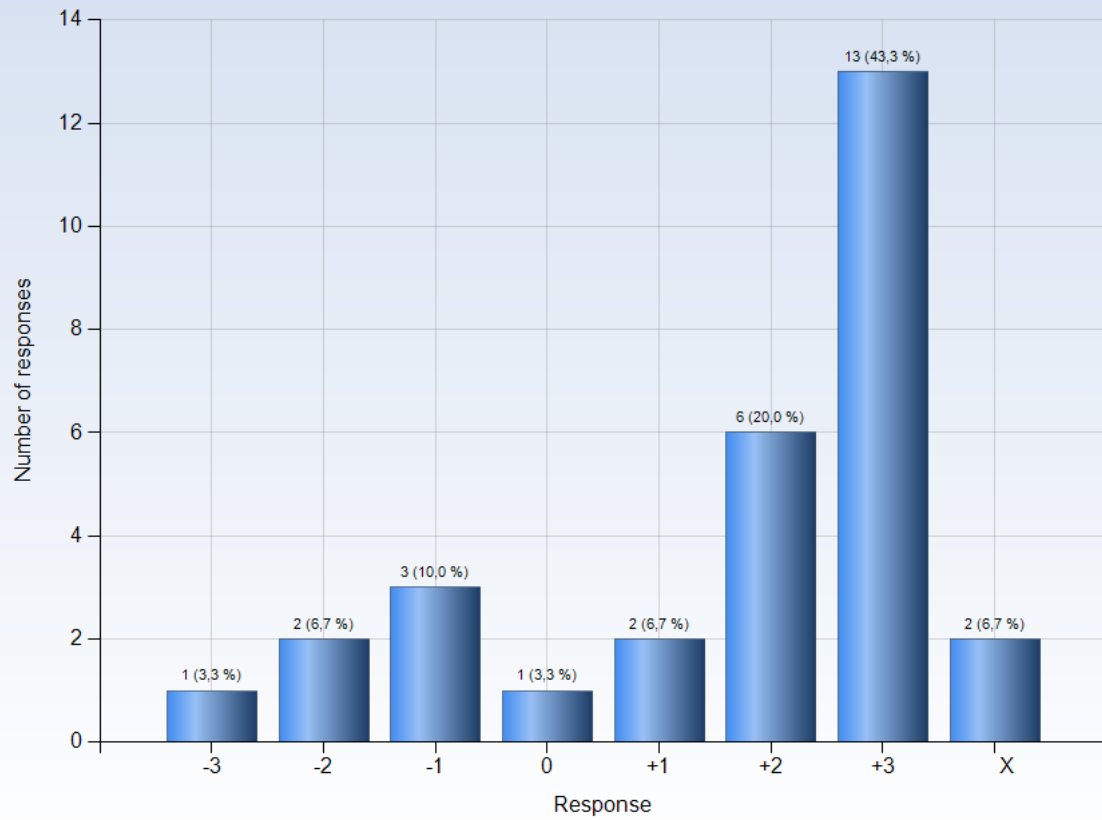


Comments

Comments (My response was: X)

Not sure if I understood this question correctly

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



Comments

Comments (My response was: -3)

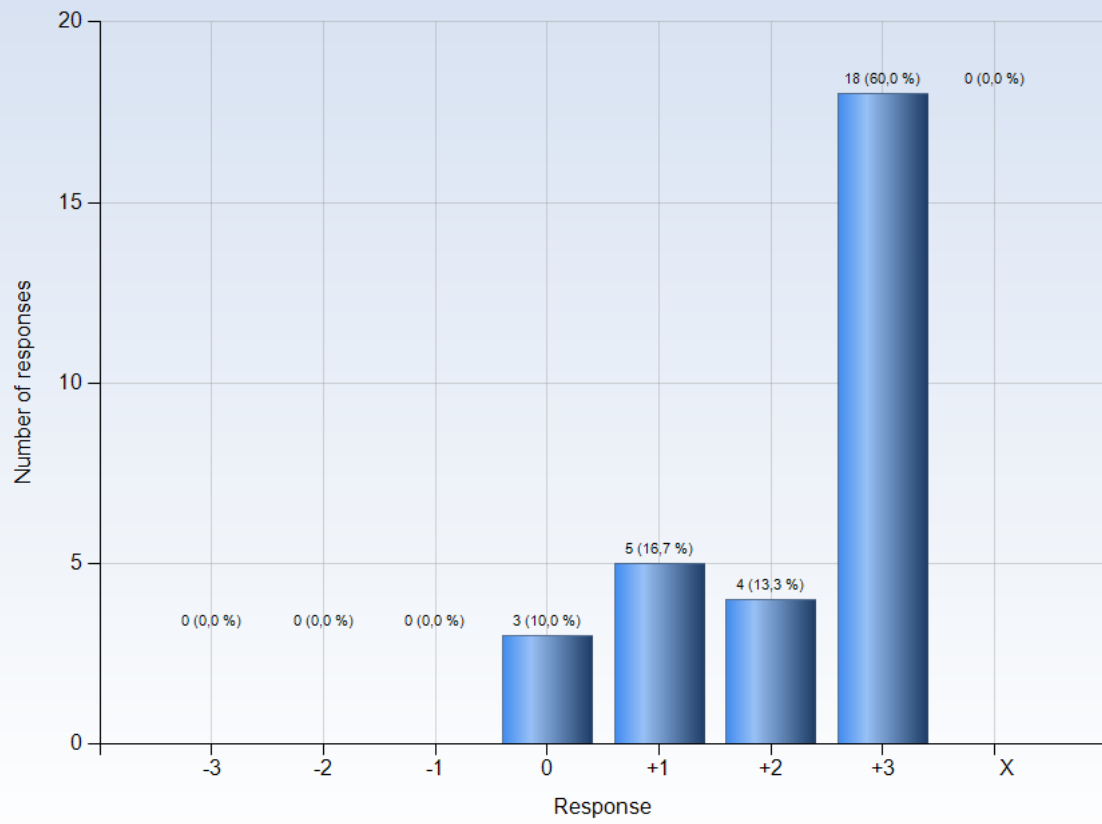
Väldigt lite interaktion iom distansstudier

Comments (My response was: -1)

Hade nog varit annorlunda om ej distans

Besides from working with labs, I felt that it was hard to talk with others. Perhaps this is not a course problem but rather the effect of covid and distance learning.

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



Comments