

COURSE ANALYSIS, postgraduate course

Third cycle courses, EECS School, KTH , from 2018

An asterix (*) denotes non-compulsory data.

Course data

Course name: Music informatics

Course ID: DT2470

Credits: 7.5

Credits per module: 7.5

Time period for course: HT2020

Teachers: Bob L. T. Sturm and André Holzapfel

Examiner: Sten Ternström

Classroom hours: Almost twice a week for 2 hours

Nr of registered students: 21

Examination rate, in %: 100

Goals

Global course goals:

1. Overview of music informatics, its history and applications as well as a review of basic principles, such as music representation, analog to digital conversion and Fourier transform.
2. Feature extraction that shows how music data can be described in different domains e.g. time, frequency and time-frequency.
3. How music content at different levels of abstraction can be expressed and compared with distinctive features.
4. Ways to model music data by means of statistical machine learning methods. Evaluation of models of music data and their application in reality.

How the course design helps to fulfill these goals: Lectures, labs, project and written report

Pedagogical development - I

Changes made since previous time course was given:

- Added two more lectures to give more time for content
- Added python programming tutorial
- Broke Lab 1 into two labs
- Reviewing labs after hand-in during class (perhaps make one student group responsible for presenting their solutions)

Course evaluation; comments from students

Based on the anonymous questionnaire.

Evaluation response rate: 38%

Overall student view*

Positive comments: I felt that the difficulty of the course was completely reasonable for this level of my studies, I had most of the relevant knowledge needed and the rest was supplied in the first few lectures.

The practical lab work was closely related to the lecture which helped to really understand the material

The content was very interesting and well chosen, all parts of the course felt relevant and interesting. Good lectures and informative labs.

This course is on the very boarder between theory and practice, which is not the case for most informatics/data sciency courses. Getting so close to actual applications is really great.

Getting to learn signal processing, ML and understand how it all connects for practical applications. Doing a project as examination instead of an exam. An exam could be useful but I like the focus on labs and project based on the theory learnt

Great labs

One of the best courses I've taken

Giving a course to few people seems like it's a difficult thing, honestly. Given the pandemic situation, good job seeing it through!

For me it was absolutely perfect. It really deepened my machine learning understanding as well as knowledge about different ways to represent music

Negative comments:

I felt a lack of interaction with the other course participants

Pre-knowledge, comments*

Course design, comments*

Literature, comments: none

Examination, comments: Grading just based on projects that vary widely is hard to do completely fair

It maybe would have been nice to have some part of the course where you get to interact with the other course participants, for example a lab or project done in pair och group. Individual assignments however give you a lot of freedom with what you are doing, so I am somewhat ambiguous to this.

I think there is enough room to add a fifth lab. It could be to split lab 3 into two (so that you do both variants) or something else entirely.

To have lab-help session a few days later than the starting day. So one has a chance to work a little and have time to formulate questions. When the lab session was the same day as the lab began, I felt that I hadn't gotten far enough to have questions and instead got stuck a few days later and had to contemplate if it was worth sending an email or just spend a little too long on figuring it out myself.

Course teacher's impressions from the evaluation

Comments: The student observations align with my own as to what changes should be made in the next edition.

Course teacher's summary

Overall view: The course ran smoothly, and pretty much followed the course book.

Positive comments: Attendance was ok throughout the course. Attendance started to

decrease toward the end. Though the course was delivered online for the most part, it worked well.

Negative comments:

View on pre-knowledge*

View on course design* The project quality was more spread this time, with some very good, and some very poor (and failing).

View on course material: The material is timely and appropriate for the learning objectives. The labs provided hands-on experience.

View on examination: Grading should include the labs (rather than being just pass fail).

Pedagogical development - II

Outcome of course changes made since last time course was given:

- Added two more lectures to give more time for content: This gave much more room to the material and made the course feel less rushed.
- Added python programming tutorial: This helped some students catch up to the others in terms of abilities.
- Broke Lab 1 into two labs: This worked very well.
- Reviewing labs after hand-in during class (perhaps make one student group responsible for presenting their solutions): I didn't make groups present their work, but I did review labs in class.

Changes to be made before next time course is given:

1. Make all labs available at the start of the course. Then the students will have a chance to look at the labs before the scheduled lab time.
2. revise the intended learning outcomes and assessment criteria
3. Make labs be scored to count toward grade.

Other

Comments*

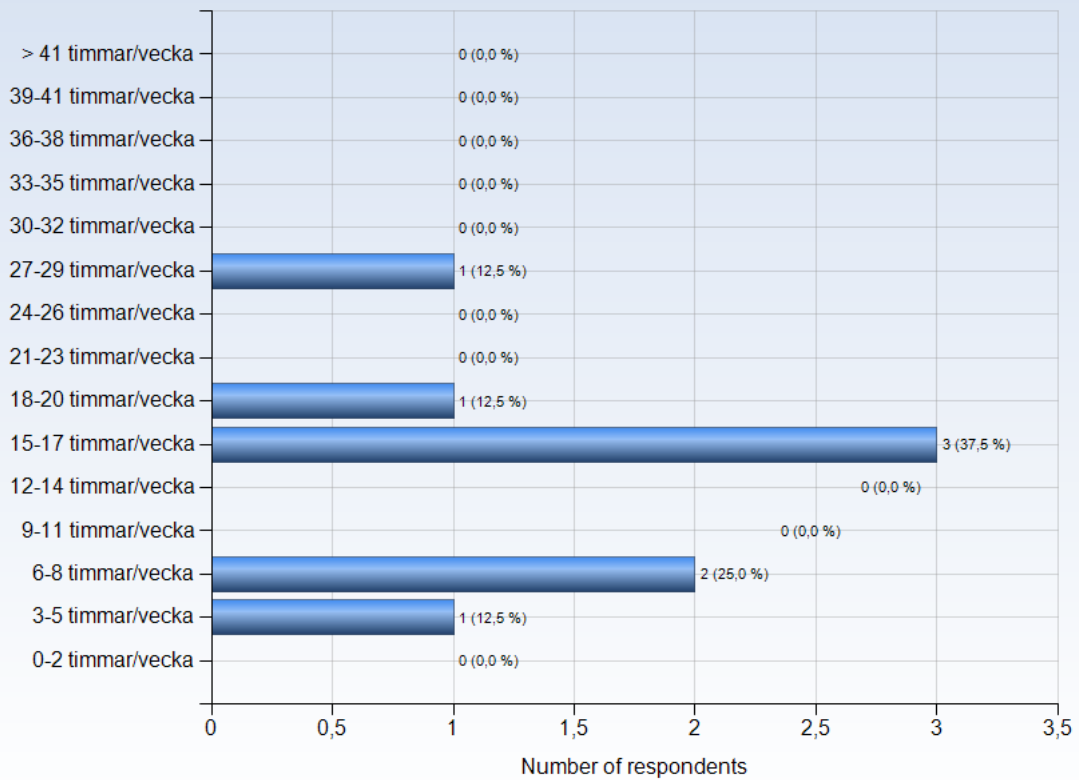


DT2470 - 2020-10-12

Antal respondenter: 21
Antal svar: 8
Svarsfrekvens: 38,10 %

ESTIMATED WORKLOAD

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



Comments

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

Differed depending on labs, during the project it has been significantly more than that.

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

Very high uncertainty in the estimate

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

The workload was mainly in reading course material and lab-work



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:

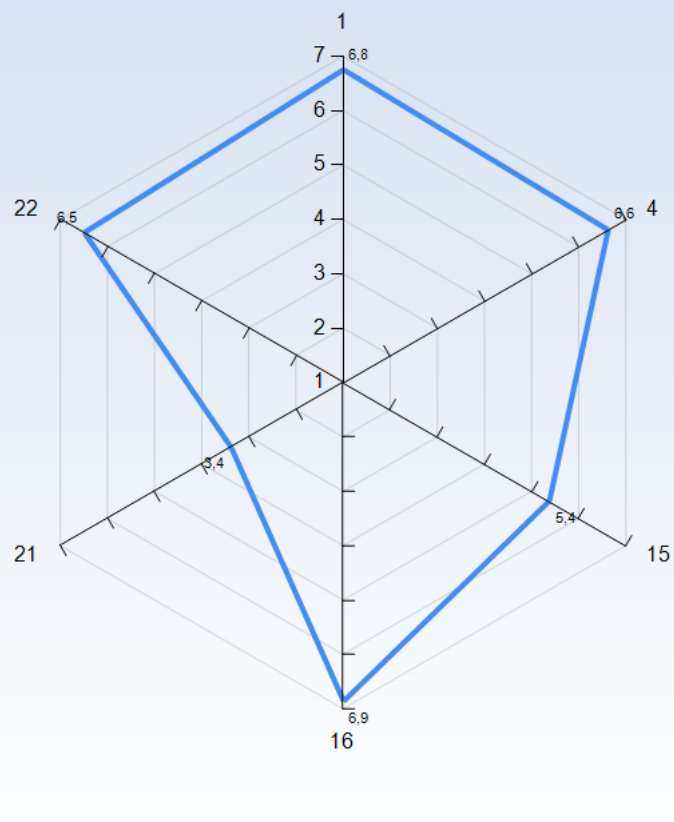
1 = No, I strongly disagree with the statement

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.

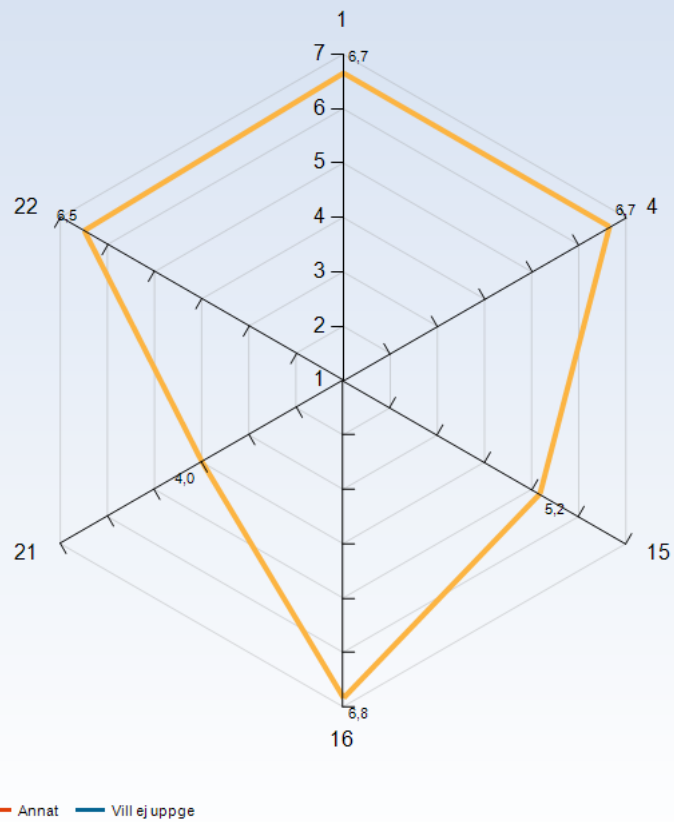
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

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

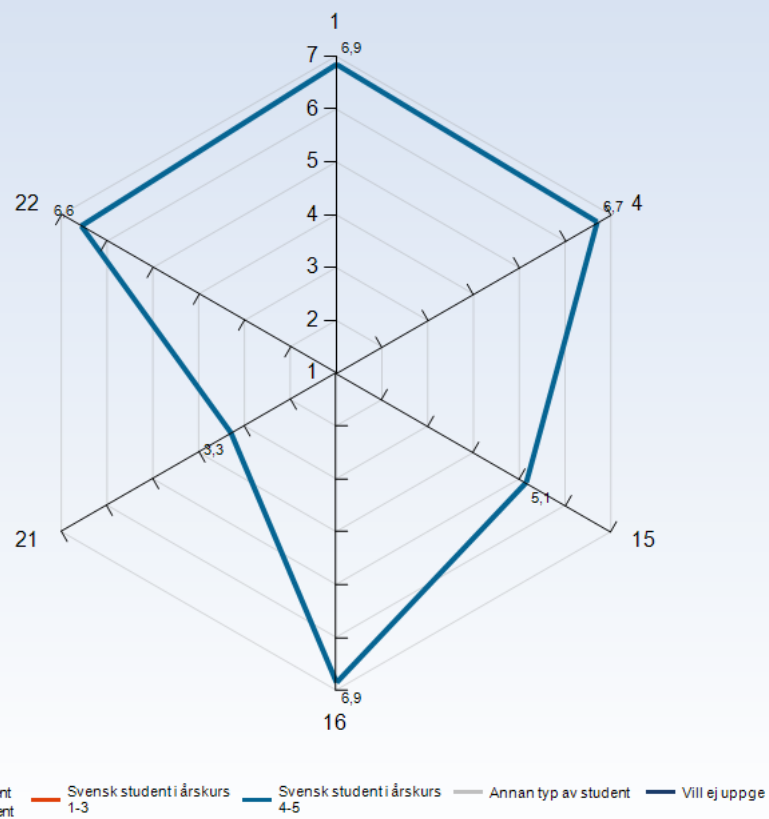
Comments (I am: Kvinna)

Hope there will be more girls taking this course in the future

Comments (I am: Man)

Did not feel that this effected my experience of the course.

Average response to LEQ statements - per type of student

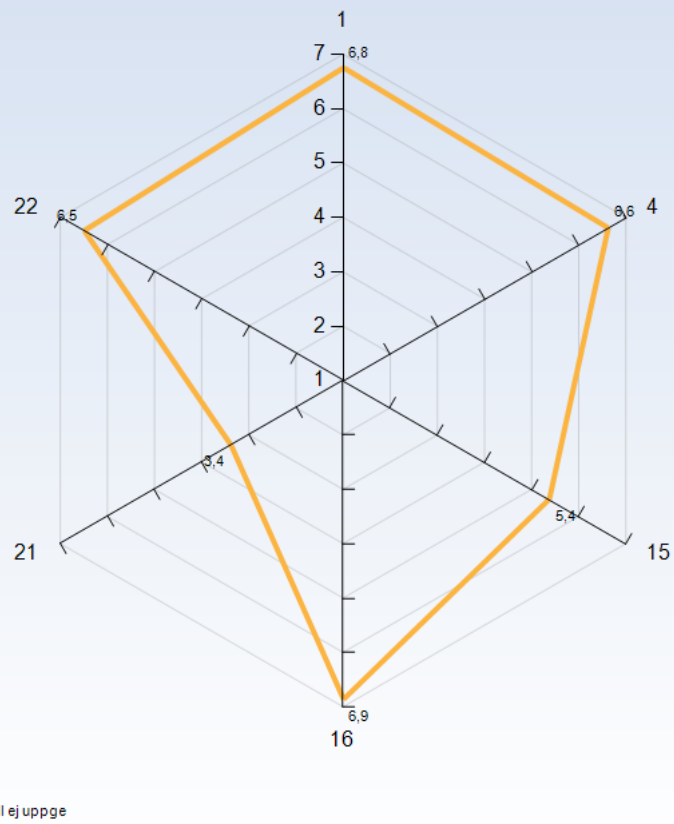


Comments

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

I felt that the difficulty of the course was completely reasonable for this level of my studies, I had most of the relevant knowledge needed and the rest was supplied in the first few lectures.

Average response to LEQ statements - per disability



Comments



GENERAL QUESTIONS

What was the best aspect of the course?

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

Super interesting topics, great lecturers.

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

The practical lab work was closely related to the lecture which helped to really understand the material

The content was very interesting and well chosen, all parts of the course felt relevant and interesting. Good lectures and informative labs.

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

Interesting topics. Really good lectures even though they were at distance

This course is on the very boarder between theory and practice, which is not the case for most informatics/data sciency courses. Getting so close to actual applications is really great.

Getting to learn signal processing, ML and understand how it all connects for practical applications. Doing a project as examination instead of an exam. An exam could be useful but I like the focus on labs and project based on the theory learnt

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

Great labs

What was the best aspect of the course? (I worked: 27-29 timmar/vecka)

Interesting labs!

What would you suggest to improve?

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

Can't think if anything

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

probably corona related, but being able to better work with other participants on the labs together

It maybe would have been nice to have some part of the course were you get to interact with the other course participants, for example a lab or project done in pair och group. Individual assignments however give you a lot of freedom with what you are doing, so I am somewhat ambiguous to this.

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

It has been a bit stressful to get things done in certain periods. Especially now at the end of the course when both the fun project and labs are to be done in parallel

I think there is enough room to add a fifth lab. It could be to split lab 3 into two (so that you do both variants) or something else entirely.

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

To have lab-help session a few days later than the starting day. So one has a chance to work a little and have time to formulate questions.

When the lab session was the same day as the lab began, I felt that I hadn't gotten far enough to have questions and instead I got stuck a few days later and had to contemplate if it was worth sending an email or just spend a little too long on figuring it out my self.

What advice would you like to give to future participants?

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

Enjoy :D

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

-

Do labs on time and attend the lectures.

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

Start labs early. Often quite time consuming



Is there anything else you would like to add?

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

One of the best courses I've taken

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

-

All in all a fantastic course! :)

Is there anything else you would like to add? (I worked: 15-17 timmar/vecka)

This course really has inspired me, so thanks for that!

Giving a course to few people seems like it's a difficult thing, honestly. Given the pandemic situation, good job seeing it through!

The accordion is always appreciated

SPECIFIC QUESTIONS

RESPONSE DATA

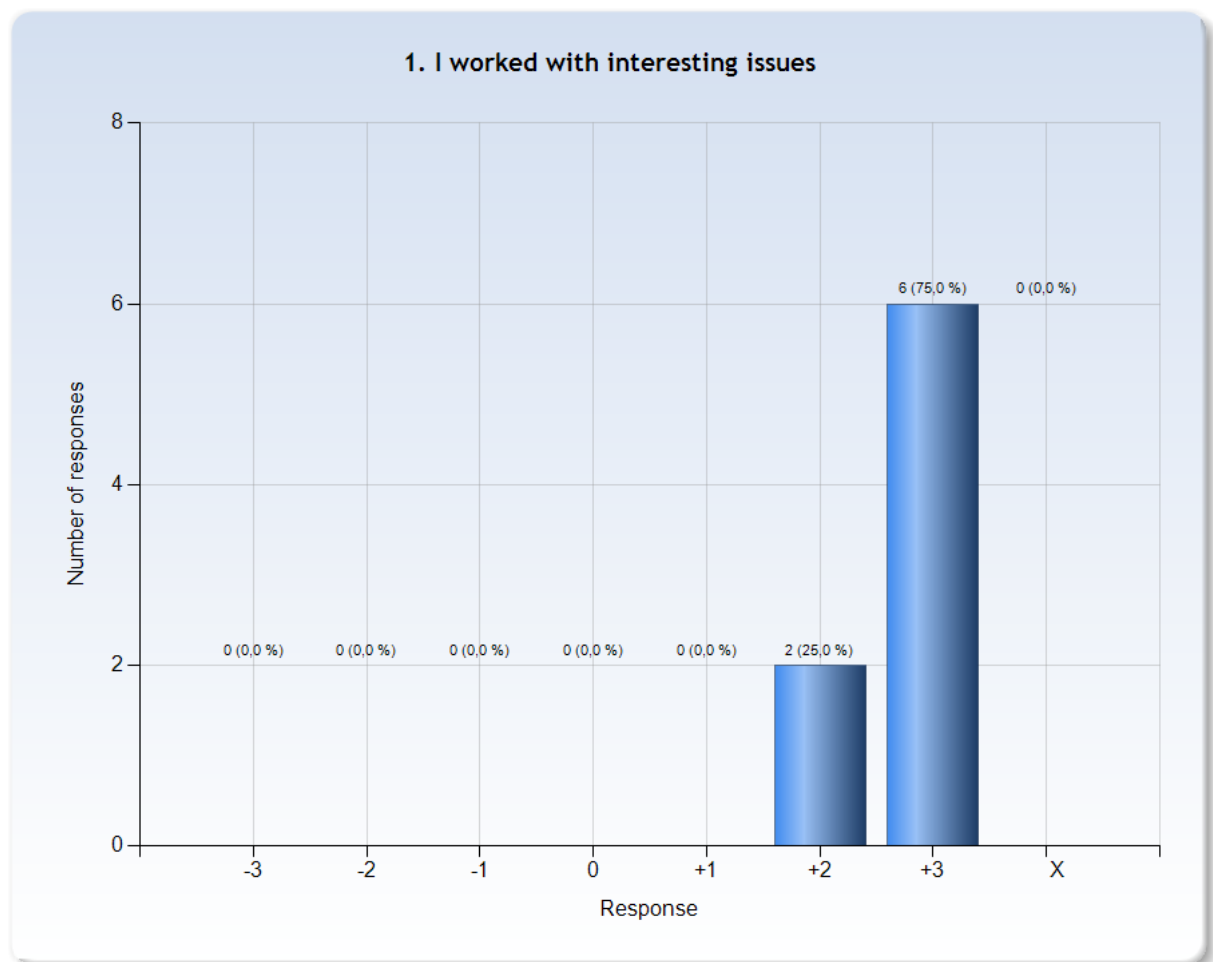
The diagrams below show the detailed response to the LEQ statements. The response scale is defined by:

-3 = No, I strongly disagree with the statement

0 = I am neutral to the statement

+3 = Yes, I strongly agree with the statement

X = I decline to take a position on the statement

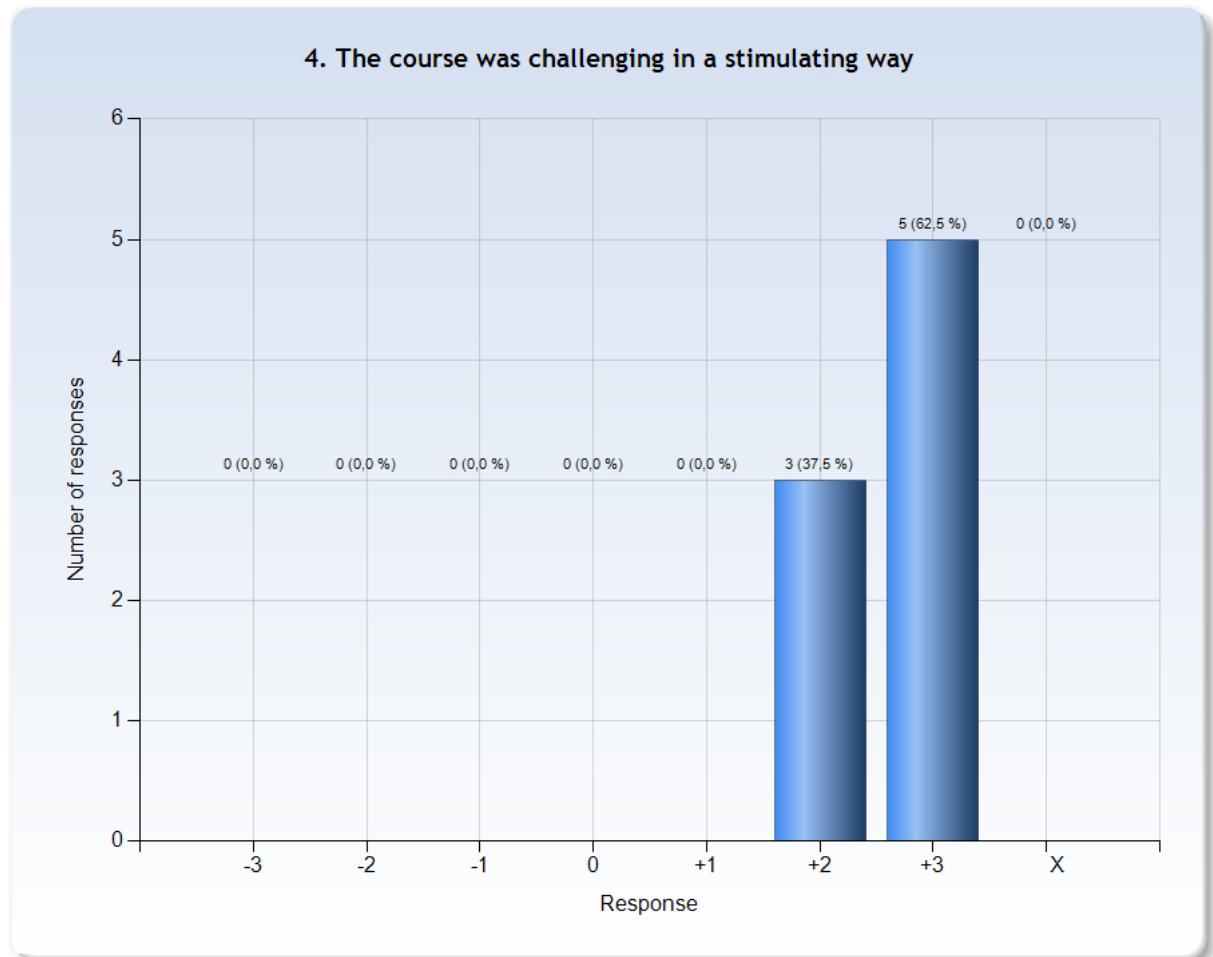




Comments

Comments (My response was: +3)

I really fun course with very well designed labs. Bob's lectures has been the best of all the different ones I've been to throughout my whole time at KTH. So thanks for that!!

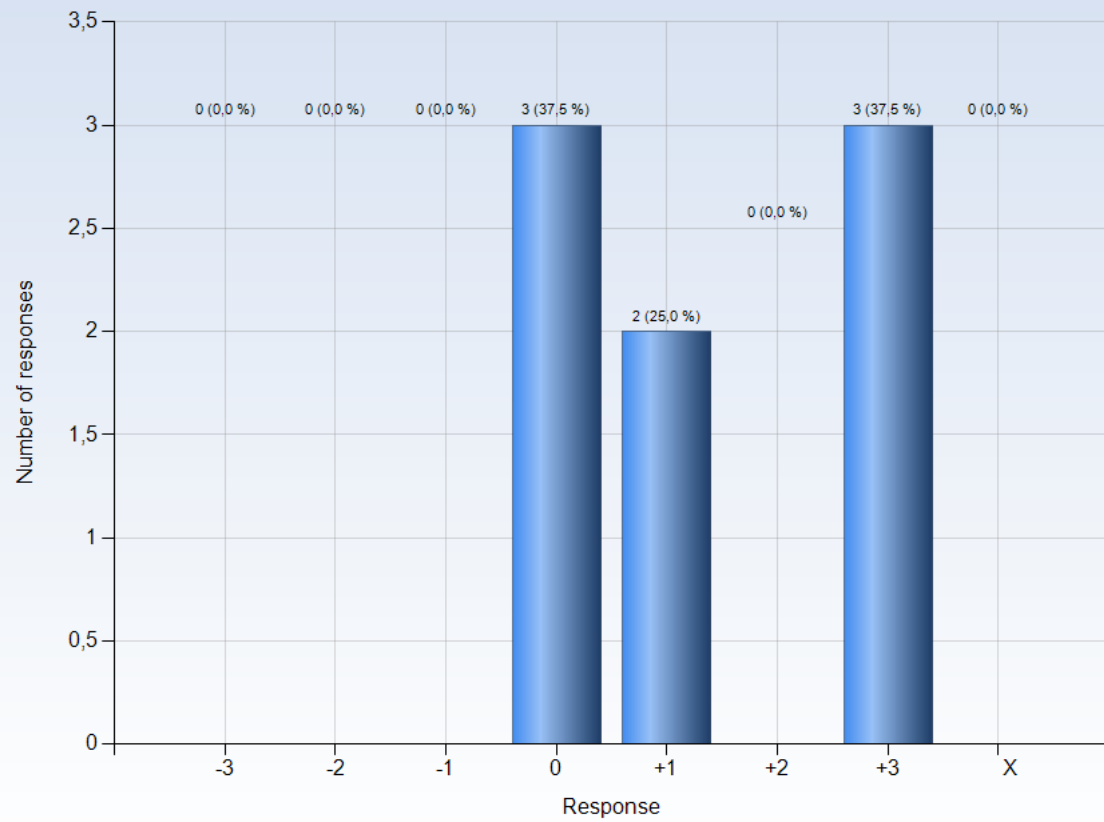


Comments

Comments (My response was: +3)

For me it was absolutely perfect. It really deepened my machine learning understanding as well as knowledge about different ways to represent music

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

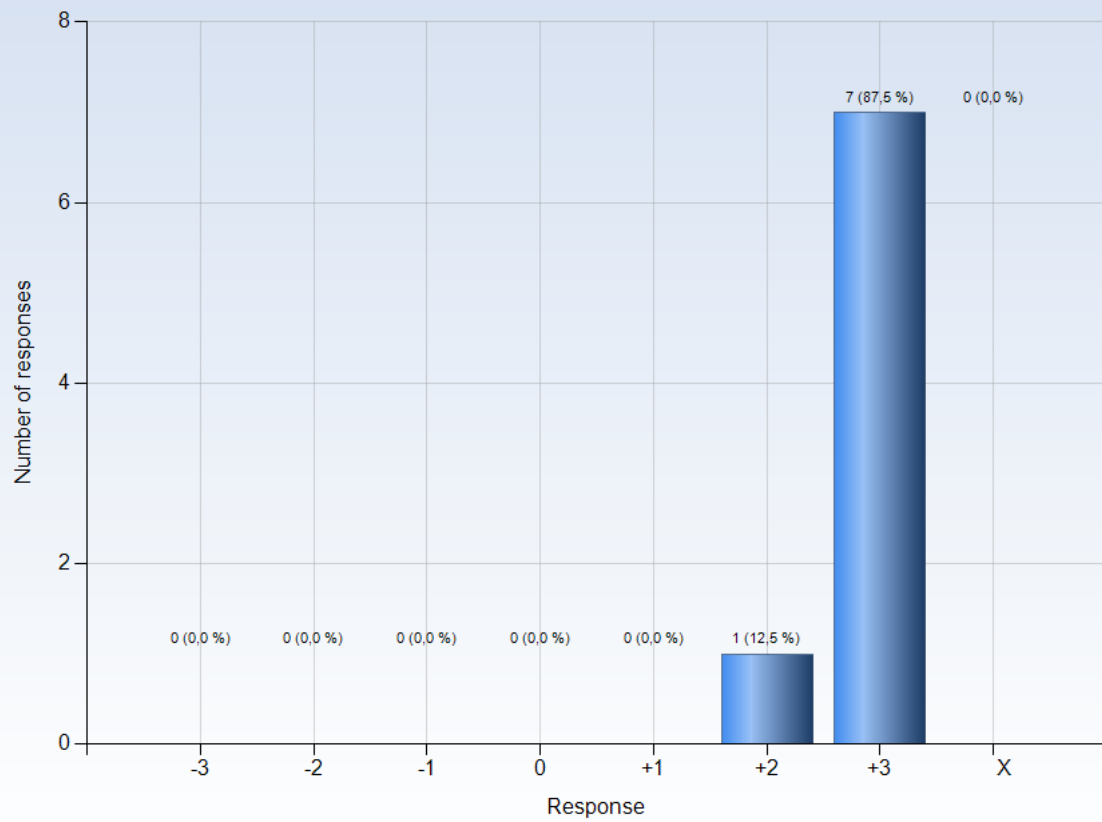


Comments

Comments (My response was: 0)

I never attended "practice" so I can't be certain

16. The assessment on the course was fair and honest

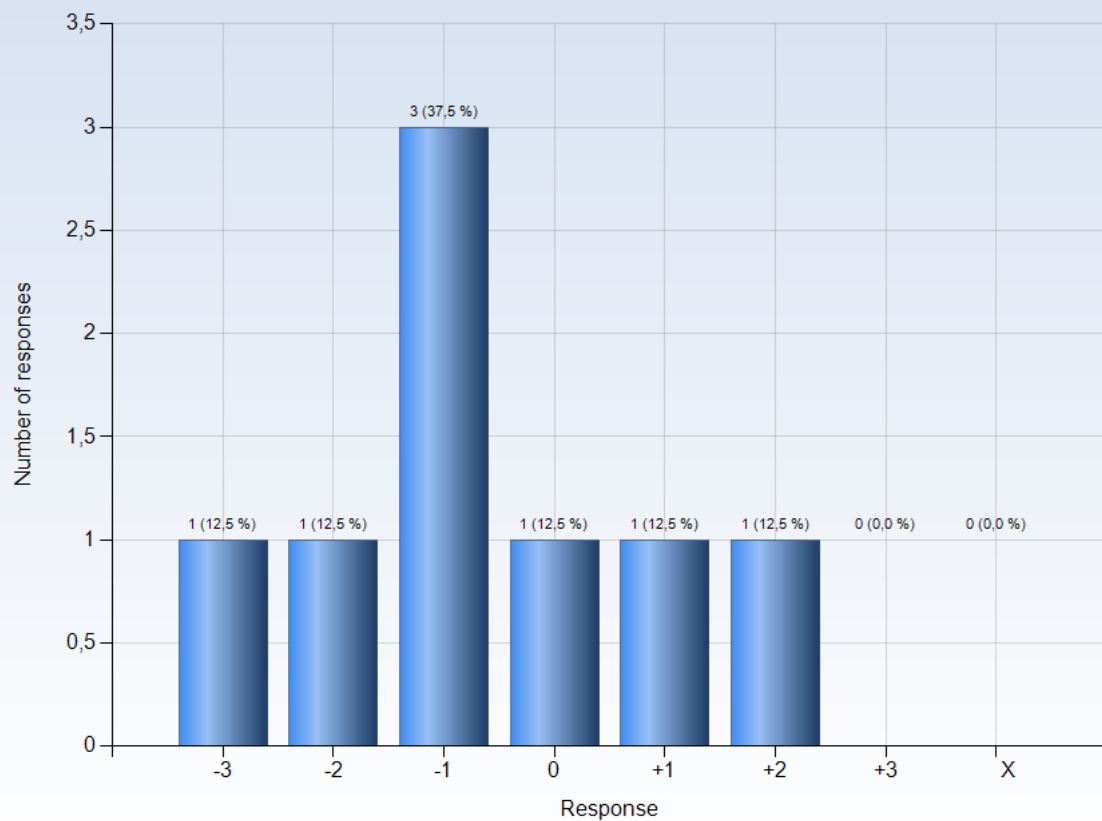


Comments

Comments (My response was: +2)

Grading just based on projects that vary widely is hard to do completely fair

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



Comments

Comments (My response was: -3)

Not that much. Since most of the teaching has been from distance and all the labs and the project was done individually

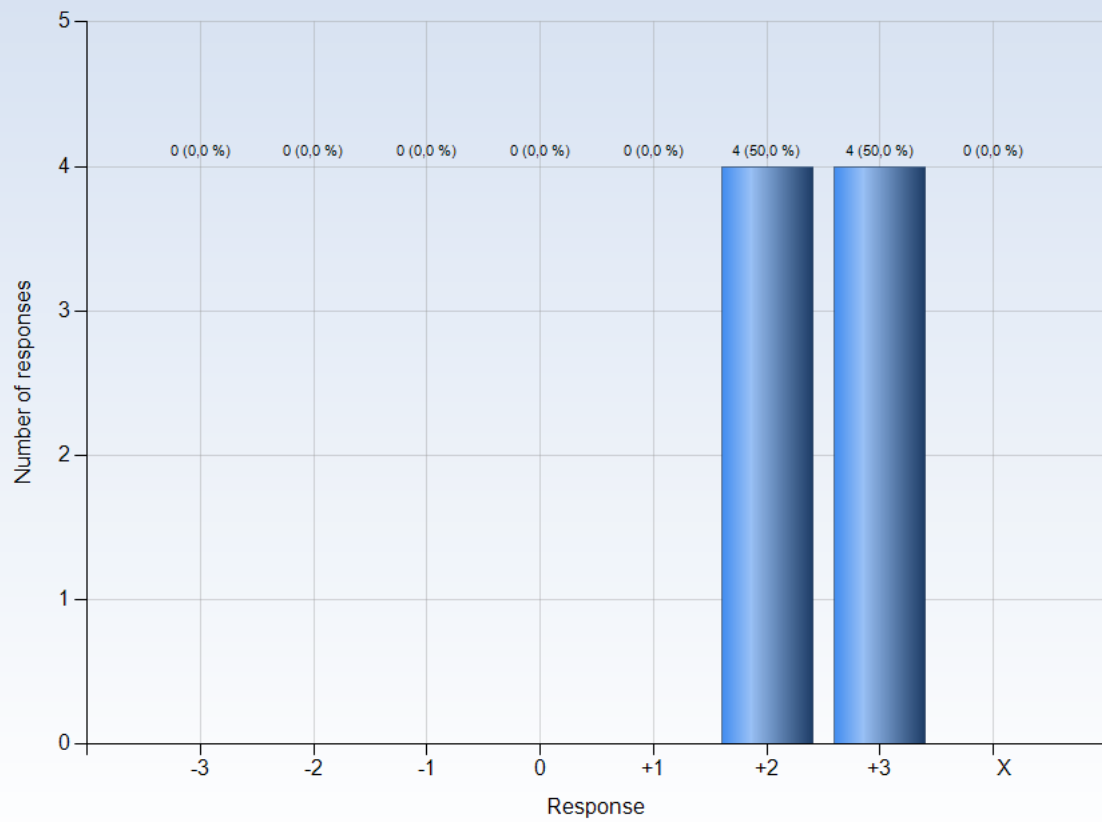
Comments (My response was: -2)

I felt a lack of interaction with the other course participants

Comments (My response was: -1)

Could discuss with others, but all labs and projects were individual.

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



Comments

Comments (My response was: +2)

I never used the opportunity to get support so I can't be certain

Comments (My response was: +3)

A big plus for how quickly I was able to ask questions and receive answers by mail from both of the teachers