DD2434 HT 2021

Machine Learning, Advanced Course 7.5 credits

DD2434 is taught by Jens Lagergren and Aristides Gionis. The material include fundamental dimensionality reduction techniques, graph based machine learning methodologies, and a large part is devoted to the probabilistic approach to machine learning. The latter part covers probabilistic modelling and maximum likelihood as well as Bayesian inference methods such as expectation maximisation and variational inference.

The course has been given mostly on-line during the last two years, but lecture hall interaction will hopefully be possible during HT 2022. However, the on-line material developed during the pandemic period will be used to have a higher degree of flipped classroom in the course. The course is partly a victim of the popularity of of machine learning. That is, there is a large number of students that want to follow an advanced machine learning course but do not appreciate the theoretical nature of the advanced machine learning topics. We believe that this problem largely will be resolved when we can expect the students to have passed the new course DD1420 Foundations of Machine Learning, 7.5 credits. Today it is evident that the better prepared students, e.g., international exchange students, have a higher appreciation for the course and perform better. Also, many students consider the examination and the project to provide insights and to be rewarding, but other students are not used to solving problem with pen and paper and also do not consider it to be a motivated part of a master level course in machine learning.

Several issues have been identified from earlier years and novel approaches to handled them will be tried during HT 2022:

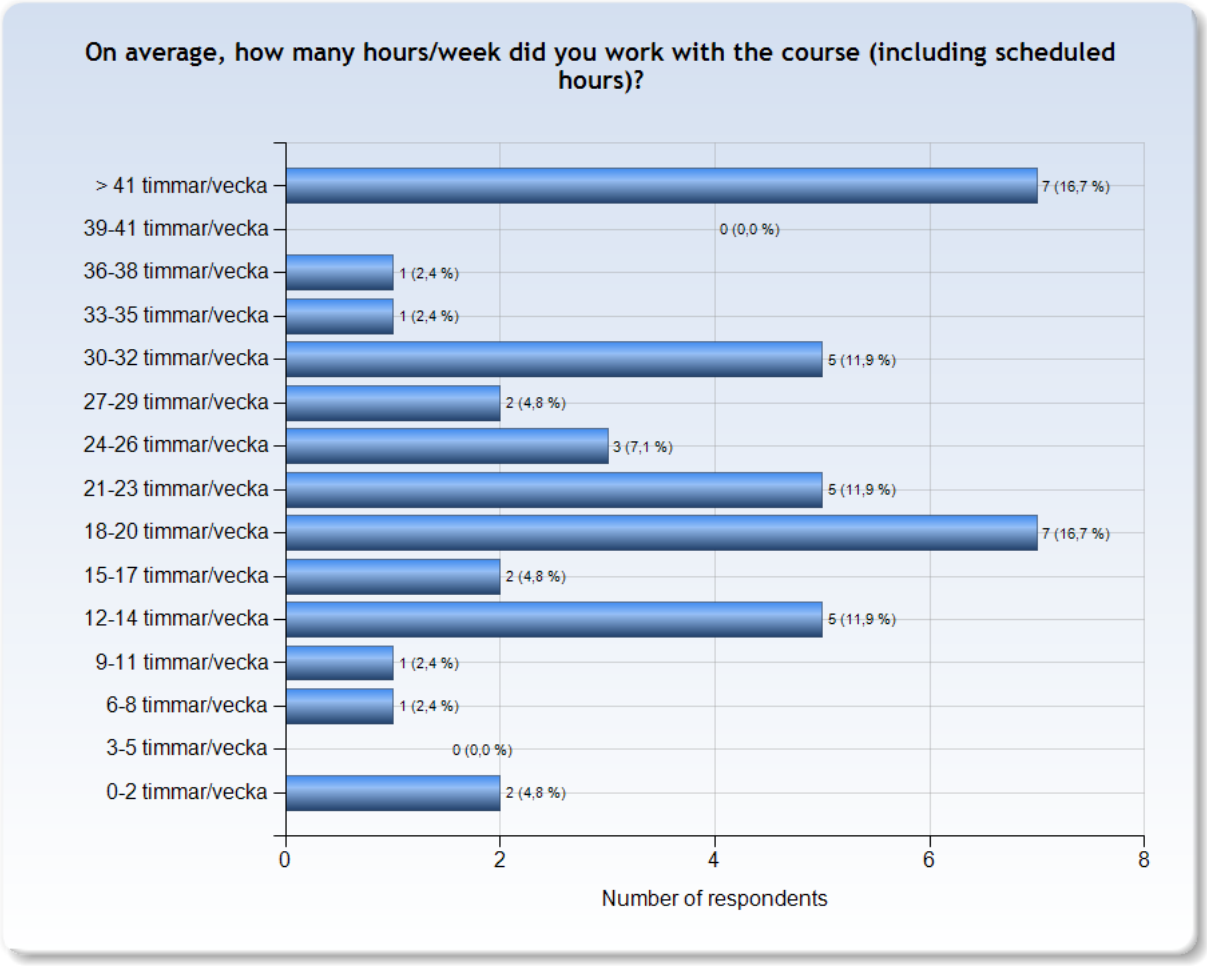
1. The workload varies during the course. This will be countered by restructuring the assignments and also providing both assignments and projects at an earlier stage of the course.
2. The students desire to have a larger degree of collaborative moments. We will attempt to identify more implementation oriented parts of the examination that can be given as collaborative tasks.
3. In some videos the text have been smaller than what is desirable. These videos have been remade and lecture hall teaching will be used to introduce the material as well as follow up on the students understanding of it.
4. The examination has been based on the thresholding method recommended in some of the pedagogical courses at KTH, i.e., only those students with a grade above a certain threshold can proceed to the harder parts of the examination. This has led to frustration and stress among the students. We will simply abandon this system and allow all student to attempt all parts of the examination.
5. Many students start because of the hype of machine learning but do not finish the course and these may be diluting our Learning Experience Questionnaire. We will try to separate the two groups.

This evaluation is based on a questionnaire for HT 2020, which was not repeated 2021 due to the temporary conditions induced bye the Covid-19 pandemic.

DD2434 - 2021-03-22

Antal respondenter: 242
Antal svar: 43
Svarsfrekvens: 17,77 %

ESTIMATED WORKLOAD



Comments

Comments (I worked: 0-2 timmar/vecka)
I gave up on the course entirely and left after some time, as no teaching was taking place.

Comments (I worked: 12-14 timmar/vecka)
The work load seemed heavy at times but never excessive, except perhaps during the last week with only assignment 3 remaining, but I'd blame that more on poor time management for the project which was handed in the previous week to that.
I spent most of my time on the homework because it's really difficult for me.

Comments (I worked: 15-17 timmar/vecka)
I worked in evenings since I have a day job. It took all of my free time, including week-ends, as well as a few days off, to get the grade I wanted in this course. I don't think that's a bad thing, but students should be warned that it is very intensive, and that taking it along with other courses can be risky.

Comments (I worked: 18-20 timmar/vecka)
I wrote 18-20 because I usually spend close to 0 on courses as I don't tend to study ever. However looking it from the average student perspective and the rest of the courses I take, 20 hours would probably be the LEAST one needs.
The lecture notes were unacceptable, only videos were helpfull and the discriptions for the assignment were also bad so you should spent a lot of hours just to understand from where you should find the theory and how to implement the assignment. For Aris course things were better and lectures were helpful

Comments (I worked: 21-23 timmar/vecka)
The majority of time in the course is spent on understanding the material. The actual workload of the assignments is not that much, but it takes a long time to understand how to solve the questions.
Course workload excedes the planned 7.5 ects. It's worth it but 7.5 ects might give a wrong impression.

Comments (I worked: 24-26 timmar/vecka)
Reasonable hours spent on the course, however this was due to accepting the fact that it's not worth working 50 hours a week for a better grade in this course.
A bit too much in January
Way more than expected

Comments (I worked: 30-32 timmar/vecka)
I usually do coursework quite efficiently because I'm an experienced programmer. This course was insanely intense, I had trouble working alongside my studies.
The group project was fun and I learned a lot, but it was very demanding time-wise. I would suggest having 2 individual assignments instead of 3 since working with the group project and an individual assignment at the same time was way too demanding.
Very hard individual assignments with unclear objectives and no help
Horrible experience, 80% of my time was dedicated to this course. I worked on it more than 6 hours the 7 days of the week, without any free day.

Comments (I worked: 33-35 timmar/vecka)
There were some huge bumps in workload when working with the course when one had to work with the assignments and project.

Comments (I worked: 36-38 timmar/vecka)
One of the courses with the heaviest workload I've ever encountered.

Comments (I worked: > 41 timmar/vecka)
Since the course was poorly structured, and the professors were not helping much during the lectures, the assignments which were the only work in the course felt so difficult and took up most of the time than studying and understanding the gist of the course content.
Workload is far too high for the credits offered by the course.
This course was very difficult to mix with any other course, it took all the time. I frequently spent 60-80 hours a week on this course, particularly during the project.
The course was very demanding and although there was a slack page, where students could come in contact with the Professors Aris Gkionis and Jens Lagergren as well as the TAs, although the professors answered quickly and with clarity some of the TAs were giving misleading information and had attitude. In both parts the lectures were given digitally (due to COVID-91) in form of prerecorded videos. For Aris' part the material mostly covered the topics required for the Assignment; although the content could be more oriented to Machine Learning (e.g. more coding parts) instead of Linear Algebra. Regarding Jens' part however, the material consisted unreadable handwritten material, while certain (again handwritten) slides files were inconsistent with the video content or blank as this "HMM-FILTERING" document (link: https:/ /www.dropbox.com/sh/e4jxceyglklroiw/AAA4ymQWc_k7nXLMti_Pb0ZEa /Module%207?dl=0&preview=7.3+filtering+blank.pdf&subfolder_nav_tracking=1).

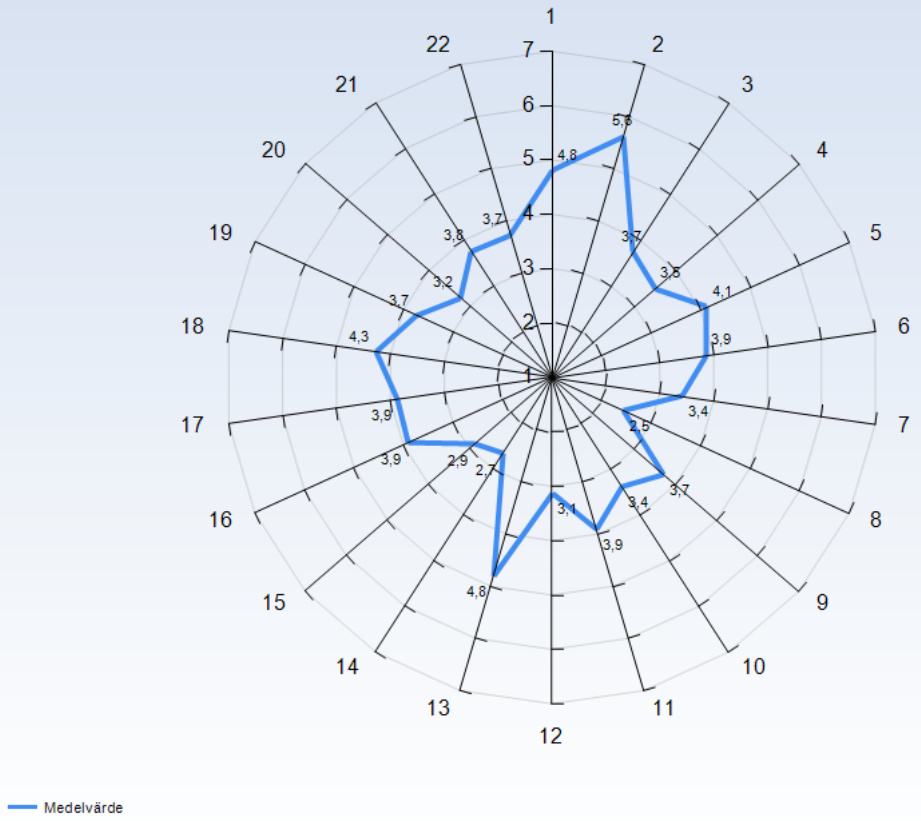
LEARNING EXPERIENCE

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

1 = No, I strongly disagree with the statement
4 = I am neutral to the statement
7 = Yes, I strongly agree with the statement

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

Average response to LEQ statements - all respondents



Medelvärde

KTH Learning Experience Questionnaire v3.1.4

Meaningfulness - emotional level

Stimulating tasks

1. I worked with interesting issues (a)

Exploration and own experience

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

Challenge

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

Belonging

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

Comprehensibility - cognitive level

Clear goals and organization

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

Understanding of subject matter

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

Constructive alignment

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

Feedback and security

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

Manageability - instrumental level

Sufficient background knowledge

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

Time to reflect

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

Variation and participation

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

Collaboration

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

Support

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

Learning factors from the literature that LEQ intends to examine

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Literature

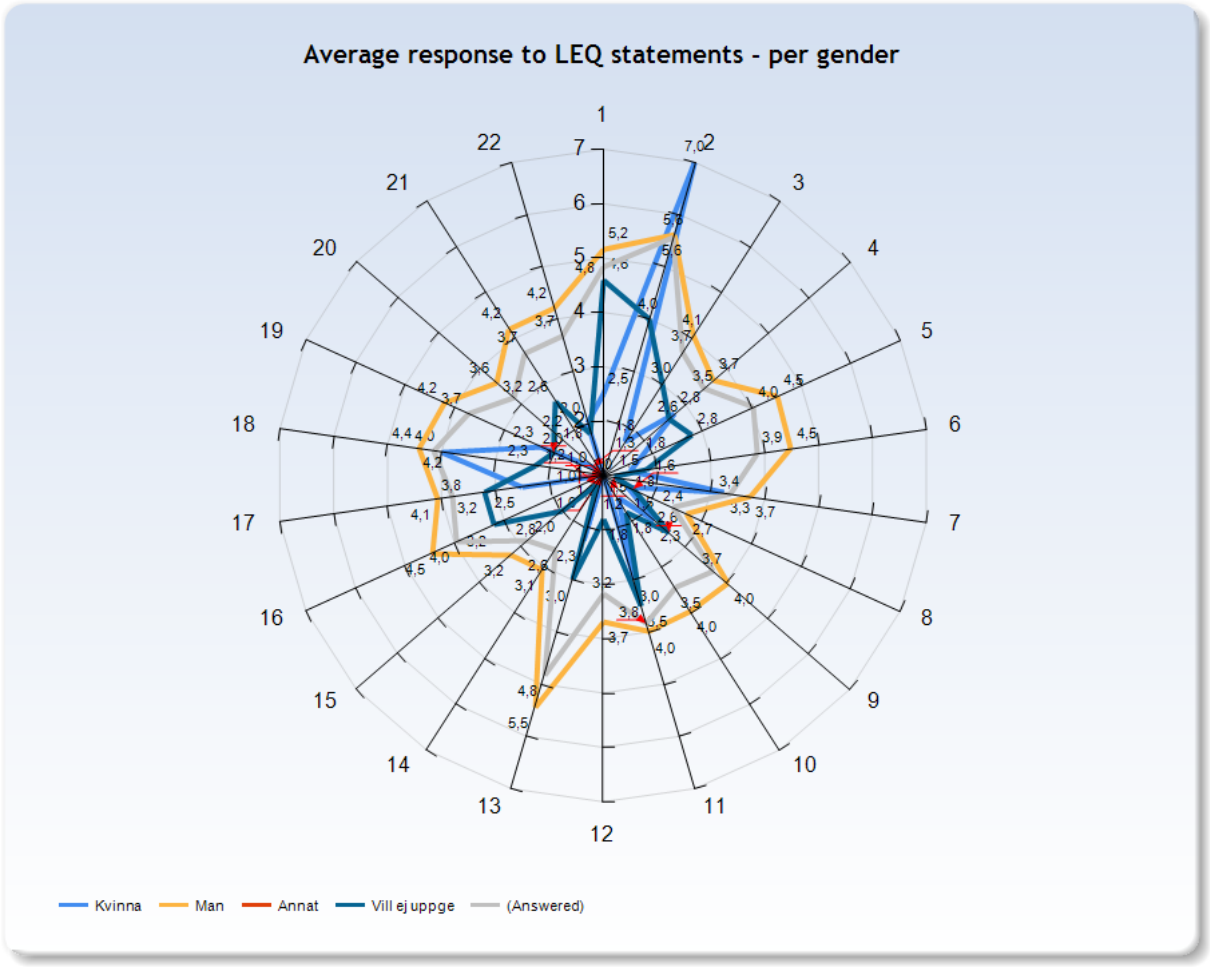
Bain, K. (2004). *What the Best College Teachers Do*, Chapter 5, pp. 98-134. Cambridge: Harvard University Press.

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

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

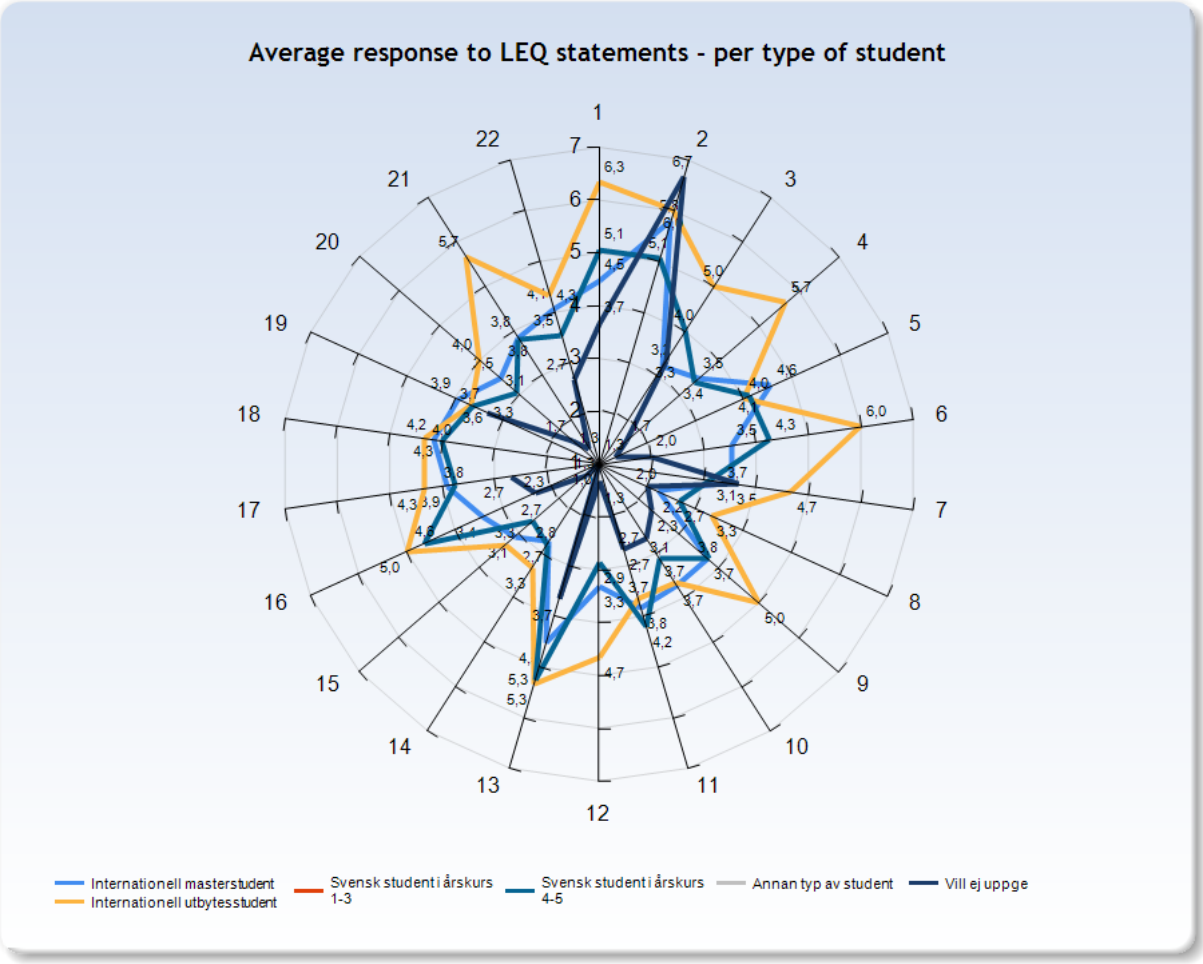
Kember, K. & McNaught, C. (2007). *Enhancing University Teaching: Lessons from Research into Award-Winning Teachers*, Chapter 5, pp. 31-40. Abingdon: Routledge.

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



Comments

Comments (I am: Man)
Nothing to say
My penis didn't help me in this course
The assessment was gender neutral.

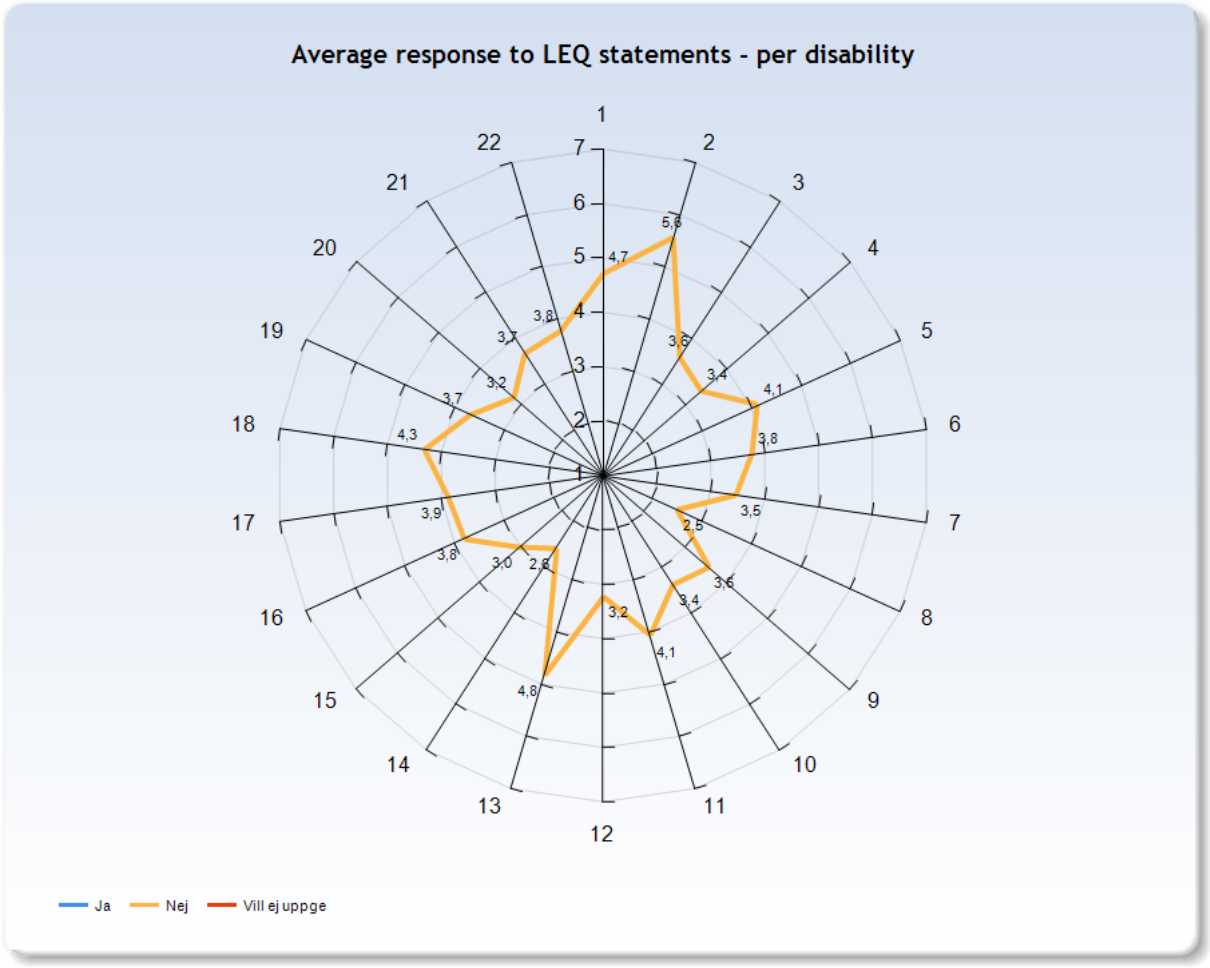


Comments

Comments (I am: Internationell masterstudent)
All things considered I'm quite happy with the course, since my main reason to do an international master's was the scarcity of machine learning programmes in my country, and this type of course covers the topics I wished to study and more.
Picked international master student as I did not get my Bachelors at KTH but did not arrive as an international just for the Master in August as the rest.

Comments (I am: Internationell utbytesstudent)
I was luck to re-take this course during a pandemic, when everything was online. But I couldn't follow most help/exercise sessions, since they were not recorded. This is an issue for students with a job. Publishing all Zoom sessions would be a great help.

Comments (I am: Svensk student i årskurs 4-5)
Nothing to add
Considered dropping out of KTH as I was scared that this was what to expect from Master's level courses - no education, just a paper.
Engineering physics in applied math master



Comments

Comments (My response was: Ja)

I'm diagnosed with ADHD. I don't think this caused any problems in this course specifically, although publishing more material (like help session recordings) would also be of help here.

GENERAL QUESTIONS

What was the best aspect of the course?

What was the best aspect of the course? (I worked: 0-2 timmar/vecka)
N/A
That the coding parts of the assignments were pretty easy if you had some experience from before.

What was the best aspect of the course? (I worked: 9-11 timmar/vecka)
No

What was the best aspect of the course? (I worked: 12-14 timmar/vecka)
The TAs are very nice.
The topics were rich, relevant and explored in a way rigorous enough that really made me deepen my knowledge of them. I also thought the help sessions were helpful and specially the prepared examples made most things quite clear.
The fact that it covers a breadth of relevant topics with a decent amount of depth. While the assignments were hard, they were also extremely rewarding. I also enjoyed the fact that the course has high standards, you really felt like you had to push yourself to get results which is sometimes not the case at some courses at KTH especially some DD courses.
The best part of this course is the project. It gives us lots of time to explore the cutting-edge algorithms the community are using. It's really interesting for me.

What was the best aspect of the course? (I worked: 15-17 timmar/vecka)
Professor Gionis' half of the course - it had a few hiccups in communication (understandable when conducting the course for the first time), but overall was very well organized, the content was readily available, the teacher always ready to help - great experience and very enjoyable. Following the lectures was easy, the content was well laid out and thoroughly explained.
It was more challenging than almost any course I've taken in any university.

What was the best aspect of the course? (I worked: 18-20 timmar/vecka)
I study a lot of research and these algorithms 'come up a lot' so it's very helpful and expected to be very useful.
The material was highly interesting, and seems to me to be super relevant.
None. I really wanted to take it because it's basically a math course and I personally think one should be comfortable in that if taking a major in Machine Learning. But honestly, none. I hated it.
Studying interesting content like probabilistic graphical models and PCA
We actually implement Probabilistic Graphical Models in practise at least for those who understand the concept of the course

What was the best aspect of the course? (I worked: 21-23 timmar/vecka)
I found the final project to be really interesting.
formula derivation step by step in the lecture the discussion in slack
The content which the first assignment focused on was interesting and explained well (e.g., SVD, PCA, MDS, Isomap)
Embracing modern frameworks for dl etc.
The best aspect of the course was the final project as it helped me to understand a lot of concepts from the course which weren't quite clear until then. I believe working together with other people and working through each other's doubts helped considerably.

What was the best aspect of the course? (I worked: 24-26 timmar/vecka)
Clear grading requirements and the big project.
Project
The slack channels and the feedback

What was the best aspect of the course? (I worked: 27-29 timmar/vecka)
- Really liked the setting with recorded lectures and Q&A-session! - Really good with excercises. It would have been even more helpful if the notation had been the same as in the lectures, now it was quite confusing. - I felt that the teachers and TA's in the course put effort into giving feedback and answering questions. Really greatful for that!

What was the best aspect of the course? (I worked: 30-32 timmar/vecka)
The guest lectures
The group project was engaging and interesting. It was fun to work with others and to work with methods based on research papers.
Nothing
Project
The course content was interesting

What was the best aspect of the course? (I worked: 33-35 timmar/vecka)
TAs being available and helping with questions. It was also fun to work with the project as I had nice group members

What was the best aspect of the course? (I worked: > 41 timmar/vecka)
Nothing!!!
The only good thing about the course is that the material being learnt is interesting.
The kind and compassionate TAs
Nothing
The very interesting group projects we had to choose from.
The assignments were interesting although demanding and covered the material in a challenging way; however grading criteria made the course not challenging in general. Slack enabled direct communication with the professors who were eager to help as well as some of the TAs.

What would you suggest to improve?

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

The course needs to be remade from the ground up.

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

The teaching patterns and the feedback of assignments. The instructor is not helpful at all.

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

Jens' PPT is not organized very well.

I covered most of this above and other sections, but it would have been nice to have a bit more help available during the last week (but I won't omit to mention that Oskar was very attentive and helpful on Slack regarding the VI questions.

Since there are two sets of videos and presentation material (Jens & Aristedes), it was a bit overwhelming at times and hard to understand where to start or where to go next. Having a "lecture-plan" might help, also specifying which modules are covered in each assignment. Since most of us are following other courses, sometimes you fall behind and its hard to understand what modules to prioritise to be able to solve the assignment on time.

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

Professor Lagergren's half of the course. I can't really express the frustration with the course in civil words, so I will just stop at saying it was horrible. The materials were strewn over three different platforms, to find the latest information - or even as much as the latest version of an assignment - you had to sieve through comments and threads in slack, as well as canvas announcements, assignments and files, usually still ending up with the wrong information. At the start of the course the lecturer appeared patient and willing to help, but within a couple weeks all of that was gone. He treated students quite rudely, the TAs had to carry the weight and clean up any messes he left behind with untactital comments or imprecise information.
The assignments were bad. There is such a thing as difficult tasks, assignments that require you to understand what you are doing in order to be solved, ones that encourage learning... But the ones given by Lagergren were just not that. I know that the lecturer will immediately use the excuse that some students still managed to solve everything, so I shouldn't whine about not being able to deliver. And I would agree if I was one of few who struggled, but there's surely something off when a single problem from an assignment attracts hundreds of messages of discussion, or when an assignment description undergoes four revisions. And the grading was frustrating to no end! Receiving partial points for a problem was unheard of - so much as a typo or incorrect numerical answer were enough to fail a student. Displaying understanding of a problem was not sufficient if one didn't provide some undetermined formula or exact answer. Attempting to answer a question fell flat. What usually happens in such cases is that students get proper feedback on their shortcomings, receive assistance in resolving the issues or coming to that conclusion that they did not manage. But not in this course. Assignment feedback consisted of no more than a handful of words - if you were lucky. The ground was laid to fail students on a mass scale with little thought. The only thing left for the mass of unsatisfied students was to spam the TAs, to eventually just be ignored altogether and be told by the lecturer that he couldn't understand why we were frustrated. And with all of this, we were continuously informed that there will be no opportunity for plussa, just in case anyone wanted to foolishly foster the idea of improving their grade at a later time, when they finally understand what is wanted of them.
With all of that said, no excuse of "it's a weird time", "we had to adjust to the new way of working", "this is an unusual situation" or "last year it was all fine, so it must be the students that are different" will do to explain the kind of madness that this course turned out to be. As a fellow student said: "I have never had so low motivation for a course. Although the subjects might be interesting and challenging it was just impossible with that way of teaching."

It would have been more valuable to spend time to understand the techniques in principle. The assignments were so long to finish that I couldn't study properly. I could have learned more if I gave up on getting A and spent more time reading up...

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

I don't think this course needs improvement, I think several students complain about the math and I think other courses should correct this because the level of math needed is reasonable to me.
Also the issue with assignment 3 and adding/removing questions was a bit stressful. I had solved one, but not written a report, and then it was removed, and I had to start over. I had an A in the end but the quality assurance of assignments could be better.

Almost everything. This is by far the worst course I've taken at KTH in terms of teaching, which sucks because as previously stated the material is very interesting. I wanna be clear that I'm not complaining that the course was difficult, that is totally fine, but the teaching was horrible.

To be concrete.
1. Why have two teachers? It only made things more complicated cause you weren't really sure who was in charge. Plus the communication between the teachers sometimes seemed subpart, almost like two different courses.

2. The restriction on having to do everything alone is absolutely terrible. If you wanna assess the students individually - just have an exam? It would have given so much more to be able to discuss the assignments (and yes I know it was stated that some things was up for discussion, but it creates a very unopened atmosphere since you don't want to be accused of cheating)

3. The course material (lectures etc) did not at all seem to be enough to finish the assignments, not even the first two ones. This might ofc have been because of the pandemic, but still, on multiple occasions it felt as if you only got hints on lectures how to solve exercises (PCA and probability of DAG given leafs comes to mind) and then somehow was expected to figure everything out yourself. This coupled with being afraid to discuss with classmates created a very bad learning experience. It felt more like a long examination than an actual course.

4. The assignments. When they were actually out it was fine but it was kinda strange to not at all have a timeline of when you were supposed to start working. Also changing deadlines etc just days before due date + making one deadline into next period? Seemed very strange.

5. The feedback was absolutely subpar!! This is imo probably the most unacceptable thing on this list. How can you seriously not even just mark which questions were passed or not? Personally I only got some very vague comments (often about spelling etc and not actual feedback) and then you had to guess which parts you passed based on the score in canvas, which itself turned out to be wrong for many people.

To finish I wanna clarify, that I'm not trying to bash the course just to spite here. This has the potential to be one of the most important and most challenging courses on KTH (at least in my experience) based on the content, but in its current state it falls so short of that, and is honestly below the standard otherwise given at KTH. A real shame.

Everything, recycle the lead professor.

Substitute the pre-recorded videos for real classes in live time. Make sure the class understands and follows the concept. Correct and explain the assignments in class once the deadline is over.

I also think there were excessive typos and mistakes in the assignment exercices. Making one typo in one assignment can be inevitable, but making many typos in many assignments is inevitable. I would suggest doing a careful revision of the assignments before publishing them.

Better slides, better professor, better explanation for grading, better grading criteria, better help sessions

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

More applied exercises in the assignment.

The course covers too many concepts for a single block. Splitting the project and assignments into 2 separate courses (or a single course that spans one semester) would have allowed me to be able to reflect on the concepts. Especially towards the end of the course, there was simply too much work to do.

Provide more info on the schedule and modules up front

Fairer grading Scheme that not just relies on the third assignment (also please make the scheme easier to understand and point based)

Be more Elaborate on certain derivations

More tutorials on the topics (especially EM and VI)

In general, when I got to the assignments even though I followed the lectures and understood them I felt quite lost (this feeling got worse through the assignments considering that in the first one I managed quite well), as such one improvement could be to make the assignments more accessible through smaller/easy tasks that lead up to the bigger/harder tasks. One other possibility could be to introduce another assignment similar to the project as it helped me a lot.

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

Basically everything. The course responsible teachers need to work on their communication with students, and learn to use Canvas. The structure of the course needs to be worked on. Right now it was "Teacher A has their part and I have no idea how I'm going to tie that into my (Teacher B) part". The TA's need to be faster to grade assignments and projects. Waiting over a month for results is not acceptable, given that the teacher was very strict with their deadline. If you cannot be flexible with your students you should not expect the students to be flexible with waiting for you. I know a few students tried to raise this issue with Jens but he simply dismissed it and could not see why students were not pleased.
Jens also needs to improve his attitude when talking to students. If you don't want to interact with students then you don't have to teach the course.

Better explanation for later parts of the course

the lecture notes(nobody can read what you are writing in the lecture notes), more structure, less arbitrary grading(abolish this all or nothing grading scheme), more focus on theory than practice

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

- Use Canvas!! Slack is ok for discussion, but useless regarding administration. Schedule, grading sheet, different versions of instructions for assignments etc was spread over several channels and hard to find.
And it's really annoying to be forced to keep track of a completely different framework just for one course. Canvas has an OK Discussion function

- Don't change the schedule! I planned my TA-work and life overall according to the schedule we had been given, but had to rearrange when the course started which created problems.
But I'm thankfull for the added excercises!

- It was often hard to follow the theory in Jens letures. Probably because it quite complicated theory. But the lectures could maybe benefit of more backtracking of what are we doing, summaries, similarities and differences between methods, etc.

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

I think this course would be best broken up into two to diminish the workload. Preferably, one of these would be elective.

I thought that it was very difficult to get help when I got stuck. I think that there should have been lab help-sessions where students could talk one on one with a TA and show their code/solution and explain what issues they are having. Slack did not allow for any deeper discussion about the specifics of my solution and what problems I was having. What made matters worse was that we were not allowed to discuss details about our solutions with course mates, which means that when I got stuck I was completely on my own. Obviously, we shouldn't copy each other's solutions, but I've never taken a course before or since that did not allow me to discuss solutions with classmates (except for during exams of course).

As mentioned earlier I also think that having both assignment 3 and the group project made the workload unreasonably large.

I also think that it was unfair that assignments 1 and 2 could only give grades E or D since they were quite difficult and demanding.

Course structure and the prerecorded videos that "were explaining the course"

Assignment instructions and help

Better teachers, less workload. Getting a D tooks your whole life. It produces anxiety and frustration.

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

Jens' lectures. As someone who desires a high level understanding before learning low level theory I would really like to see Jens' lectures focus more on high level understanding rather than going into mathematical derivations from almost all the time. One can always look these up later but without understanding what they are used for it is not possible to learn anything from seeing Jens' write on the board for 90 minutes.

What would you suggest to improve? (I worked: 36-38 timmar/vecka)

First, there are way too many lectures. Many lectures are just sitting there, seemingly irrelevant, taking up time and focus from the lectures which are important for solving the assignments.

Second, the assignments. The assignments are our first and only way to practice what comes up in the lectures, but they are way too difficult to be the first thing you do in a certain subject. We need smaller and simpler exercises that lead up to these difficult assignments to be able to handle them. The assignments should not be made easier, but we need to have something before the assignments that let us practice (and properly discuss) the topics.
The book is of course part of the recommended reading, but it takes too much time to go through the book and have time for the assignments. I tried to use the book properly and thoroughly several times, but a question in an assignment can require 1 week of study in the book, and then you actually have to do the assignment. In the end, it was more time-efficient to try to cobble together a working solution to the assignments from content on the internet.
In short, the assignments should be shorter (not easier), and instead of 3 long assignments, the course could consist of 3 smaller assignments and learning exercises created to lead up to those assignments.

I think the project was very strange. Why are we asked to do things like variational autoencoders when neural networks were not part of the course?
Variational autoencoders were addressed *by the end* of the neural networks and deep learning course, which makes sense because it's not something you just learn over a weekend if you haven't encountered neural networks before.
I would say the project part is a prime target for removal from the course.

What would you suggest to improve? (I worked: > 41 timmar/vecka)

Everything was wrong with the course. There were 2 professors who handled the course.
1 Read directly from the slides
2 Uploaded everything into dropbox instead of using canvas(He also mentioned that the importance of the topic discussed will not be reflected in the lecture. Thus his lectures and the slides were of no use.
With everything mentioned above, the assignments given made us panic because we had to study everything on our own, figure out hat the professor is trying to convey, sometimes we were just trying to solve the problem and get it done with.

1) Lower the workload.
2) Make some exercises and tutorials for problems similar to those you give as assignment.

this course needs to be fully reworked. it was an exercise in frustration to be asked to solve problems that weren't clearly presented, using prerecorded lecture material that only covered a fraction of the material needed for the assignments. Asking questions on slack resulted most often in no answer (except for from other students who were just as clueless) or a sort of tongue-in-cheek sarcastic answer like "of course not" or "why would you ask that" - which left us often just as clueless. The TAs were very very helpful but didn't really play a role until close to the end of the second assignment and the beginning of the group project. Here are some concrete suggestions of what should be improved:

- As a suggestion, this course could either be made into more points or divided into two courses. Spending 60-80 hours a week on a course for this many points isn't really great, and it was too much to learn in one term.
- It was not possible to gain any intuition about the knowledge required with the way it was presented and with the time crunch involved in trying to understand and repeat the material. Anything that can be done to involve intuition would greatly improve the course. Examples include presenting solvable examples in the lectures (of things we actually need to do for the assignments) and adding tutorials/seminars with pre-determined content that pertains to the course material.

- Assignments should be reworked, and preferably students should have the option of working together and presenting their solutions together.
- The material to be covered should be given in a much more detailed way. "read the book" is not enough presentation of the material for the more difficult questions.
- Slack is excellent for anything that is a discussion. However it should not be used for anything official. Countless hours were wasted in this class scrolling back through thousands of messages looking for an "official" note from one of the teachers detailing how to interpret a question. Anything that affects students as a whole should be put on Canvas.
- Lectures should be accessible from Canvas. All lectures should be accessible in the same place.
- Some of the assignments would have worked if the learning materials were more complete/available. These include Assignment 3 questions 3 and 4, and a few of the assignment 2 questions.

You need to put more effort into giving solid examples that you then require us to solve in the assignments. You only speak about concepts but its really not enough to solve the assignments you expect of us. The lectures you hold are simply not enough, its not much to go by and after watching them I still needed hours upon hours of research.

In conclusion: if you expect of us to solve something, you need to give some practical explanation to the questions. This course has no learning phase it only has a testing phase. The lectures are just not helpful, they're too vague compared to the actual assignment questions

I would prefer to have all the details, lectures, assignments, support material etc. organized into a single place. e.g. only at slack, only at canvas. I felt the grading to be quite problematic. For instance, doing the first two assignments would result in best case senarion not to lose points while in the worst case scenario a 0.5 decrease in the final grade. Additionally, regarding the group projects, I felt like the passing conditions were somewhat unclear.

Assignments (mainly 1 and 3) should include more programming parts and contribute more to the final grade. Lectures should be organized in a more audience friendly manner, also taking into account that many students don't have the complete mathematical background, collaborations should be encouraged (not necessarily in tasks but for discussing the course theory) apart from the project and mainly slides should come in a more concise format.

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)
Consider not picking the Machine Learning program because of this course.
Getting an E is not hard. Getting more than an E might be though.

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

What advice would you like to give to future participants? (I worked: 12-14 timmar/vecka)
Leave enough time for studying the book PRML.
Knowing your way around the Bishop book will help a lot for this course, perusing the first two chapters is really helpful to have entering the course (especially the second part of the course!). Overall the suggested readings can be really helpful, but you have to figure out what works best for you. For the first part of the course to me it worked best to focus on lectures and complement with the readings, for the second part the other way around, focus on the Bishop book and complement with lectures, except maybe the topics involving trees, there the lectures where easier to follow than the book. Try to do the last assignment gradually, if you have 4 or more problems remaining by the last week it might be too much work.
Start with the homeworks as soon as possible. They are tough, but you learn a lot. If you manage to solve them early try to experiment further and "overdo" the problem, you will learn a lot! Choose a large project - it's rewarding! Ask questions, TA's and teachers are great! :)

What advice would you like to give to future participants? (I worked: 15-17 timmar/vecka)
Maybe don't take the course if you value your mental health.
Get prepared as soon as possible. Refresh your linear algebra, and make sure you can implement some ML/DL techniques for the project. Exchange as much as possible with other students, and ask for help all the time.

What advice would you like to give to future participants? (I worked: 18-20 timmar/vecka)
Start working, there is a lot to do! Ask questions if something is unclear, sometimes there are issues with the assignments.
Don't expect anything from teachers or TAs. Study a lot on your own and hope you pass.
Don't take it, change your programme if necessary.
Probabilistic graphical models are powerful techniques worth to study. Study hard and try to complete the assignments to the best of your ability. Ask the professor what you do not understand. Try to receive feedback from your completed assignments.
Do not take any other course at that period cause you will not have the time needed to implement the assignments properly and you will not get a high grade. A lot of people cheat on the exercises try not to be that one

What advice would you like to give to future participants? (I worked: 21-23 timmar/vecka)
I suggest looking for more sources rather than just the lectures to do the assignments.
follow the lecture
Generally, ignore the lectures, read the book. Start and finish assignments early so you have time to think about what you did, otherwise you probably won't learn much.
Also use external sources (like medium) and try to start implementing algorithms or use frameworks such as tensorflow probability. Probably said multiple times: the assignments are time intensive but definitively worth it. You will understand the aspects in detail once you solve them.
I believe the advice we were given at the beginning of the course was very accurate and I have nothing to add. (start early and do not let much work accumulate)

What advice would you like to give to future participants? (I worked: 24-26 timmar/vecka)
Same advice that I got from everybody who had already taken the course. To not take it. The course gives you very little in terms of practical knowledge and is very theory heavy (which is important). If one must take it I would recommend them to focus a lot of Jens part of the course since it is the hardest part.
All assignments and the project takes a lot of time
Collaborate for understanding theory

What advice would you like to give to future participants? (I worked: 30-32 timmar/vecka)
Don't take courses alongside this one. It's heavily mathematical and relies on very involved homework assignments. Knowing how to program or being good at math
Be prepared to spend a lot of time on the final assignment and project.
If it is not mandatory, do not take this course
Get conformed with a D or a C if you want to keep your mental health and not to experiment anxiety.

What advice would you like to give to future participants? (I worked: 33-35 timmar/vecka)
Be aware that the project does take up a long time! if you want a high grade in in the course you should be prepared to perhaps sacrifice some of your vacation over Christmas.

What advice would you like to give to future participants? (I worked: 36-38 timmar/vecka)
Buckle up buckaroo

What advice would you like to give to future participants? (I worked: > 41 timmar/vecka)
If not mandatory, don't take this course.
This course's workload is much higher than the credits would suggest. Consider not going for a high grade in order to save months of time.
Make friends with one of the TAs and ask them when it seems the assignment and the lecture material are lightyears away from one another. Start early.
Focus on understanding the key concepts in depth. Make sure you team up, for the group project, with students that you are in the same page
The course requires very hard work and dedication. Study the relevant material as early as possible (e.g. have a look at Bishop book in the topics covered in the previous Machine Learning course before this course begins) and find good collaborators for the coding project (usually reproducing a paper), the assignments and project really have a lot to offer, they will undoubtedly contribute to your understanding of the concepts (although for the assignments you must work in complete isolation) and uncover deep knowledge.

Is there anything else you would like to add?

Is there anything else you would like to add? (I worked: 0-2 timmar/vecka)
This course significantly harmed my image of, and my respect for, KTH as an institution of learning. I'm shocked that this can legally be called education.

Is there anything else you would like to add? (I worked: 12-14 timmar/vecka)
No, thank you!
The course material did not match the examinational material in difficultt
Although I wasn't expecting an A, and the B seemed fitting to me, I would have really appreciated to at least have a chance to improve my grade and then decide if I'd take it or not, yet after the course is over only re-exams are offered for people who failed.
Special shoutout to Aristedes who was a new teacher - really enjoyed the modules and videos! Great job! Overall, nice to see that the teachers influence the content with their personal touch related to their research. Much appreciated!

Is there anything else you would like to add? (I worked: 15-17 timmar/vecka)
Give Gionis a raise for being a wonderful teacher and let him take over the course. Leave Lagergren only as a lecturer - his expertise is indeed very valuable and he is patient and willing to help a few students individually. But, all deities forbid, don't allow him to have such big impact on the course and its organization any more.
This was more stressful for everyone because of the pandemic and remote work. Still, I think that this course could be better organized, with e.g. smaller assignments that focus on understanding, instead of days-long implementation problems that force us to spend all our study time on coding and writing reports.

Is there anything else you would like to add? (I worked: 18-20 timmar/vecka)
It was a very fun and enjoyable and relevant course with an appropriate degree of difficulty.
No. Think I was clear with my disappointment and reasons for it. I've tried to be as constructive as possible.
This needs to be highly changed, it should be one of the most important courses in the ML master but it is without doubt the worse.
I would like to emphasize the first paragraph I wrote in the section "what would you suggest to improve" . In general, I learnt a lot from the course, but I think that there are many things that should be improved, as I described before.
It was really the worst course experience I ever had

Is there anything else you would like to add? (I worked: 21-23 timmar/vecka)
I think it should be considered to make assignments in groups, the submissions could be changed to include also a presentation with a TA so everyone's knowledge is still tested.
The course would be great if it were split into 2 separate courses. Students need time to digest information (not necessarily less workload, just time to think about the problems as they are quite abstract). At the moment, most ML students will have finished a basic ML course, which does not at all prepare them for the content in this course.
The teacher wasn't very open/flexible to feedback throughout the course such that a lot of effort was necessary from multiple students to make the course a bit better along the way. Furthermore, there were some problems with grading with which the teacher wasn't available at all being that it took over 2 months to fix a simple issue (I was redirected through multiple TAs, and the teacher separated by weeks of no replies. On top of that, the teacher was not very nice throughout the conversations we had)

Is there anything else you would like to add? (I worked: 24-26 timmar/vecka)
I am sorry, but this course really needs a better structure. I gave you a lot of feedback above.

Is there anything else you would like to add? (I worked: 30-32 timmar/vecka)
Please, change this course as soon as possible, people from different years agree in that this course is the worst that they have had in KTH. Changing this is important, it is affecting people's mental health.

Is there anything else you would like to add? (I worked: 33-35 timmar/vecka)
Nope

Is there anything else you would like to add? (I worked: > 41 timmar/vecka)
I worked 80 hours a week on this course, everyone else in my project group got a much higher grade than I did for approximately the same work. I submitted more solutions to assignments than two others in my group, and yet got a grade at least 3 letters lower.
This course was one of the worst courses i have ever taken. Because you just expect us to know & understand SO MANY CONCEPTS that lay outside our knowledge scope to even try and attempt to learn your course material. Basically we have to teach ourselves so much to be able to start learning the content you share even if we have the prerequisite to take the course. For many of us its the second course we ever take in Machine learning and it was just WAY TOO MUCH. If you want to speak about topic C you can not just assume we already fully know and understand topic A and B unless its something all students study during the bachelors .

SPECIFIC QUESTIONS

Did the use of Slack make the course better?

Did the use of Slack make the course better?
A bit.
Yes! It improved class community, provided a quick Q&A environment and it was possible to review old discussions.
YES
A little.
It made it worse. Just use Canvas like every other course at KTH. It's a nice idea to use Slack for discussions (which were very helpful), but the teachers (Mostly Jens) used it as a complete replacement for Canvas. Canvas should be the primary place where the assignments, reading instructions, videos etc at kept and not on some Dropbox server hosted by the teacher.
No. It could be fine if it was only used for getting support about questions for the assignments, but it was used to announce important changes to the course which made it hard to keep track of.
No, it's very inconvenient to have to keep up to date with loads of little notifications. Use of more standard lectures and exercises would be better.
No. To find updated information, you needed to search 10,000+ messages (I know because we surpassed the limits of the free plan). If you didn't join some channel, too bad! You missed out on information. The course calendar was also posted on Slack and Google Calendar instead of using the Canvas one with all the other courses. I think, though, that the communication problems would be solved if this course were broken up into two, just because there wouldn't be so much content to keep track of.
I think slack is good, but there is too much information and it's difficult to navigate, I think the important details should be moved to canvas.
Slack made it easier to get in touch with other students and also see what questions others are posing.
No. I thought it was bad that I had to check slack to see clarifications about questions. If things were unclear in assignments, they were only clarified on slack and it was hard to find.
No - worse, if anything.
I'm not sure what to compare it to. It's not a bad idea to use slack, but we also would have needed one-on-one lab help sessions.
No. Well its the first time I take the course, so I can't compare to earlier rounds. But not regarding administration. A well structured and updated Canvas page is to prefer. Slack could maybe be used regarding discussions.
I helped, but it was harder to get answers on Slack than in Zoom sessions.
No
Yes! Very good initiative
Yes
No.
Yes and no. It was a very good idea, but sometimes things were only announced on slack and not on canvas which made it paramount to keep track of all messages all channels. Would be better imo to clarify important things on canvas and only use slack for questions.

Which material did you find most interesting?

Which material did you find most interesting?
Graph theory as I barely understood the Variational Bayes part of the course.
EM->VI->VAE was the most interesting to me but I wouldn't cut anything out.
The text book.
Aris part of the course.
The math of assignment 1
Graph embeddings
Everything that Gionis tought.
Overall I think most of the material was interesting.
The Bayesian approach to the subject of ML. And the graph-methods in the first part of the course
External books (Bishop) and the online material I had to read during the course.
Variational inference
The second part of the course.
PCA is quite interesting.
EM and VI was very interesting even though I'm still not sure if I've actually understood it.
the textbook and the lecture
Variational Inference and EM, although I was really disinterested with the first topics involving graphs, the material turned out to be very interesting also and Aris covered it in a really nice way.
I liked the group project very much - it was a nice chance to get our hands dirty and produce something amazing. Unfortunately we were disappointed that although we did an amazing project and got great feedback from our TA, it didn't really give us the type of credit we were hoping for because it was P/F. But we were very satisfied with our results.
Dimensionality reduction techniques (PCA, SVD, etc...)
The project about VAEs was good in my mind
The project

They like it all pretty balanced

20 (29)

Would you like to add something to the course?

Would you like to add something to the course?
No, just make Jens' lectures more pedagogical.
The parts taught by the two teachers are not coherent。
No.
exercises and the time to do them
Everything is so abstract that it's impossible to see what you're doing, why, and how it could be used in any situation. Exception being first assignment on Dim Red.
Exercise sessions where students can actually solve exercises - when the only point of practice is an assignment that you cannot discuss with others, it is quite hard to measure how well you are doing.
Only what's stated above.
As I mentioned before, chances to up the grade would be nice.
Further detail on other ML algorithms would be interesting. Neural networks, SVMs (in more detail than the basic ML course), and gradient boosting algorithms could be good candidates.
Some TAs were very helpful, thank you for that
more details about Formula Derivation
Please also include MCMC techniques for sampling.
No, the content should be that one, it just needs to be explained, discussed and evaluated properly.
It would really have the potential to be the best course in this master degree if and only if the instructions on the assignment and the material that you have to read will be better guided

We are aware that students require a better introduction to matrix algebra etc. Do you have any suggestions?

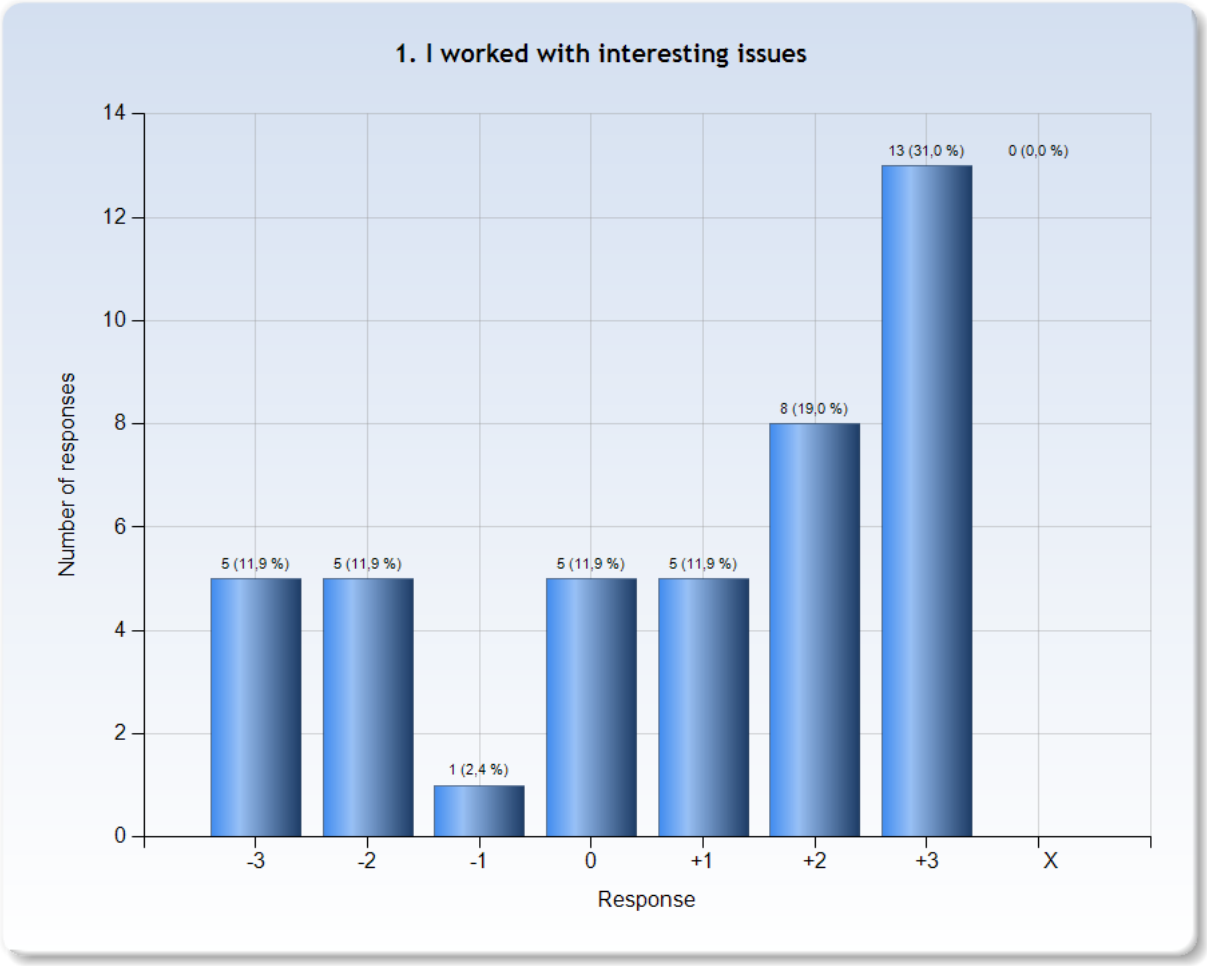
We are aware that students require a better introduction to matrix algebra etc. Do you have any suggestions?
I would suggest students also should be given more theory about statistics! This way perhaps they are more easily able to follow along in Jens' lectures.
Don't remove material from this course to make room for matrix algebra. These are all very relevant topics and the course feels fully packed. Any suggestions? a) longer version of the course (8.5HP) with matrix algebra b) another course prerequisite c) recap material and self-study material available to the student (but no course time allotted to it)
I think people should know the basic linear algebra in this course. But I have also taken several courses in linear algebra
I don't think so.
Don't make homework assignments which are basically 10 questions of algebraic proofs. Almost every proof included using some "trick" which is not really testing the student on their understanding of Machine Learning concepts but rather how much matrix algebra stuff they've done before.
A module covering the linear algebra needed (with exercises), and also a module covering the probability stuff needed. Maybe the course should be linear algebra for ML (2 weeks) -> probability for ML (2 weeks) -> whatever subset of the modules you think is most relevant.
You are entirely divorced from our level of education. Actually look at courses taken by ML-programme-mapping bachelors studies and their contents. When the teacher says "I'm sure you're all familiar with PyTorch and Tensorflow and all that" in the first lecture, and we've only just been introduced to NumPy in the previous course, that paints a picture.
Again, I think this course would be best broken up into two. Each of the parts could take one period. Then there would be time for students to revise relevant concepts, and perhaps the course organizers could help. Alternatively, the more probability-heavy part of the course could be the second of the two, and there could be a "taste" of it given beforeand so that students uncomfortable with it have time to take another preparatory course.
Some optional assignments at the start of the course with examples of solved problems could be helpful.
Personally, I did not have any issues with this.
Maybe a excercise prior to Assignment 1?
The first assignment sometimes felt like a math assignment, more than an ML course. Maybe having so much lin alg wasn't needed. In any case, students should be warned in advance that they need these math skills, it's too stressful to learn as we go through the course.
Have a brief lecture on the subject.
I thought it was fine
Cut out a portion of the syllabus and replace it with matrix algebra.
Personally (with a background in physics) this part was fine. Maybe just make this part of the introductory first or second week?
Matrix algebra is the course in undergraduate level, I don't think the introduction is required
I can empathize with that feeling, and I get that this is a mandatory course so it's not as easy to blame students for being unprepared, but I recall admission to the programme required showing that one has covered courses on linear algebra, probability and calculus. I wouldn't advice doing without this important foundations, as people would still eventually run into it if doing machine learning, so for me it's not valid to complain about this material being on an advanced course on the subject. Perhaps having enough tasks that allow students to get a pass without those sort of exercises could work, so that they only up one's grade.
Sure. The Open MIT courses on matrix algebra, SVD, eigenvector decomp, etc, were excellent and it's something like this to build intuition that would be needed in order to effectively manipulate matrices in the way required.
A simple introductory lecture on it would suffice, the content was not too difficult but if you're unfamiliar with concepts like the rank of a matrix or orthogonality it can be difficult to follow some content

RESPONSE DATA

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

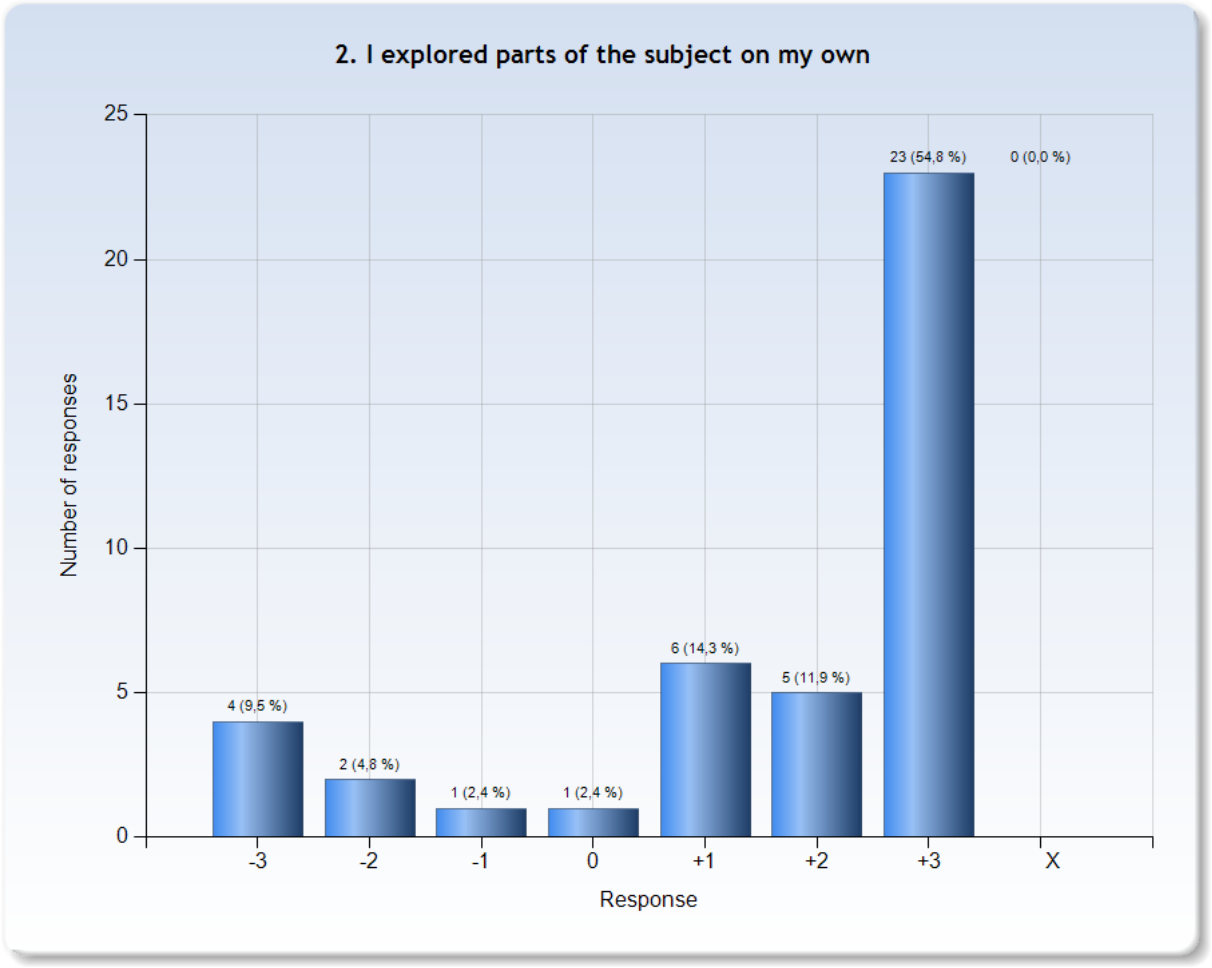
-3 = No, I strongly disagree with the statement
0 = I am neutral to the statement
+3 = Yes, I strongly agree with the statement

X = I decline to take a position on the statement



Comments

Comments (My response was: 0)
The project was fun but the assignments weren't as interesting



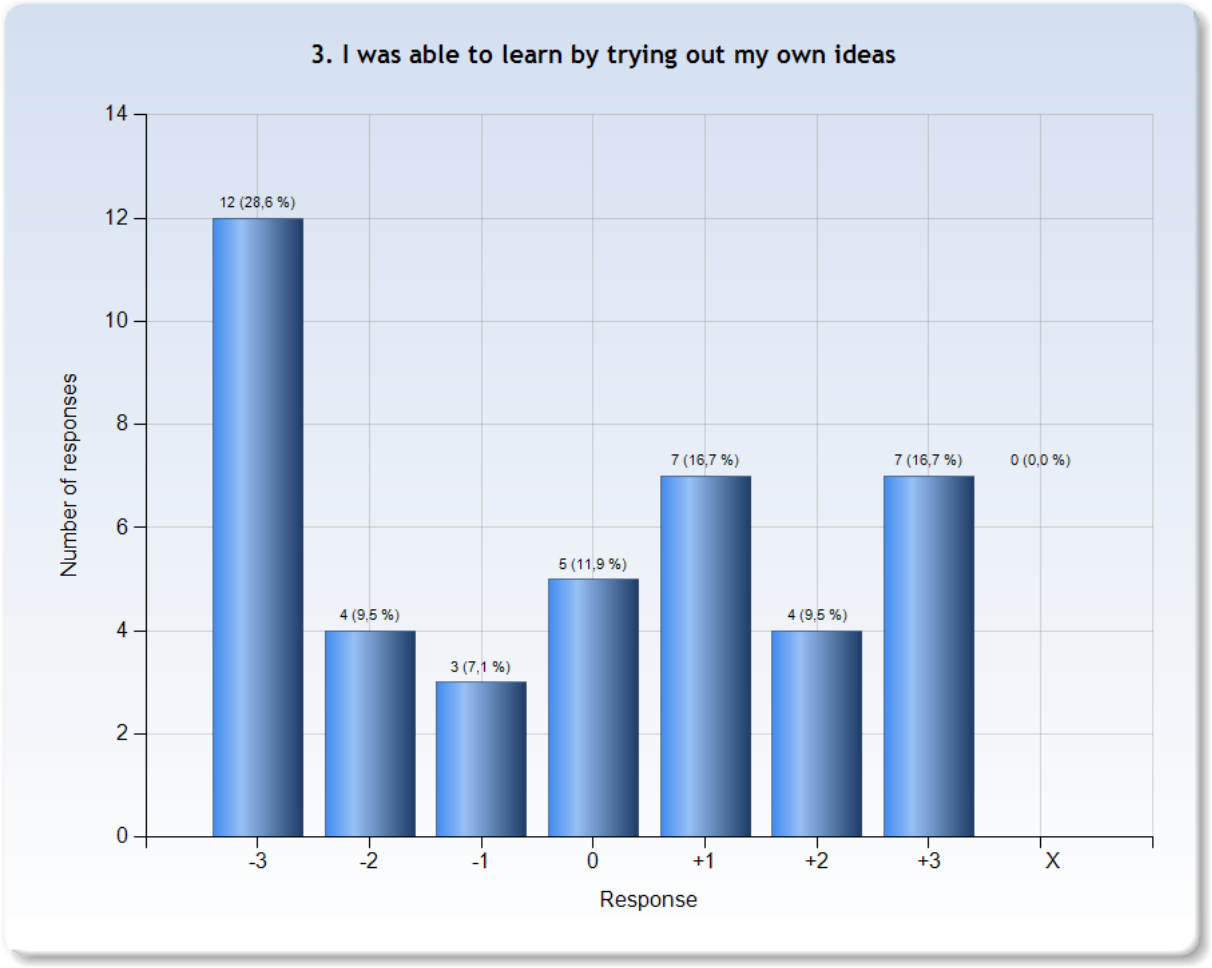
Comments

Comments (My response was: -1)
Again, no time for that

Comments (My response was: +1)
Lite tid för sånt

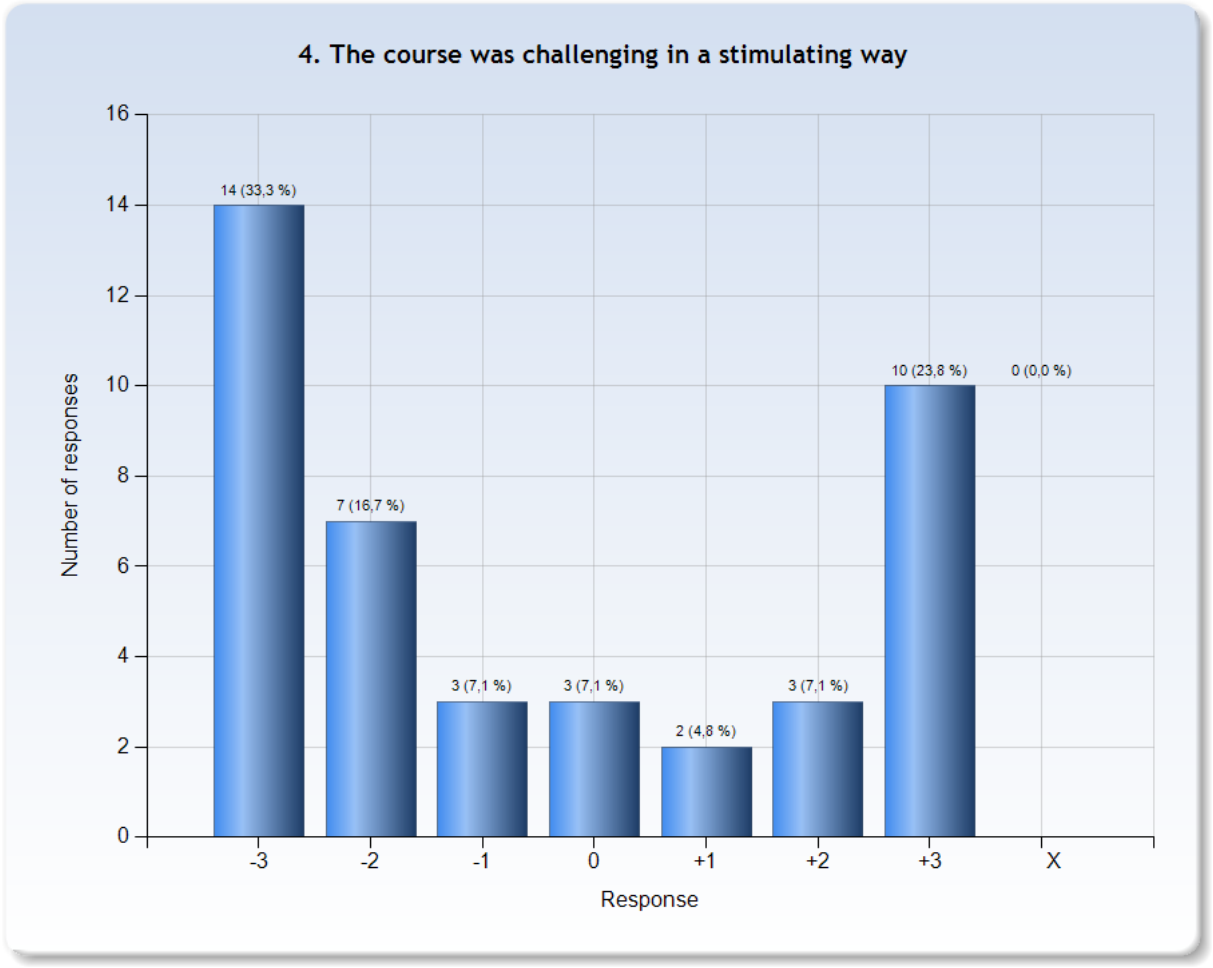
Comments (My response was: +2)
I had to. I often needed online material and books from other sources to really understand things.

Comments (My response was: +3)
this was required because the material given in the course was substandard



Comments

Comments (My response was: -3)
We weren't allowed to pick our own topics to explore in e.g. group projects


4. The course was challenging in a stimulating way
Number of responses
16
14
12
10
8
6
4
2
0
14 (33,3 %)
7 (16,7 %)
3 (7,1 %)
3 (7,1 %)
2 (4,8 %)
3 (7,1 %)
10 (23,8 %)
0 (0,0 %)
-3
-2
-1
0
+1
+2
+3
X
Response

Comments

Comments (My response was: -3)
this course was challenging in the way that you want to go sit and cry in anxiety and desperation
was challenging in an unstimulating way

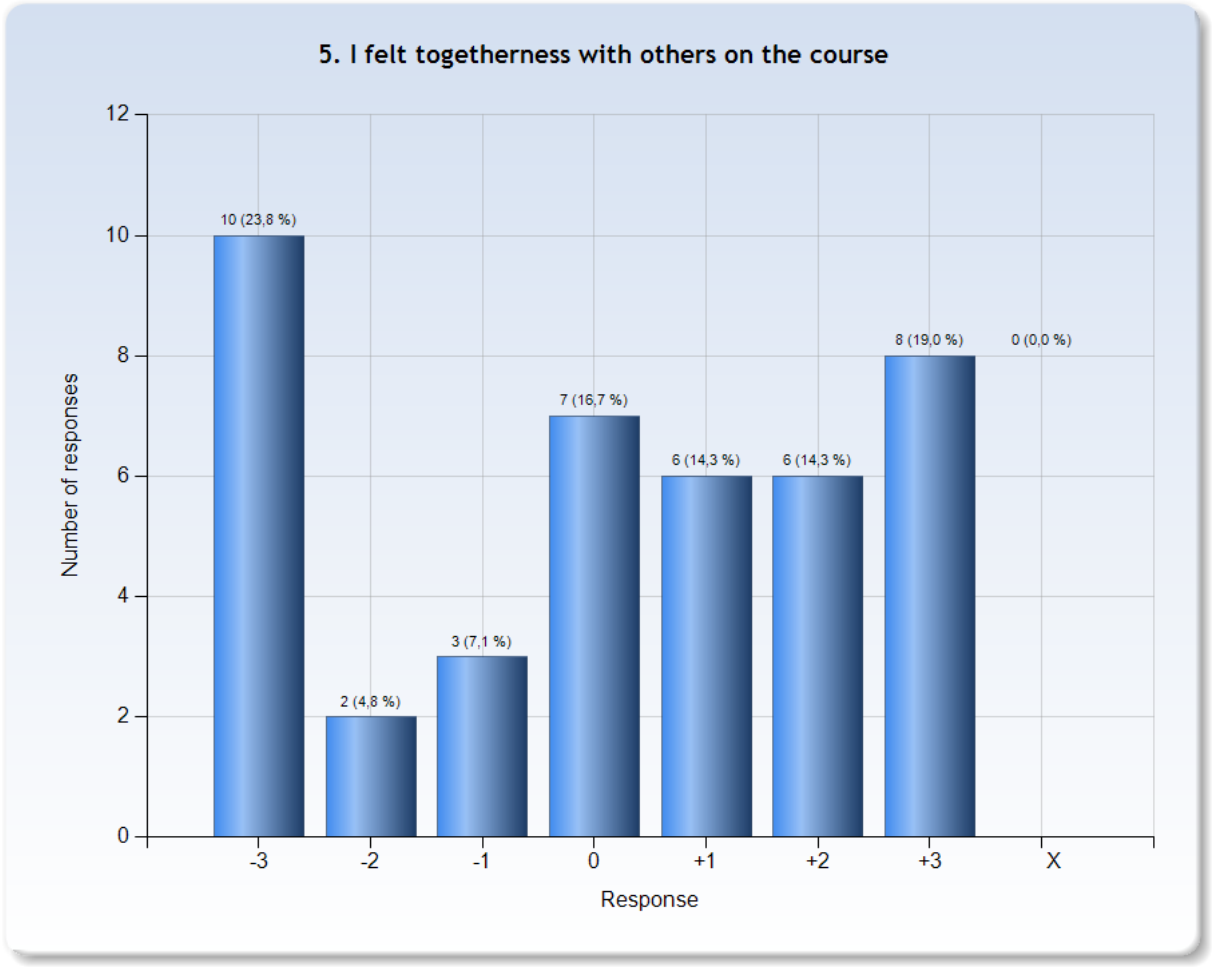
Comments (My response was: -2)
Jens's parts were made too difficult. It was not enjoyable

Comments (My response was: -1)
Very hard sometimes

Comments (My response was: +1)
The fact that the professor didn't make class and just gave the pre-recorded videos didn't help to follow the course

Comments (My response was: +2)
It was, although I fell like the challenge was too often in understanding what I needed to do.
Some of the problems in assignment 3 was too much

Comments (My response was: +3)
One of the most challenging courses I've ever had but also in a good way.


5. I felt togetherness with others on the course
Number of responses
Response
0
2
4
6
8
10
12
-3
-2
-1
0
+1
+2
+3
X
10 (23,8 %)
2 (4,8 %)
3 (7,1 %)
7 (16,7 %)
6 (14,3 %)
6 (14,3 %)
8 (19,0 %)
0 (0,0 %)

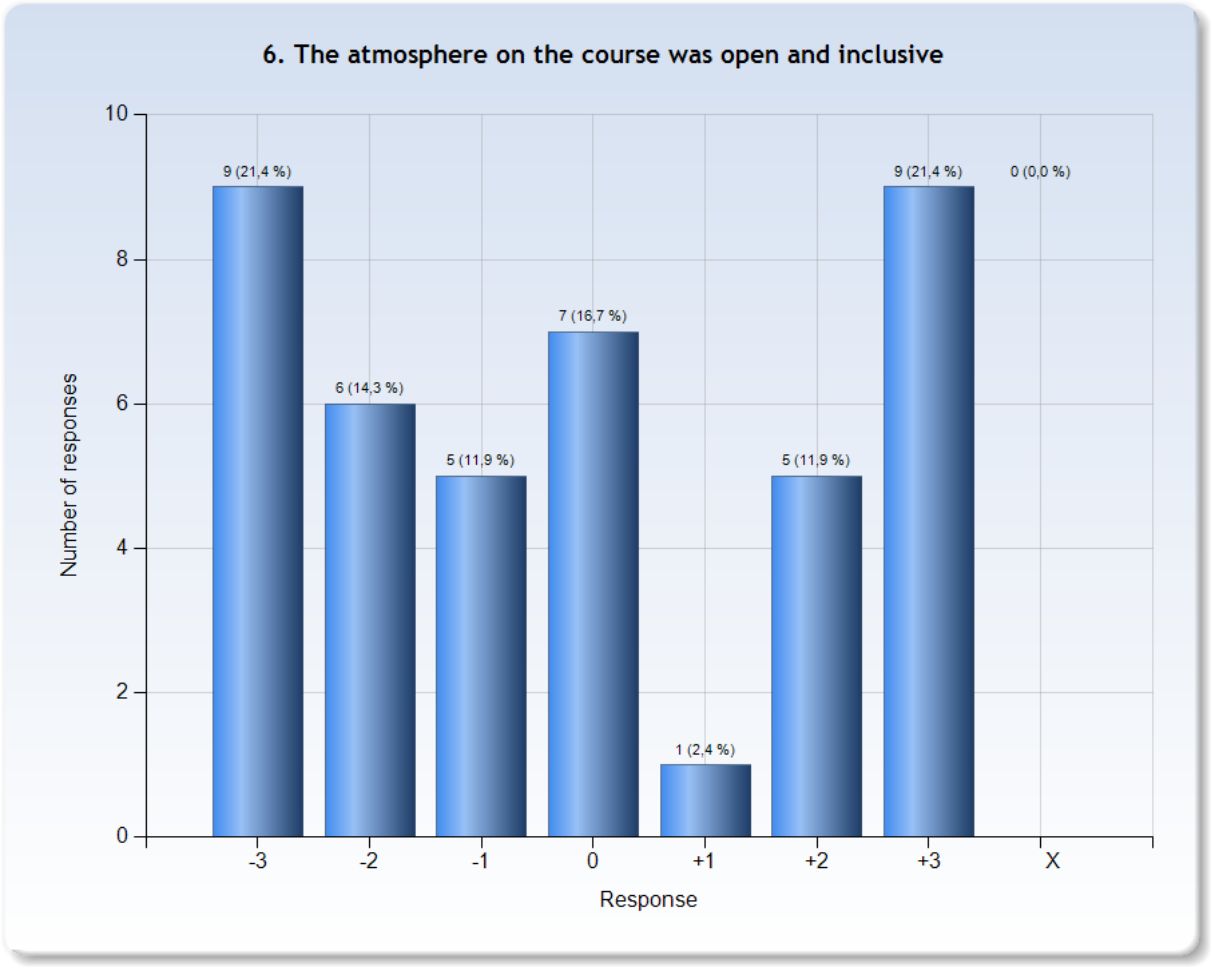
Comments

Comments (My response was: -3)
in the beginning we were told not to collaborate
No collaboration was allowed
We were not allowed to discuss the solutions with our classmates

Comments (My response was: 0)
Covid...

Comments (My response was: +1)
Hard to feel that when working from home, but collaboration with my group was very helpful.
Slack indeed was a great choice (for me at least as I was used to this tool before).

Comments (My response was: +2)
Slack helps a lot
Mutual suffering
In project yes but not in the assignments obviously

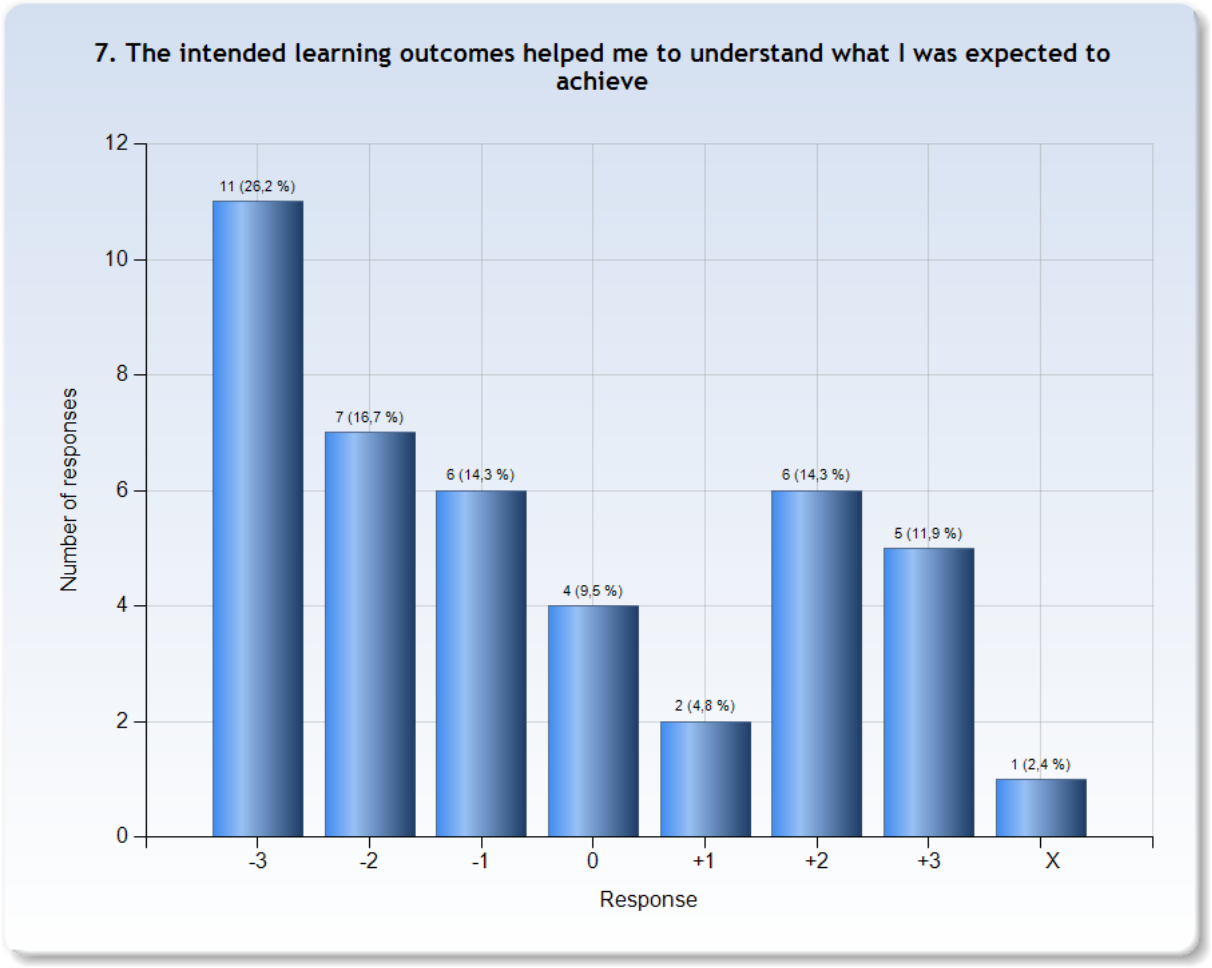


Comments

Comments (My response was: -3)
No. The teachers intentionally cut us off from one another in the early times of the course by telling us not to collaborate by discussing assignment materials with one another, and the teacher in the introductory class told us any violations would be reported to the "disciplinary board" at KTH.

Comments (My response was: -2)
It was stressful and demanding

Comments (My response was: 0)
There was no classes



Comments

Comments (My response was: -3)

Everything so abstract you never know what you're doing

Comments (My response was: -2)

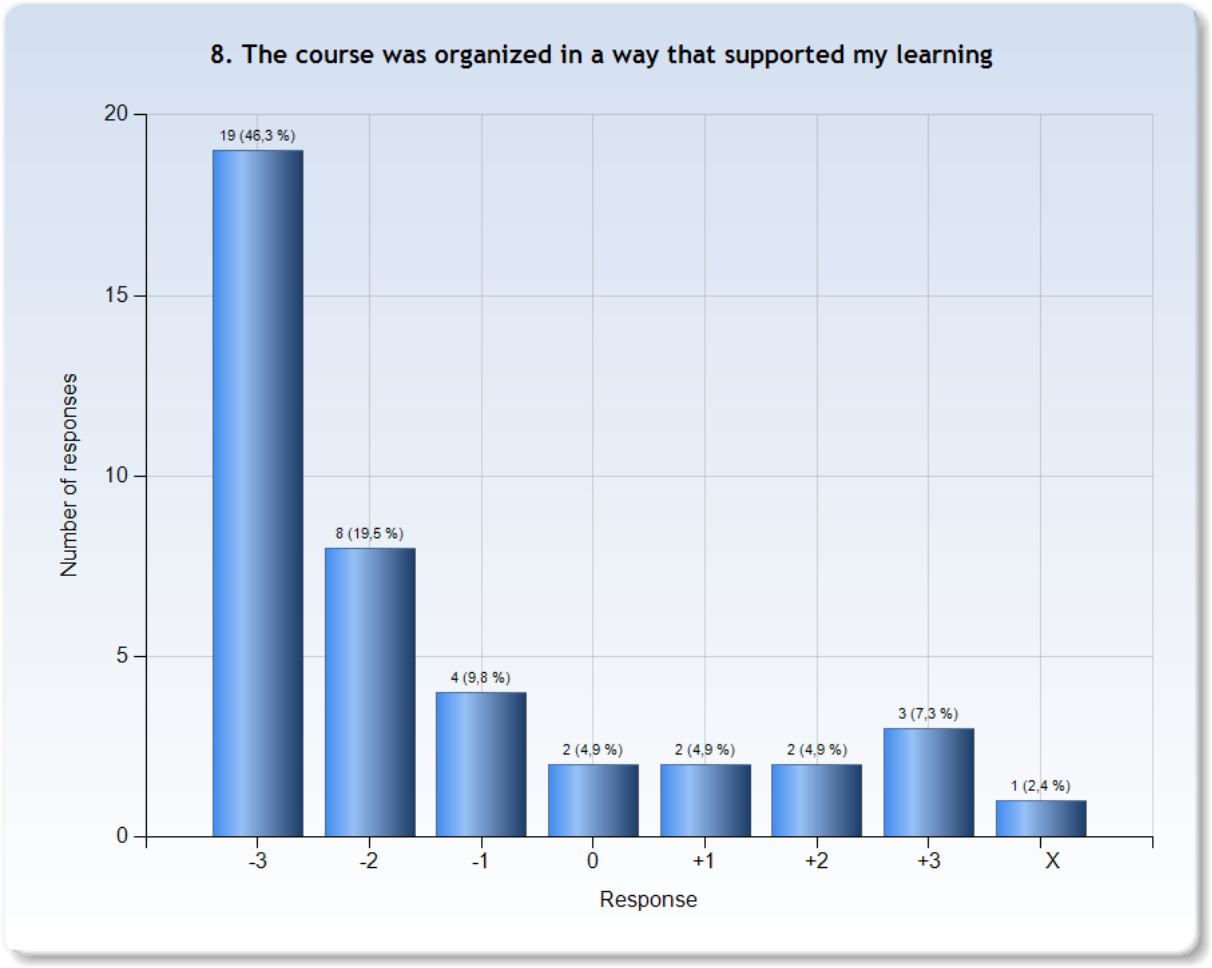
Although the course taught many concepts, it was not clear how some concepts were related (especially between professors).

Comments (My response was: +2)

A more elaborate explanation of the necessary 'project' would be helpful to understand how the course will be graded

Comments (My response was: X)

Didn't read

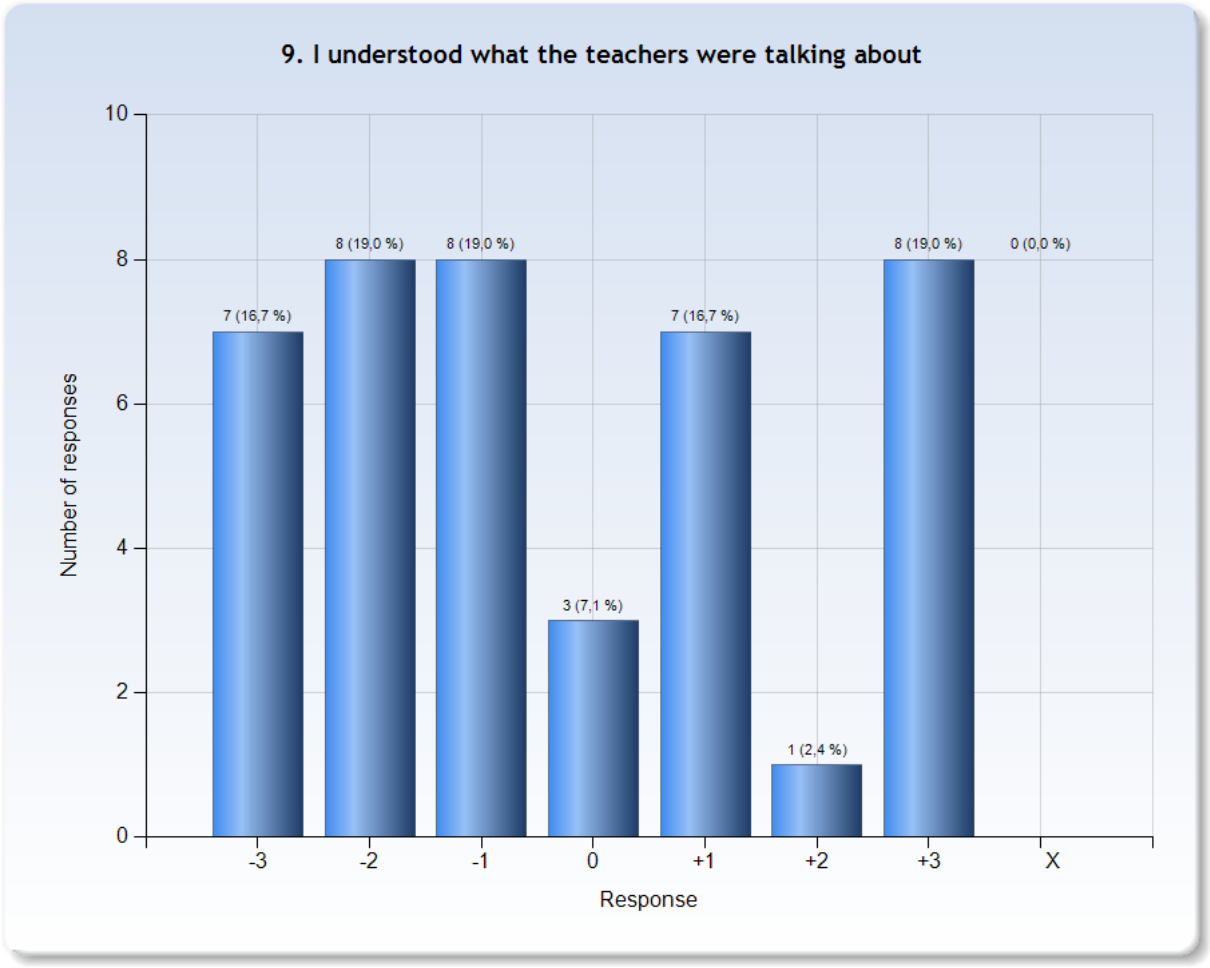


Comments

Comments (My response was: -3)
Nope, Jens' lectures did not help me
No because we had to go find our own resources to take the place of teachers not answering questions and the big knowledge holes in the lecture material.
the course was not well organized, sorry
I would have liked the professor to give class in live instead of just giving pre-recorded videos

Comments (My response was: -1)
Schedule and modules could have been clearer up front.

Comments (My response was: +2)
During the second half of the course it wasn't obvious how much of the video lectures should clear to have a good distribution of workload across the course and have productve Q&A sessions, although this was actually warned about one doesn't really know how it is until covering the material.



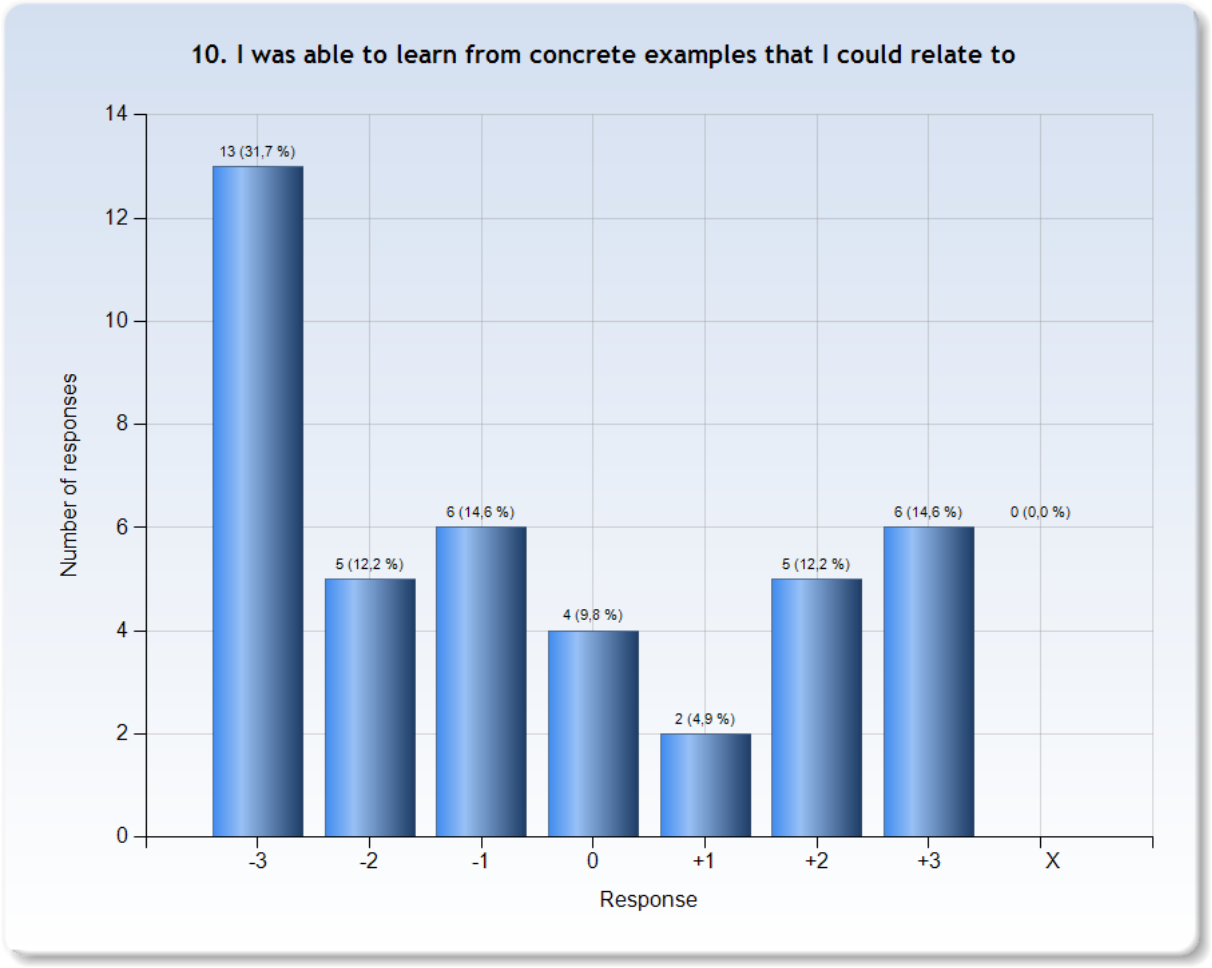
Comments

Comments (My response was: -3)
No, and they seem to despise me for it

Comments (My response was: -2)
I understood Aris but I barely udnerstood anything from Jens' lectures.
I understood the lectures, it's just that they had nothing to do with what we needed to know in the course.

Comments (My response was: -1)
After a long time with Google's help
depend on the teacher

Comments (My response was: +1)
Aris yes, jens sometimes no
I personally preferred the teaching of aris.

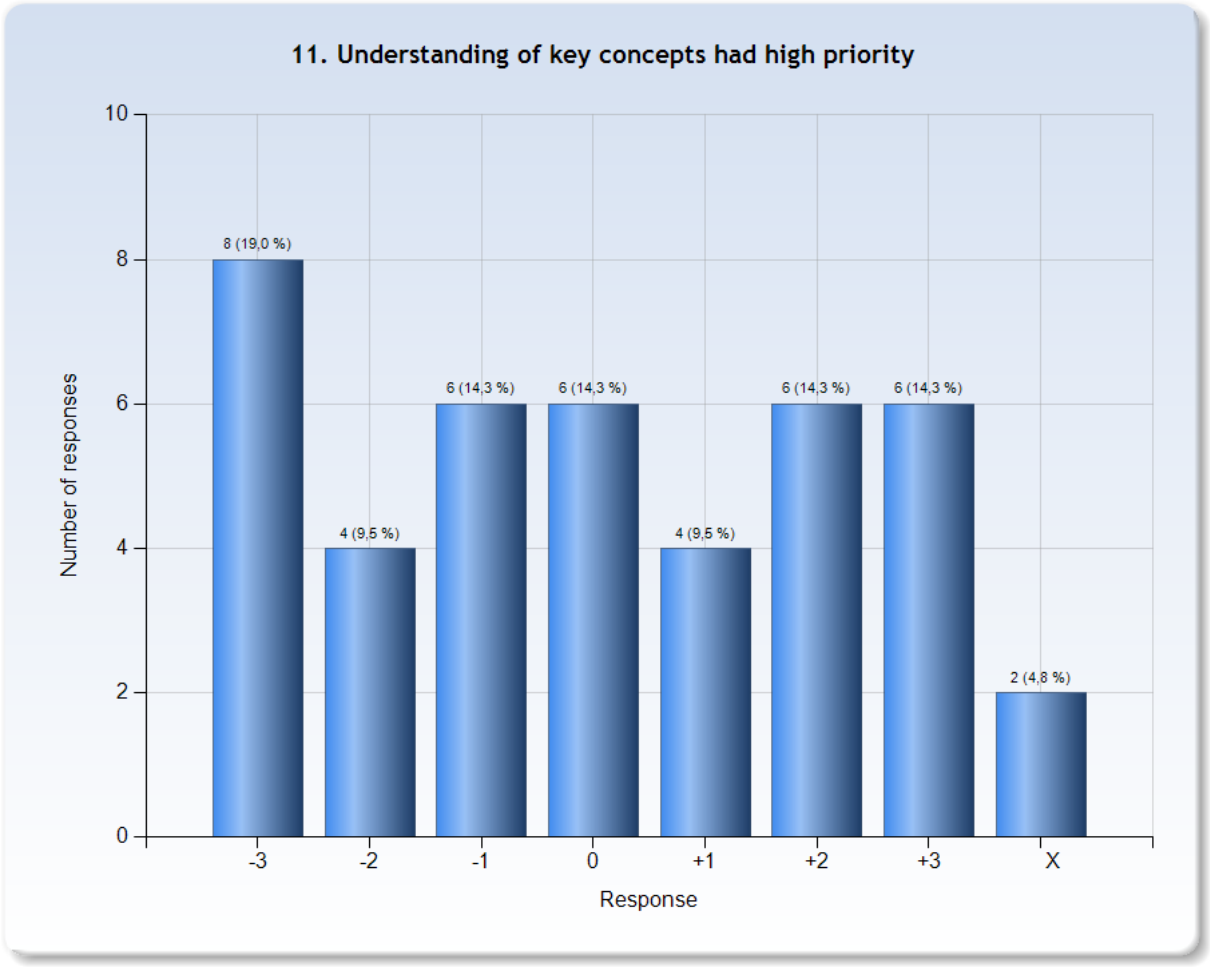


Comments

Comments (My response was: -3)
Absolutely not

Comments (My response was: -2)
Not really

Comments (My response was: -1)
I don't really see how what I implemented could be useful in a company, the problems often felt like technical exercises only.



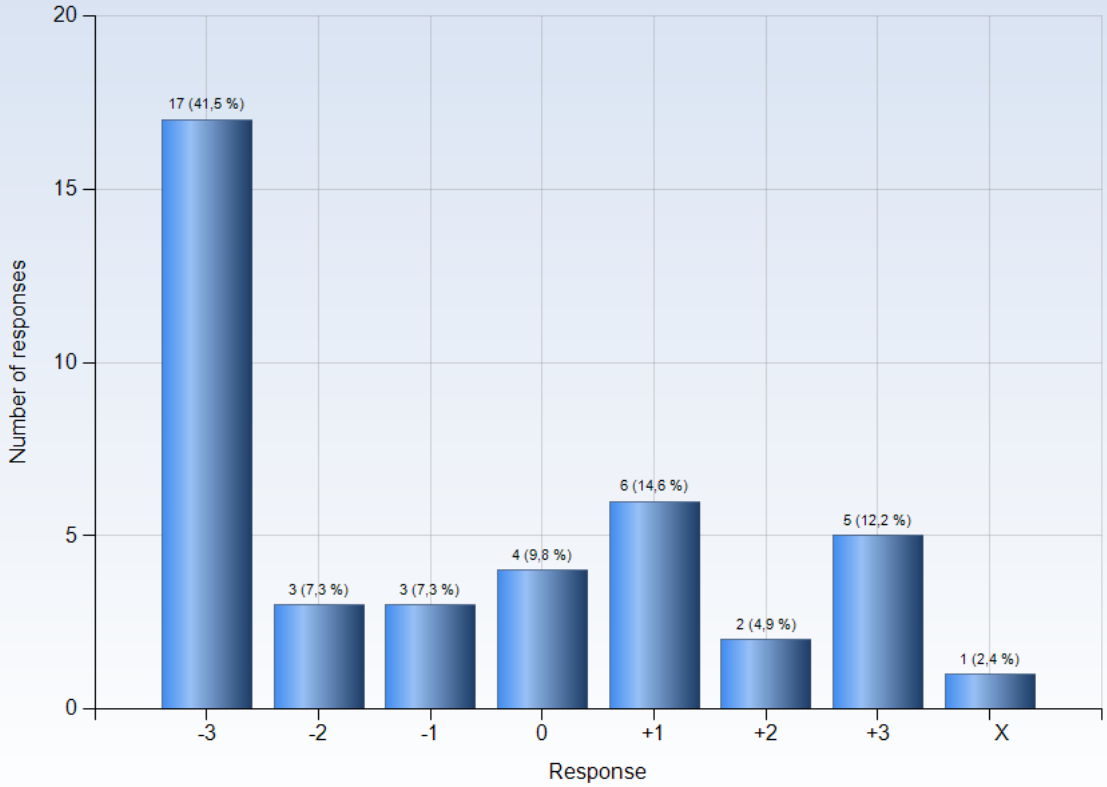
Comments

Comments (My response was: -3)
Figuring out what we needed to teach ourselves had high priority. There was so much time crunch in this course that it was just about getting some acceptable results down on paper. No "understanding" was even within reach during this course.

Comments (My response was: 0)
Implementation assignments had a high priority, because they took almost all my time, and the grade depended on it. As a result, I couldn't spend the time I wanted on understanding the techniques and the theory behind them.

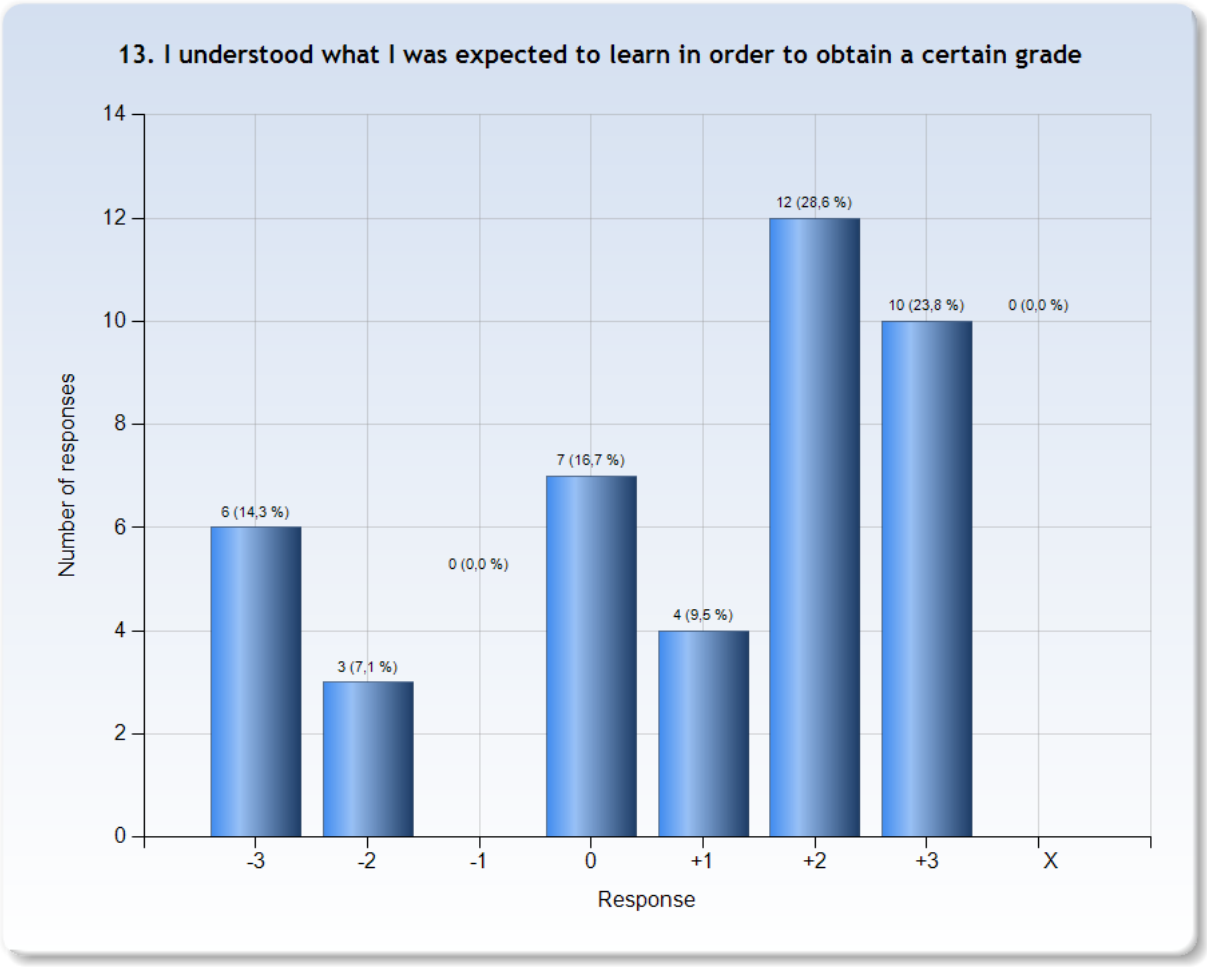
Comments (My response was: X)
What does this question mean?

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



Comments

(My response was: -3)
you mean the recorded lectures that contained about 5% of what we needed to know? Nope. The TA-led sessions helped, but there was so much of a gap between the assignments and the lectures that most of the time we didn't even know what to ask. I attended all of the TA led sessions and it was really difficult to understand the concepts.
Definitely no
The course book was my main source of help
(My response was: -2)
Jens' lectures didn't help me
(My response was: 0)
I think more exercise sessions, maybe even in smaller groups would be very helpful.



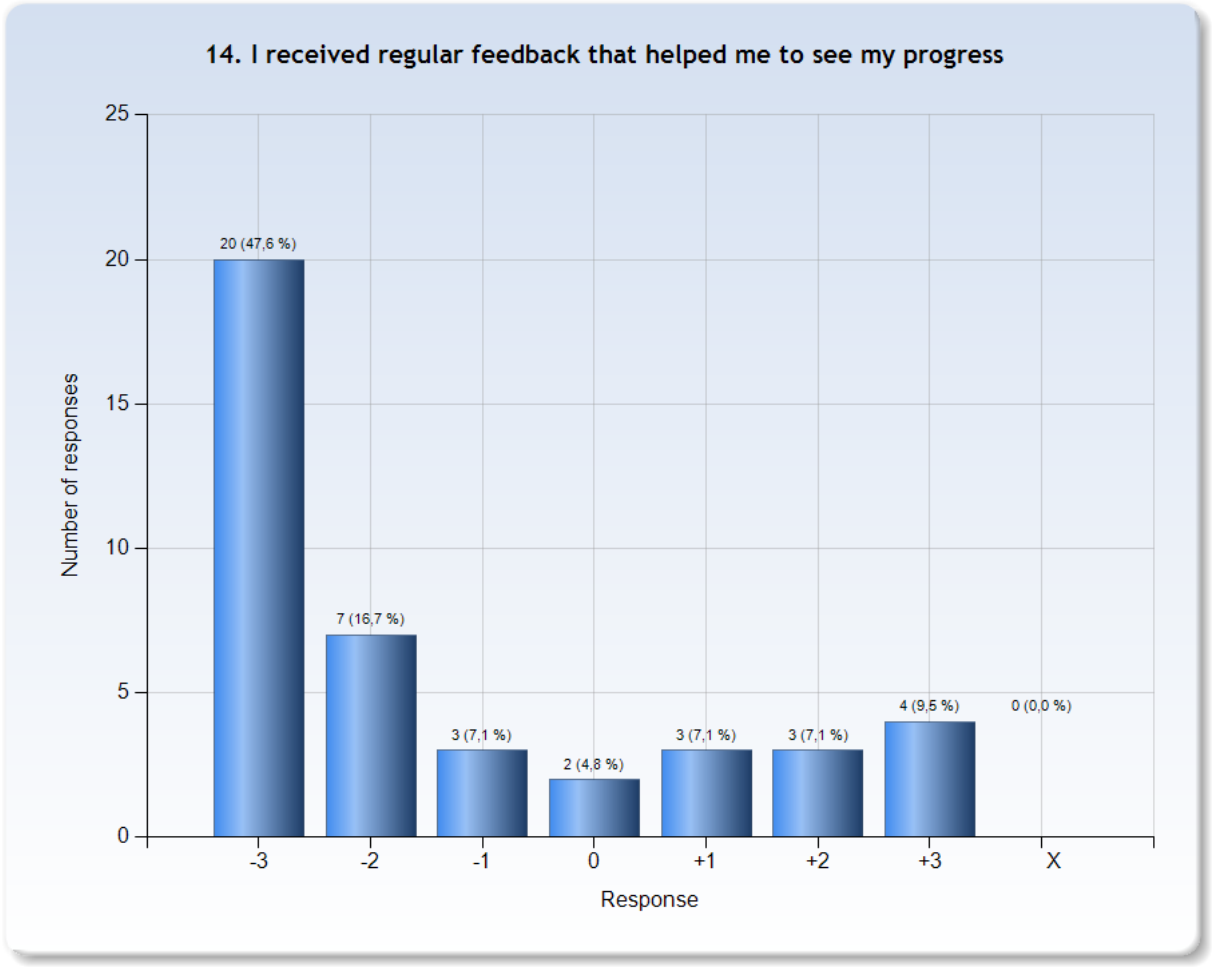
Comments

Comments (My response was: -3)
this changed depending on what the teacher wrote on slack for the day.

Comments (My response was: -2)
I needed to learn everything to get a passing grade - the grade then depended on how many hours I put in
Really complex system, get max grades on the first two assignments and a pass on the project but fail to send the 3rd gives a max E, really complex table that someone just made to visualise it.

Comments (My response was: 0)
I understood it but it was still arbitrary

Comments (My response was: +2)
"Project" grading is always nervous. I appreciated pass/fail on the project instead of grading like previous years. Much less stressful.


14. I received regular feedback that helped me to see my progress
Number of responses
25
20
15
10
5
0
20 (47,6 %)
7 (16,7 %)
3 (7,1 %)
2 (4,8 %)
3 (7,1 %)
3 (7,1 %)
4 (9,5 %)
0 (0,0 %)
-3
-2
-1
0
+1
+2
+3
X
Response

Comments

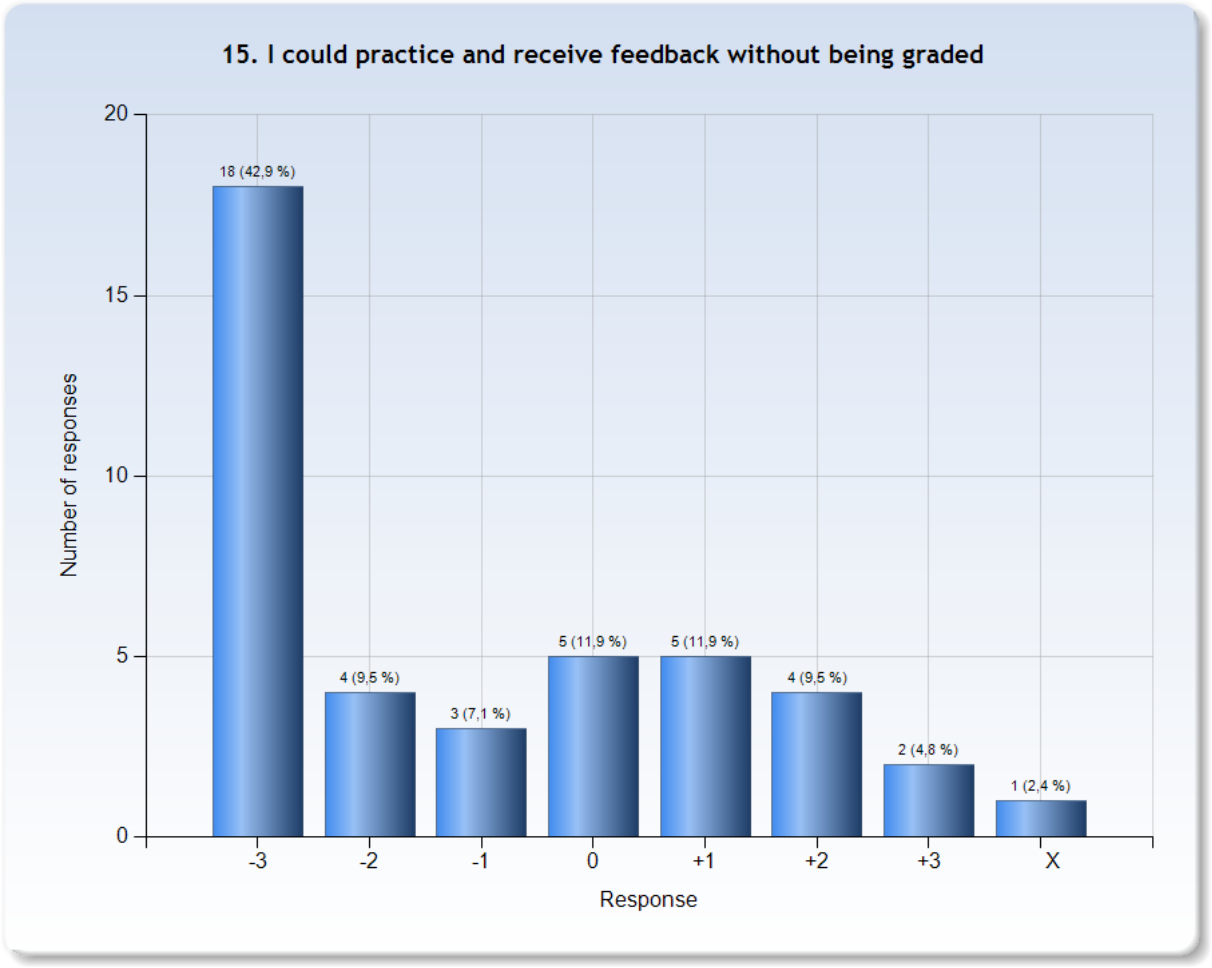
Comments (My response was: -3)
Only points on some assignments, not even that on some, no feedback whatsoever, none, nothing
The feedback came too late to learn from it
Feedback was usually very delayed(in terms of grades) if not to late
The professor didn't make class, we just had pre-recorded videos. The feedback received from the TA's regarding our assigents was really poor.

Comments (My response was: -1)
Grading could be a bit more elaborate. Maybe with hints on possible improvements. Nevertheless, grading and comments on the project paper were really insightful

Comments (My response was: +1)
The TAs did a great job with this.

Comments (My response was: +2)
Yes, TAs and Aris were all very helpful

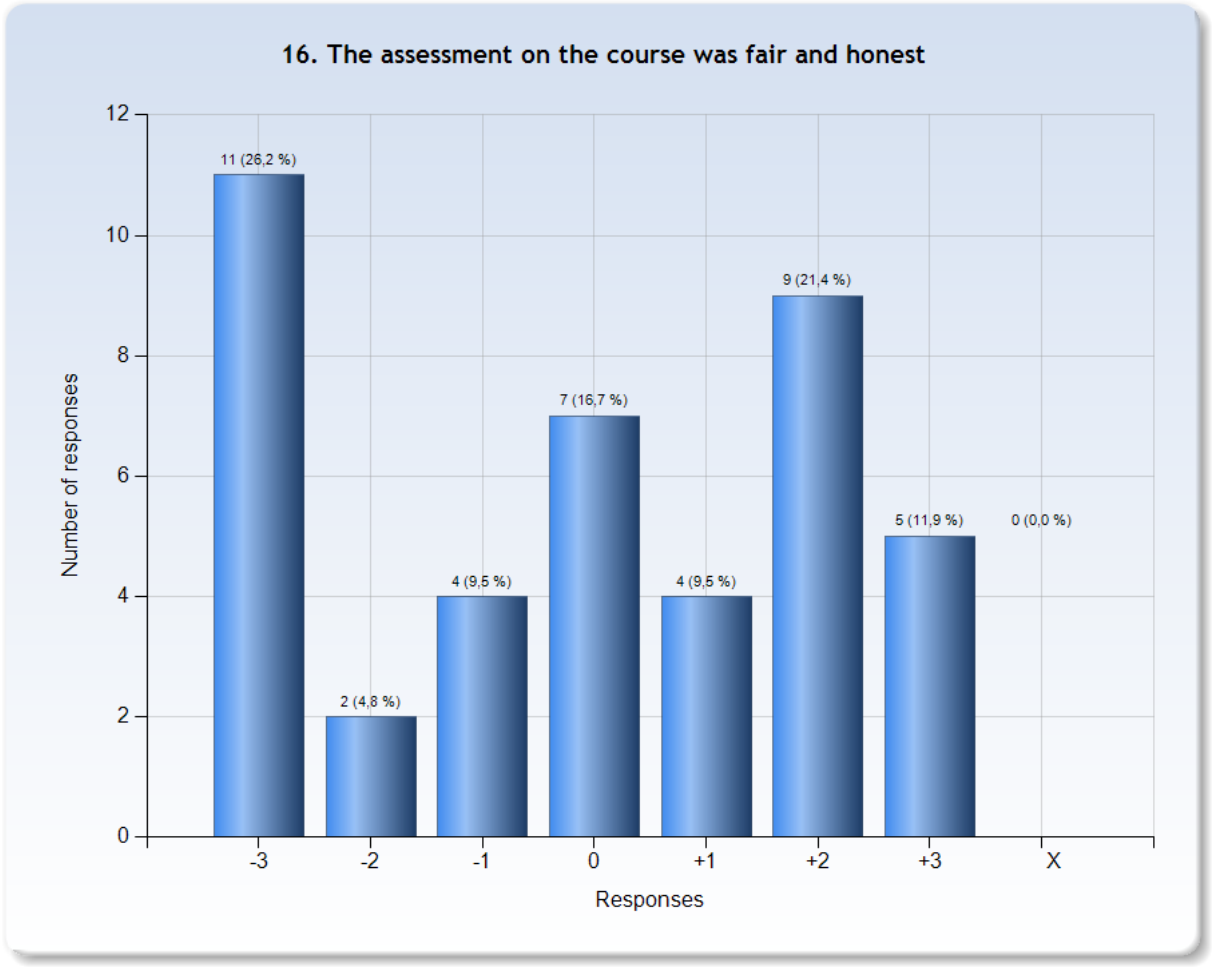
Comments (My response was: +3)
Thanks to the assistants for answering on slack



Comments

Comments (My response was: -3)
No, there were no supervised exercise sessions
I usually had no idea if what I did was what was expected or not. Exercise sessions help with some of that, but they were quite different from the assignments.
this was not made available during the course.
We didn't receive feedback from the TA's on many of the assignments we did. The highest feedback I received was a tick or a cross in an exercise

Comments (My response was: 0)
Not really as the exercise sessions we had had exercises which were different from the ones in the assignments.


16. The assessment on the course was fair and honest
Number of responses
Responses
12
10
8
6
4
2
0
11 (26,2 %)
2 (4,8 %)
4 (9,5 %)
7 (16,7 %)
4 (9,5 %)
9 (21,4 %)
5 (11,9 %)
0 (0,0 %)
-3
-2
-1
0
+1
+2
+3
X

Comments

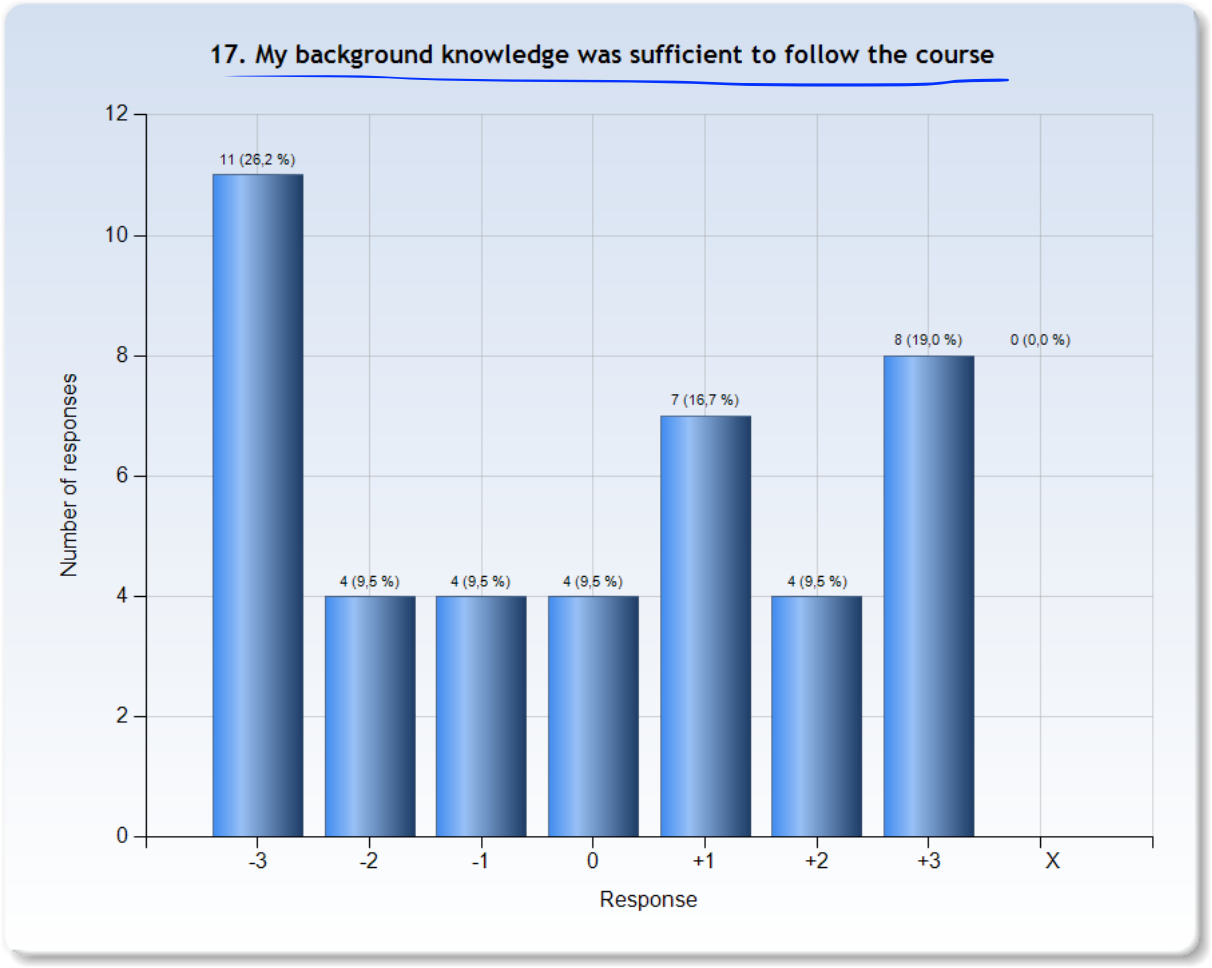
Comments (My response was: -3)
Jens and some TAs did not grade the assignments fairly.
Not at all. Everyone else in my project group got an A. I got an E. I submitted pretty much the same work. And there is no way to improve the work, and if you are late you don't get credit at all.
Many hard assignments were just pass or fail. I think I deserved a higher grade

Comments (My response was: -2)
I found the assessment was sometimes very arbitrary

Comments (My response was: -1)
even grading was wrong for a lot of students

Comments (My response was: 0)
The grading scheme is harsh. I don't agree with it that all major grading happens in the third assignment.

Comments (My response was: +2)
Yes, it was fair, even if very strict
Not completely assignment 3
Perhaps it was fair but for me not entirely clear, even though I got the grade I expected or perhaps a bit higher, I never knew if my performance in assignments 1, 2 and the project, which gained me the max grade in those components (and with spare points or very positive feedback) influenced the final grade or not.

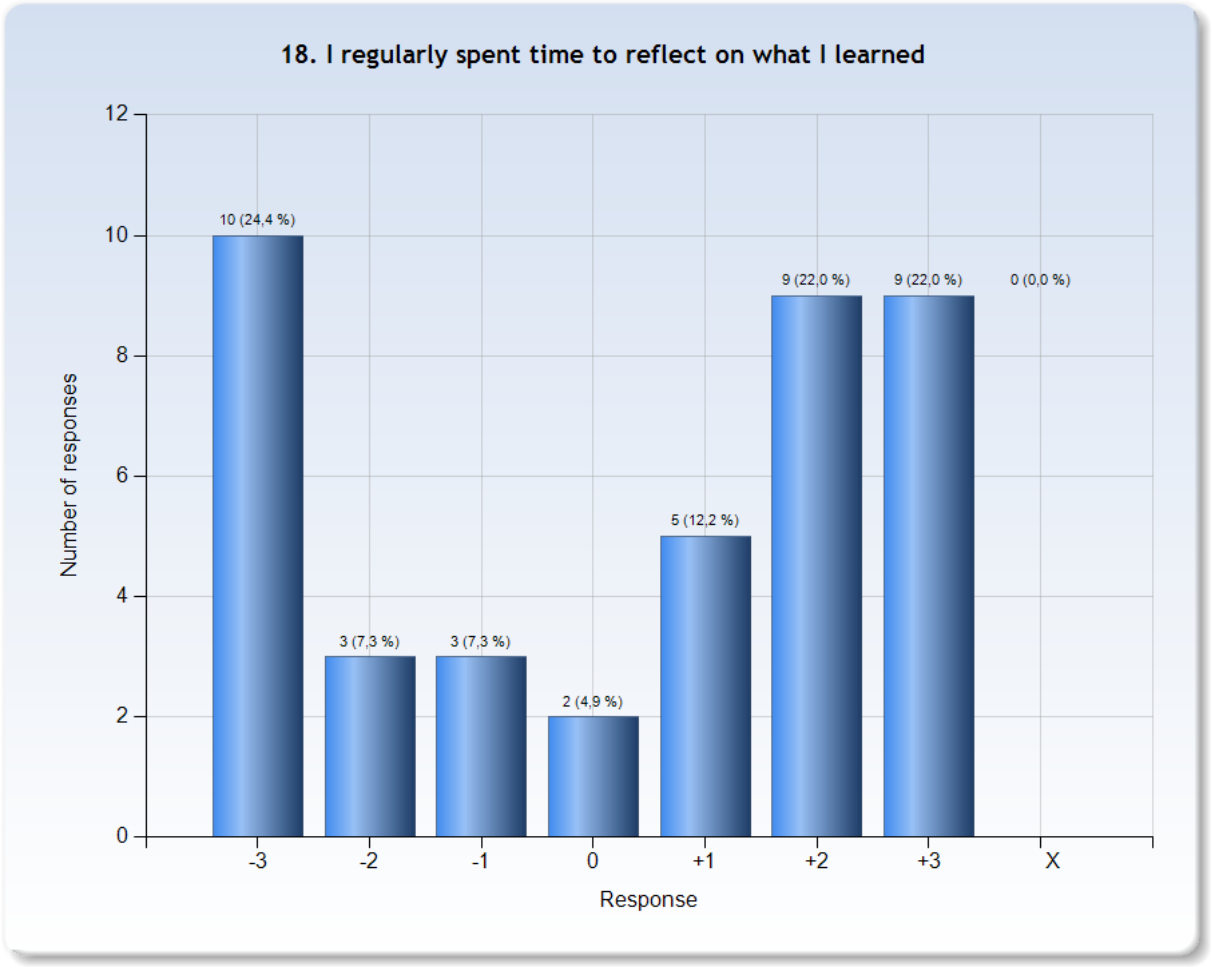


Comments

Comments (My response was: -3)
Teachers are in dream land

Comments (My response was: -1)
I didn't follow KTH's undergrad curriculum, maybe that's why I was lacking some of the math skills necessary for this course.

Comments (My response was: +1)
Missed some about tree structured data

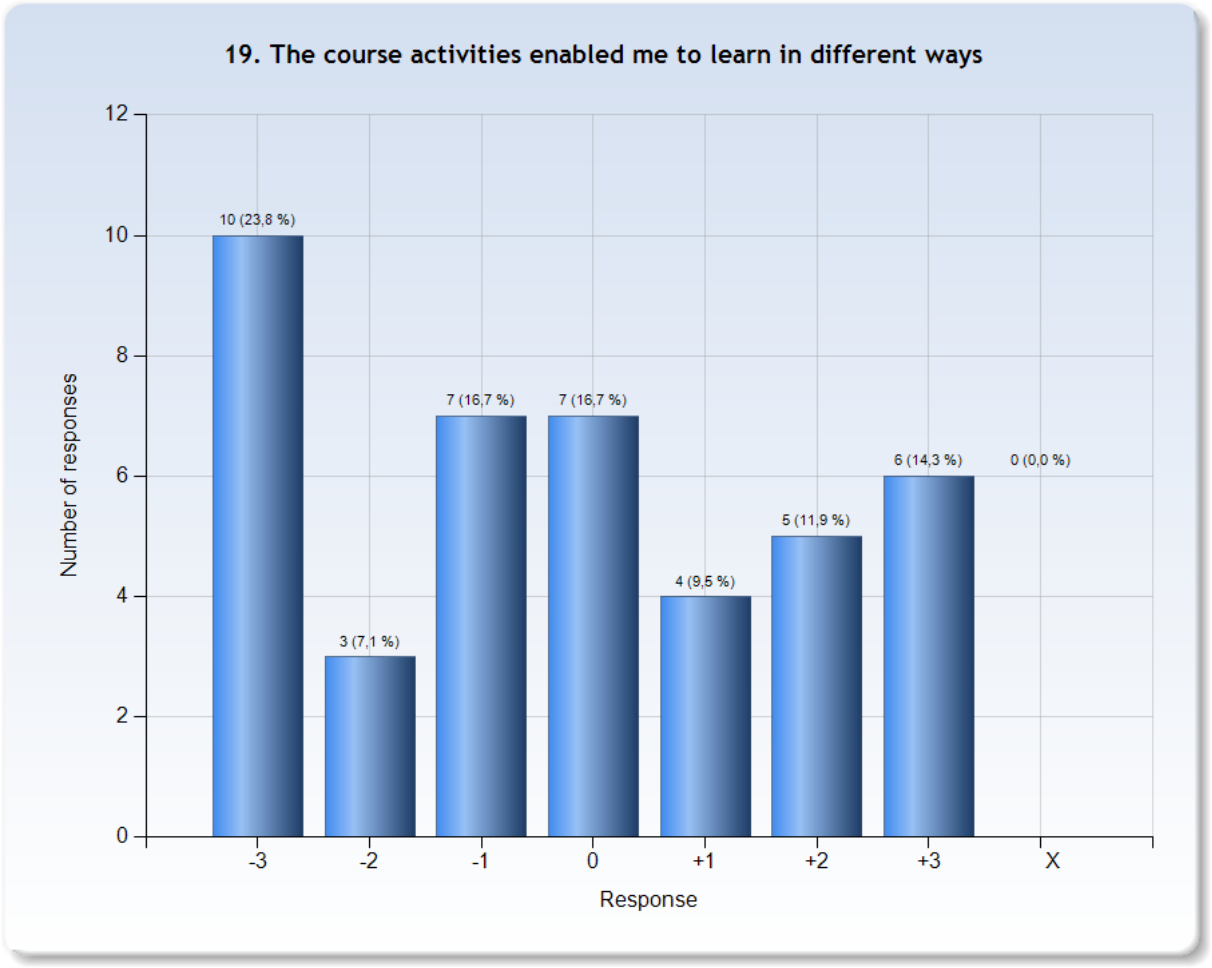


Comments

Comments (My response was: -3)
No time to reflect, I had to spend all of it coding, debugging, and writing proofs. I couldn't even follow most of the lectures that weren't directly related to the assignments.

Comments (My response was: -1)
There was no time left to spend

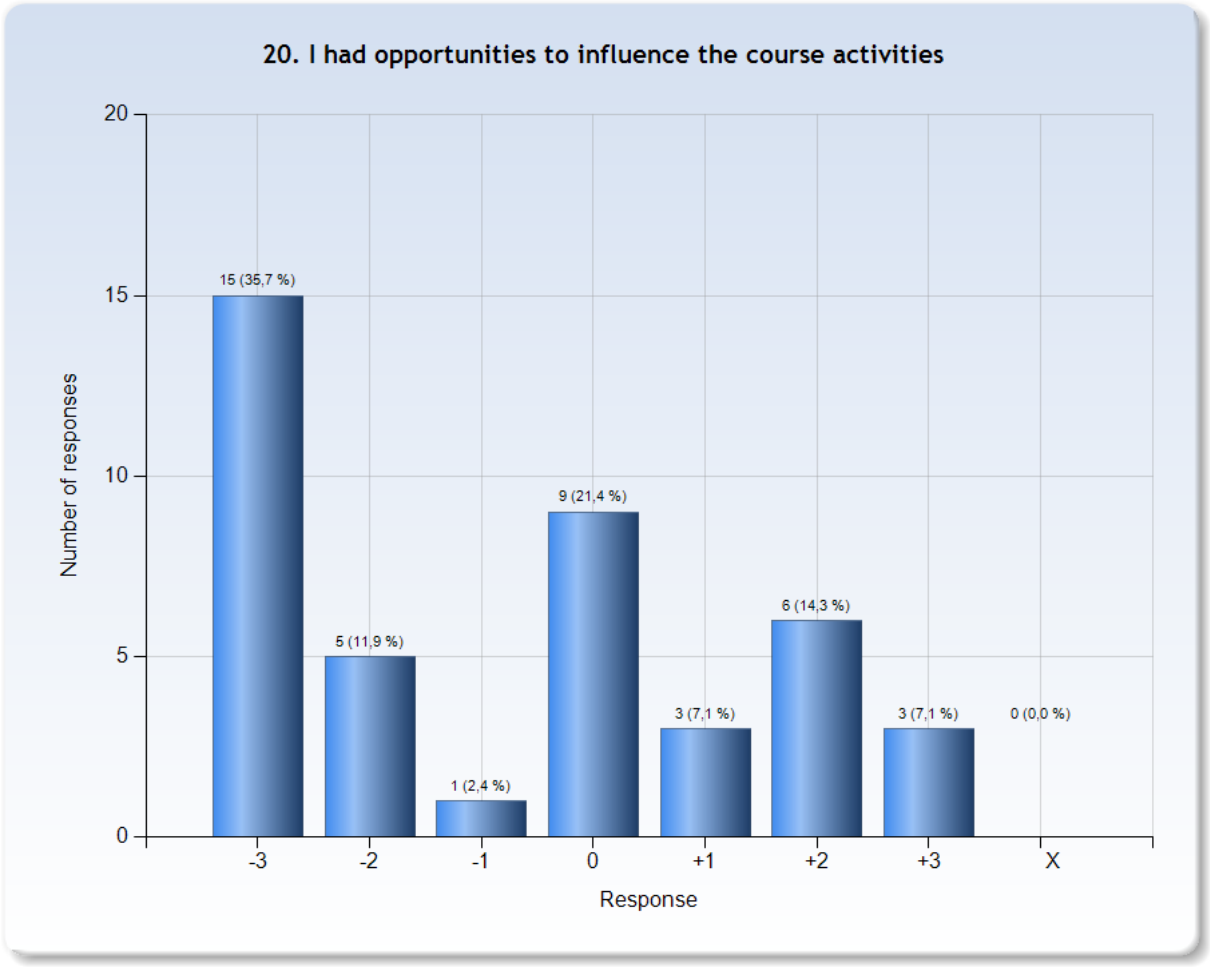
Comments (My response was: +1)
No time :)



Comments

Comments (My response was: -3)
We were only doing homework and watching video lectures
I learnt nothing to be honest, all I learned was very tailored to the sheets we had to do

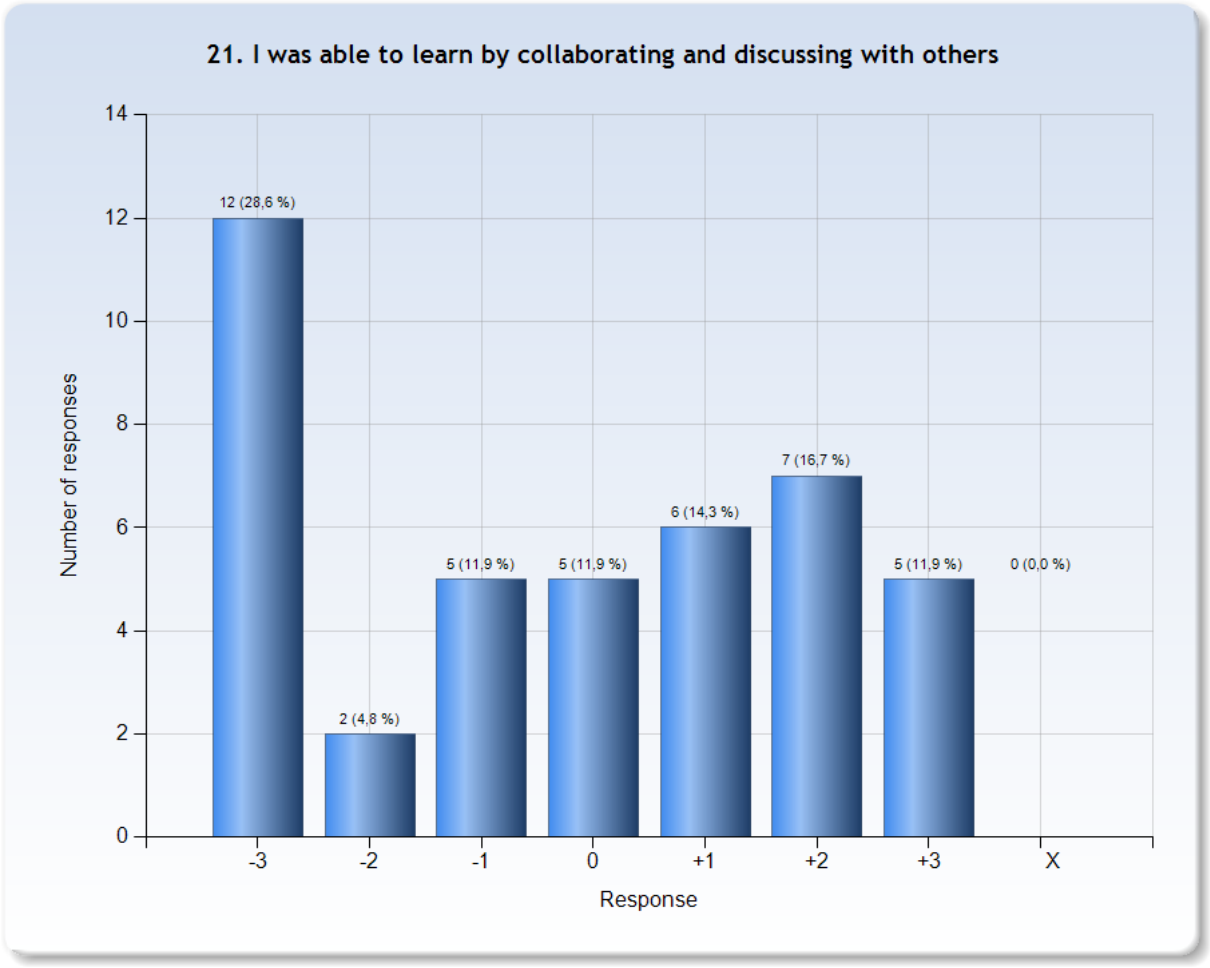
Comments (My response was: 0)
Slack and the TA sessions were helpful just not sufficient.



Comments

Comments (My response was: -3)
Many students, including me, asked for an exercise session, which was not held
we tried through slack, emails to the teacher, asking in lectures and asking the TAs. No changes were made.

Comments (My response was: +2)
the professor took feedback on the course seriously
The course is hard, no doubt. But it felt that the teachers were responsive and also open to adjustments of the submission deadlines and the contents. Thanks for that.


21. I was able to learn by collaborating and discussing with others
Number of responses
14
12
10
8
6
4
2
0
12 (28,6 %)
2 (4,8 %)
5 (11,9 %)
5 (11,9 %)
6 (14,3 %)
7 (16,7 %)
5 (11,9 %)
0 (0,0 %)
-3
-2
-1
0
+1
+2
+3
X
Response

Comments

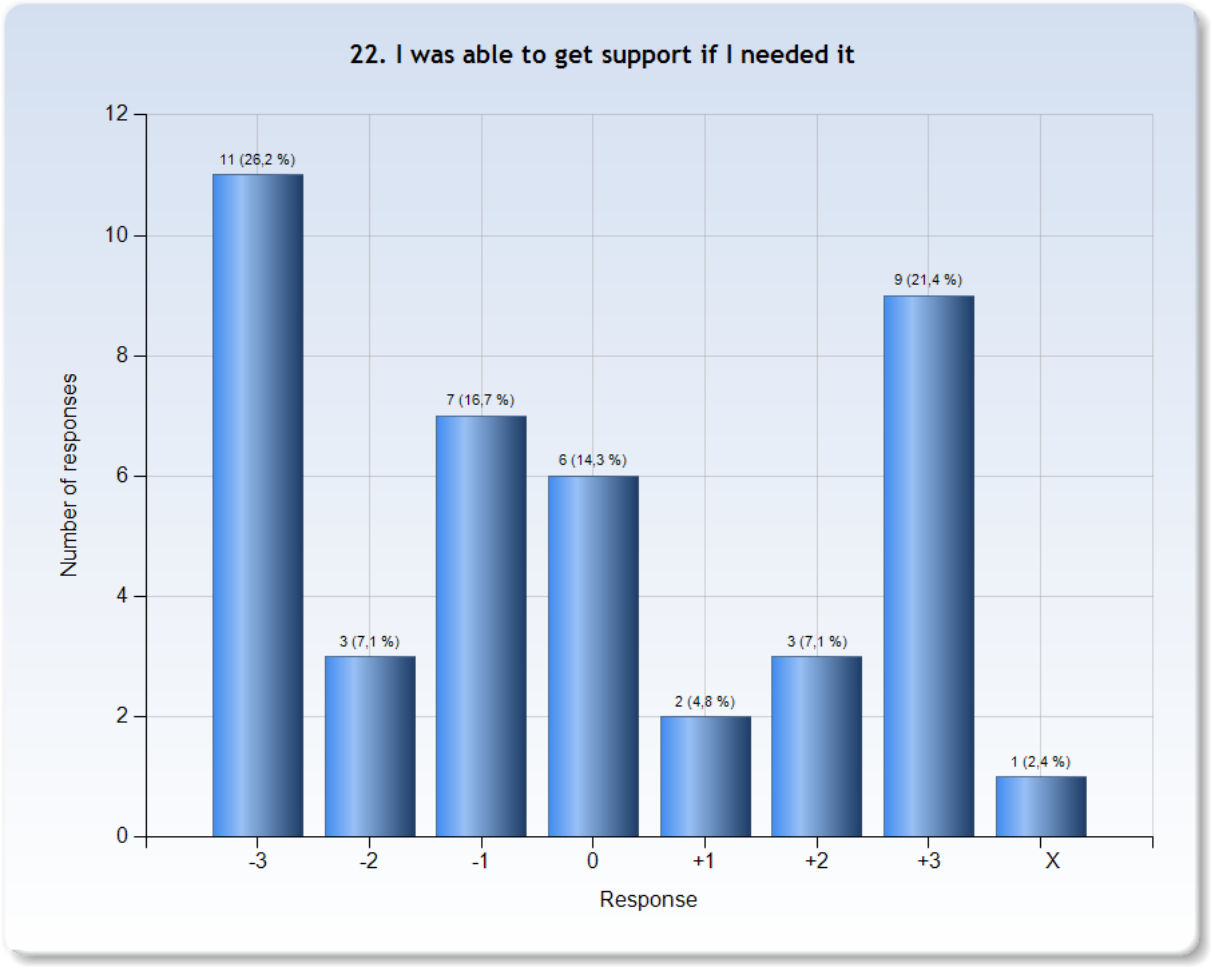
Comments (My response was: -3)
Explicitly forbidden
We were forbidden to discuss assignmnets
collaboration and discussion was only allowed on the group project, which didn't contain material from the assignments or lectures.
No collaboration was allowed

Comments (My response was: -1)
assignment are individual

Comments (My response was: +1)
The group project helped to learn from other people

Comments (My response was: +2)
I found the slack channels helpful eventually

Comments (My response was: +3)
I don't think most students would have passed if it weren't for mutual help. Clarification of the rules about exchanges between students made that easier, and should probably be done at the very start of the course.



Comments

Comments (My response was: -3)
TAs gave very vague answers, careful not to help with homework

Comments (My response was: -1)
Not enough help sessions for the last assignments, which made them very stressful, especially since they are the hardest and basically determine the whole grade.
this got a little better about 2 months into the course when some TAs arrived - they were awesome but way overloaded.

Comments (My response was: +3)
Teachers were responsive on slack and the peers were extremely active in replying to questions