



Report - SG1130 - 2020-02-25

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

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

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

Philipp Schlatter, pschlatt@mech.kth.se

DESCRIPTION OF THE COURSE EVALUATION PROCESS

Describe the course evaluation process. Describe how all students have been given the possibility to give their opinions on the course. Describe how aspects regarding gender, and disabled students are investigated.

The course form LEQ was posted online at the time of the exam. All students were written to (by Canvas functions) repeatedly to ask them to contribute to the online form. Unfortunately, even though reminders were sent, only 14 students answered the online form which corresponds to 6% of the students. This makes the answers quite difficult to interpret as the answers may not be representative.

Probably more relevant were the two "Länkmöten" during the course, organised by the CMAST programme. In both of these meetings, I have been present and ready to take any comments by the students. I will use the information from those meetings also in my course analysis.

DESCRIPTION OF MEETINGS WITH STUDENTS

Describe which meetings that has been arranged with students during the course and after its completion. (The outcomes of these meetings should be reported under 7, below.)

as described above, online LEQ form (with 6% answer rate) and two länkmöten. I was also available for student discussions during the course, e.g. during class, breaks and via email.

COURSE DESIGN

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

This was the fourth time for me to teach this course. One year ago, I have changed the book (from Nyberg->Apazidis), and the whole course setup with exercises, Workshops, Seminars has been introduced, and therefore, most of the teaching material and lectures had to be changed and adapted. In particular, also the feedback from earlier years has been thoroughly incorporated, including more (enlightening) examples during the lectures, skipping some longer derivations (with reference to where these can be found), but still keeping a number of larger deviations on the blackboard (to keep the theoretical level of the lecture as opposed to the practical exercises). The course now contains lectures (2 per week typically), exercises (1 per week), 3 seminars sessions, 2 workshop sessions, two kontrollskrivningar and a written problem exam. The theory is trained with 2 workshops, and tested with (multiple choice) Kontrollskrivningar and a theory exam. The teaching in classroom is mainly done using writing on the blackboard, with a number of animations/video using the projector if needed. However, no powerpoint slides to teach theoretical material is being used (intentionally). The lectures are kept quite interactive, with me asking questions, and discussing any questions that come from the students.



THE STUDENTS' WORKLOAD

Does the students' workload correspond to the expected level (40 hours/1.5 credits)? If there is a significant deviation from the expected, what can be the reason?

On average 6-8 hours per week, which seems reasonable. However some students work considerably more, and it has been mentioned that the course requires quite some time (however, one should keep in mind that it is a total of 9hp).

THE STUDENTS' RESULTS

How well have the students succeeded on the course? If there are significant differences compared to previous course offerings, what can be the reason?

The result is more or less the same as the previous years. What is interesting to see is that there are relatively few students that perform excellent (i.e. A), and the probability density function is shifted a bit towards B. All the students with FX who came to the komplettering FX->E have passed.

STUDENTS' ANSWERS TO OPEN QUESTIONS

What does students say in response to the open questions?

- time consuming and difficult course
- interesting course, good book, good lectures
- exercise sessions could be improved (language, pedagogy)
- more examples in lecture, less theory

SUMMARY OF STUDENTS' OPINIONS

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

The main result from this analysis is that I should be try to be more clear in the structure, such that it is always clear what I am talking about. The main point that was also mentioned in the questionnaire is that the students should start to spend time on the content right from the beginning. Generally, the students have a positive attitude to the course, its content and the topic. For some the background knowledge (possibly in math) was deemed not adequate.

From the länkmöten, the following statements could be summarised:

good points:

- good and interesting lectures.
- good course structure and information (e.g. course PM, Canvas)
- continuous examination in the form of seminars, workshops and kontrollskrivningar
- repetition of previous material in the beginning of the lectures
- suitable course literature

suggestions for improvement:

- Exercise groups in Swedish.
- Quality of some of the exercise groups. Not all assistants appear prepared, and teach in a pedagogical way.
- some exercise rooms are too small
- usage of a formula sheet during the exam.

OVERALL IMPRESSION

Summarize the teachers' overall impressions of the course offering in relation to students' results and their evaluation of the course, as well as in relation to the changes implemented since last course offering.

The lectures were quite well attended, as were some of the exercise rooms. There are a lot of questions during the lectures, which I try to address in such a way to not disturb the schedule. There was also a lot of email contact with students, both about practicalities, but also questions related to the material.



ANALYSIS

Is it possible to identify stronger and weaker areas in the learning environment based on the information you have gathered during the evaluation and analysis process? What can the reason for these be? Are there significant difference in experience between:

- students identifying as female and male?
- international and national students?
- students with or without disabilities?

The students were in general happy (as discussed at the teacher-student meetings). The overall structure is appreciated, even though some mention that there is too much theory in the lectures. This aspect was however highlighted as positive during the direct student meetings. They typically think that the lectures help to their learning, and were given on a appropriate level and speed. There were no real negative points related to the lectures.

The exercise groups are mentioned as a weak point, both in terms of language and level of pedagogical skills in some exercise rooms. These were then, as a consequence, not much frequented. This in turn lead to some rooms being very full, not being ideal for student learning.

PRIORITIZED COURSE DEVELOPMENT

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

We are working on digitalisation of theory questions, which could motivate the constant learning. Other than that, the quality of the exercise groups and assistants needs to be improved. This is a general problem at Mechanics due to a very international PhD student pool. However, it also appears that this course has gotten an overly large share of assistants with non-Swedish language, which need to be addressed on a department level.

OTHER INFORMATION

Is there anything else you would like to add?

Only 6% of the students answered this questionnaire, so it feels difficult to make a complete analysis. Therefore I am basing some of my statements also on what the students said during the teacher-student meetings.

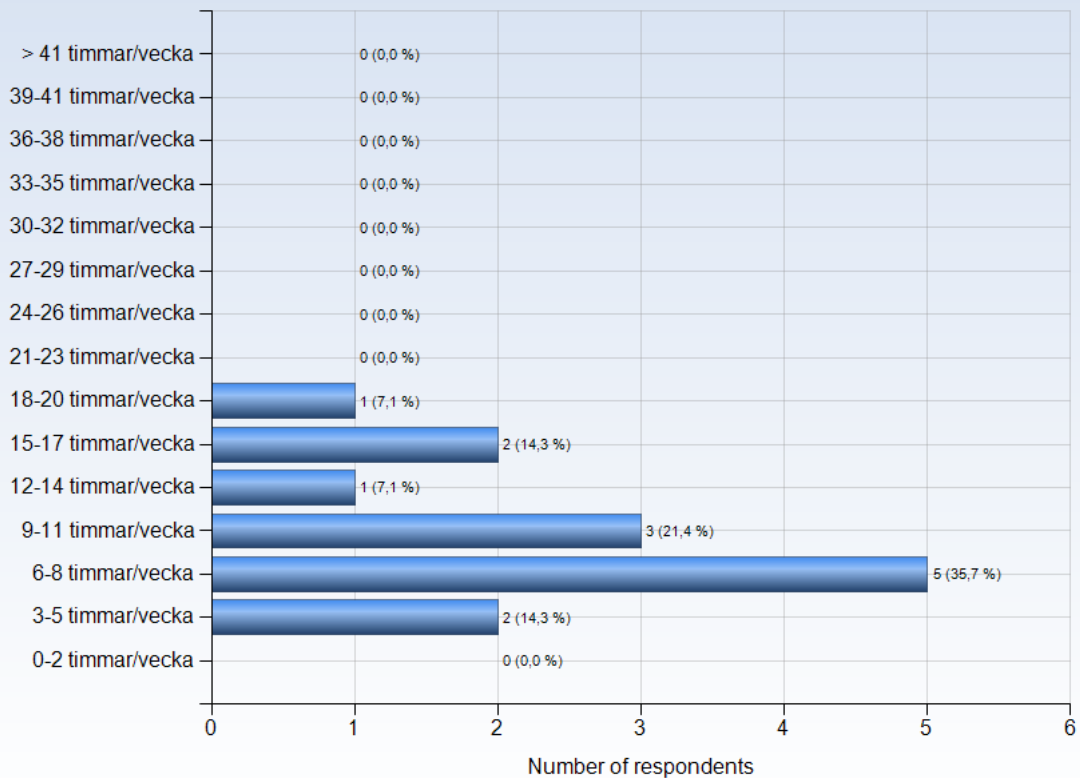


SG1130 - 2019-05-31

Antal respondenter: 219
Antal svar: 14
Svarsfrekvens: 6,39 %

ESTIMATED WORKLOAD

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



Comments

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

Är en person som intensivt lär bäst. Jobbade mest sista delen av kursen.

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

Jag närvarade på alla föreläsningar och nästan alla övningar. Jag la ner mest tid på kursen i kursens sista månad, innan tentamen.

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

Är en kurs som är väldigt tidskrävande



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:

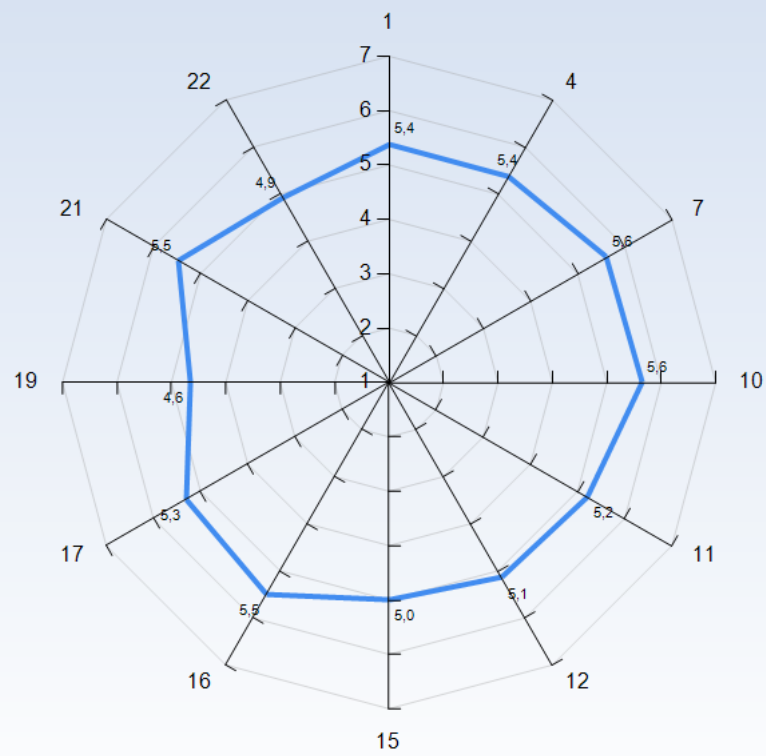
1 = No, I strongly disagree with the statement

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.

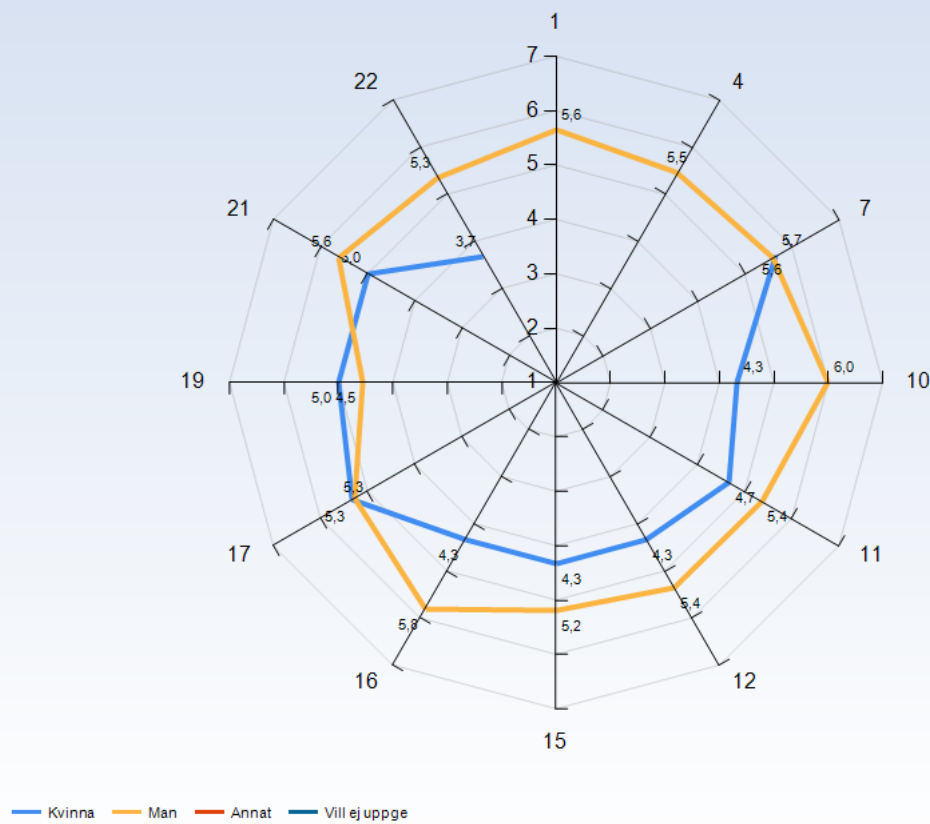
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

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.

Average response to LEQ statements - per gender

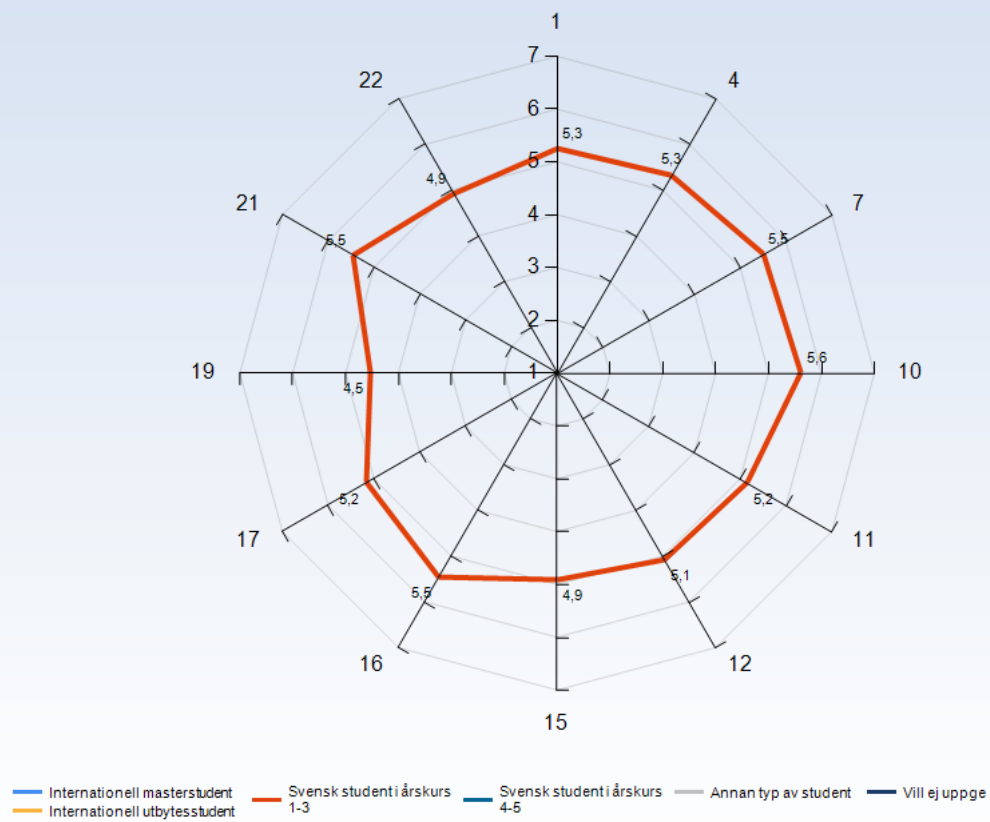


Comments

Comments (I am: Kvinna)

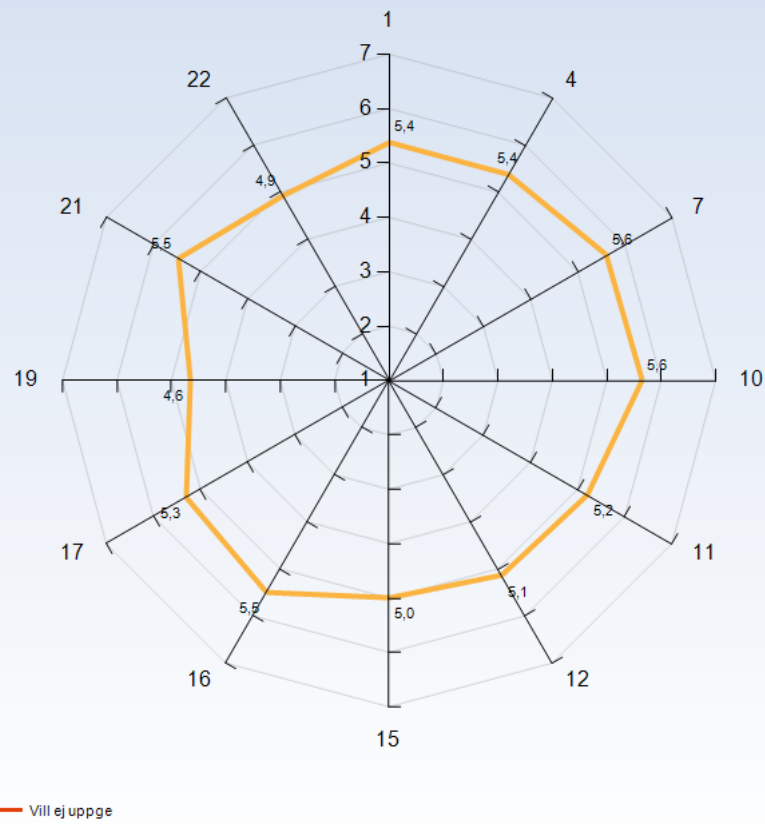
Svårt att få in tänket om hur man löser uppgifter.

Average response to LEQ statements - per type of student



Comments

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)

Man fick lära sig mycket jag tror att man kommer ha nytta av.

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

Lära sig mer om mekanik var intressant

Då man fick plats på en bra övning.

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

Grymt bok att lära sig ifrån!!! Kom igång lite sent med rätt studieteknik med den hade väldigt bra struktur och förklaringar.

Föreläsare som gick igenom relevanta och viktiga områden på ett förståeligt sätt. Alltid tillgänglig för studenters åsikt och frågor.

Bra planering och struktur i kursen.

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

Vi blev kontinuerligt testade på kursens innehåll genom seminarier och kontrollskrivningar, vilket tog bort lite av pressen från tentan. Man blev tvungen att plugga kontinuerligt och att kunna bli klar med teoridelen redan innan tentan kändes bra.

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

Övningarna.

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

Intressant kurs. Fick lära mig väldigt mycket. Saker jag kommer aldrig glömma.

What would you suggest to improve?

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

Systemet för seminarierna tyckte jag kändes konstigt och borde kollas över.

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

Fler räkneexempel på lektion, då förstår många och kan greppa teorin bättre

För få övningar, dålig föreläsningssupplägg

Jätte få exempel så de va svårt att förstå hur man löser uppgifterna.

Assisterter som kunde förklara bättre

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

Bättre förklarande övningsledare.

Något praktiskt som ev laborationer.

Något muntligt ev redovisning/ projekt.

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

Mer fokus borde ligga på övningarna. Jag fick oftast inte ut så mycket av övningarna, det beror nog både på att de ibland låg före föreläsningarna, eller att jag själv hade svårt att följa dem. Jag upplever att jag fick ut mindre av övningarna i jämförelse med andra kurser.

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

Ha övningarna på svenska samt räknestugor.

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

På föreläsningarna SNÄLLA gör mer exempel!!!!!!!



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)

Gör uppgifter på egen hand under hela kursen. Gå på föreläsningar.

Fastna inte för länge på dom tidigare kapitlen och uppgifterna i boken, materialet i den andra halvan av kursen kräver lite mer tid och arbete så det är värt att påbörja det i god tid.

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

Gör många uppgifter i boken, förstå centrala begrepp

Läs i boken innan föreläsningen

Vara tidig till den bra övningen

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

Ta kontrollskrivningar på allvar. Dem gör kursen enklare att klara av än att göra både teori och problem del på tentan.

Häng med redan från början. Tro inte att man "redan kan detta från gymnasiet"

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

Börja i tid med uppgifterna till seminarierna, och se till att bli godkända på kontrollskrivningarna, det tar bort en del av arbetsbördan inför tentan.

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

Sätt dig in i hur man tänker när man löser tal i mekaniken från början. Det är inte som fysik. Egentligen lättare när man väl har fått förståelse.

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

Gör alla uppgifter i boken.

Is there anything else you would like to add?

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

Tack för kursen!

SPECIFIC QUESTIONS

Hur många föreläsningar och övningar/seminarier/workshops har du varit med (i %)?

Hur många föreläsningar och övningar/seminarier/workshops har du varit med (i %)?

95%

10% . Pendlar till Stockholm som gjort att jag missat mycket.

95%

99%

100%

100%

100%

De flesta

Alla föreläsningar (100%), 1 workshop (50%), ungefär 50-75% av övningarna. Jag lämnade in uppgifter till samtliga seminarier men närvarade på 67%.

20%



Vad tycker du om föreläsningarna (organisation, förklaringar, innehållet, litteratur)?

Vad tycker du om föreläsningarna (organisation, förklaringar, innehållet, litteratur)?

Jag tyckte föreläsningarna va för det mesta bra. Ibland kunde målen med vad man skulle lära sig vara lite otydliga.

10 av 10

Bra. Boken var jättebra.

Vissa områden behöver mer tid och vissa behöver inte lika mycket tid.

Bra

Lite för mycket bevis. Gärna fler konkreta exempel. Boken är JÄTTEbra.

Litteratur bra, lite svårt med övningar på engelska

Jag tyckte att de va bra men det skulle hjälpa om vi fick mer exempel uppgifter som vi skulle lösa tillsammans.

Föreläsningarna var inte bra upplagt för få exempel

Jag är väldigt nöjd med föreläsningarna, jag uppskattade att den förra föreläsningen repeterades i början, så att man har det färskt i huvudet innan man bygger vidare på det.

Bra

Vad tycker du om övningar, seminarier och workshops? Ska vi ha den uppdelningen i framtiden?

Vad tycker du om övningar, seminarier och workshops? Ska vi ha den uppdelningen i framtiden?

Övningarna och workshopsen var bra. Seminarierna tyckte jag inte var så bra.

Gick inte på några övningar/ workshops men seminarierna var inte effektivt. Ingen diskussion överhuvudtaget 2 av 10.

Jag tycker ni borde införa räknestugor så man kan få hjälp.

Ja

Svensktalande seminarium. Jag gick inte på mina (förutom 1 gång eftersom man var tvungen) för min assistent talade engelska. Annars bra övningar och workshops

Ja

Väldigt bra men det va bara en lärare som kunde faktiskt hjälpa oss på ett bra sätt

Behövs mer övningar

Seminarierna upplevdes för mig ganska stressiga, men jag förstår samtidigt syftet med dem och jag uppskattar att de finns. Workshops var väldigt nyttigt inför kontrollskrivningen, då jag får ut mycket av att repetera gamla examinationsuppgifter. Jag gillar den uppdelningen.

För få assistenter och för dåliga

Vad tycker du om svårigheten/hastigheten av kursen?

Vad tycker du om svårigheten/hastigheten av kursen?

Lagom

En kurs som man behövde lägga mycket tid på för att lära sig. Tycker man borde gå fram till centrala delar snabbare för att klara av tentan.

Många föreläsningar gick igenom grunder som man trodde att man kunde allt. Men tentan var svårt.

Det var väldigt svårt att få in tänket.

Bra

Jättebra

Godtagbar

svårighet: väldigt svår

hastighet: perfekt

Ganska svår

Jag upplevde mekanik som ganska svårt, och jag är glad för de förkunskaper från gymnasiet och maskinintro-kursen, vilka hjälpte mig att ta med igenom kursen. Jag är nöjd med hastigheten, även om det var lite mycket med seminarier och kontrollskrivningar så nära inpå varandra mot slutet av kursen.

Svårt att hinna med när man inte får mycket hjälp på övningar



RESPONSE DATA

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

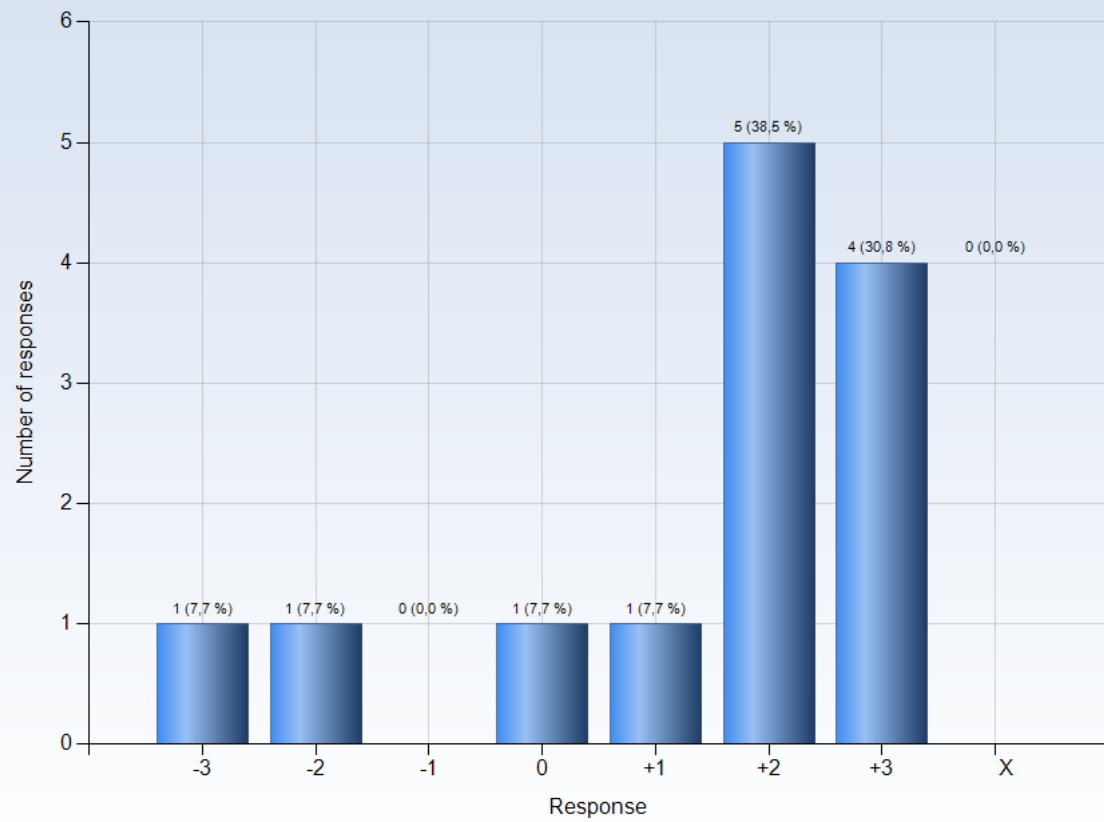
-3 = No, I strongly disagree with the statement

0 = I am neutral to the statement

+3 = Yes, I strongly agree with the statement

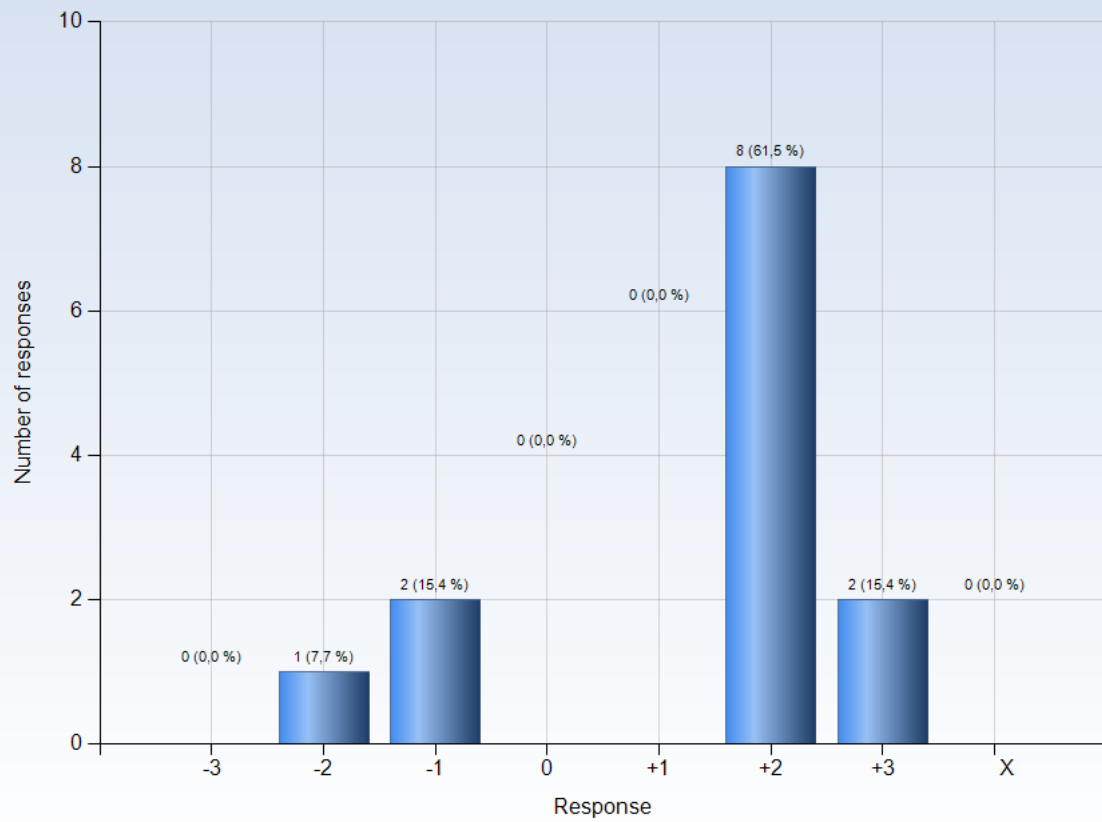
X = I decline to take a position on the statement

1. I worked with interesting issues



Comments

4. The course was challenging in a stimulating way

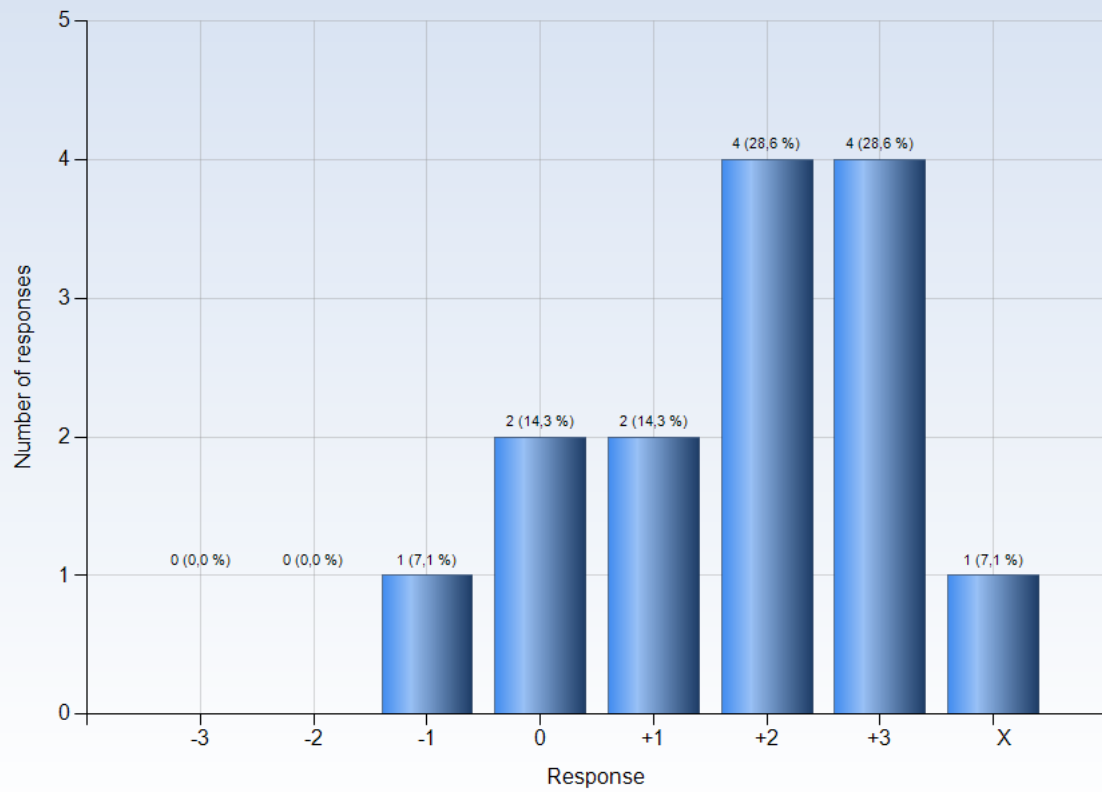


Comments

Comments (My response was: -2)

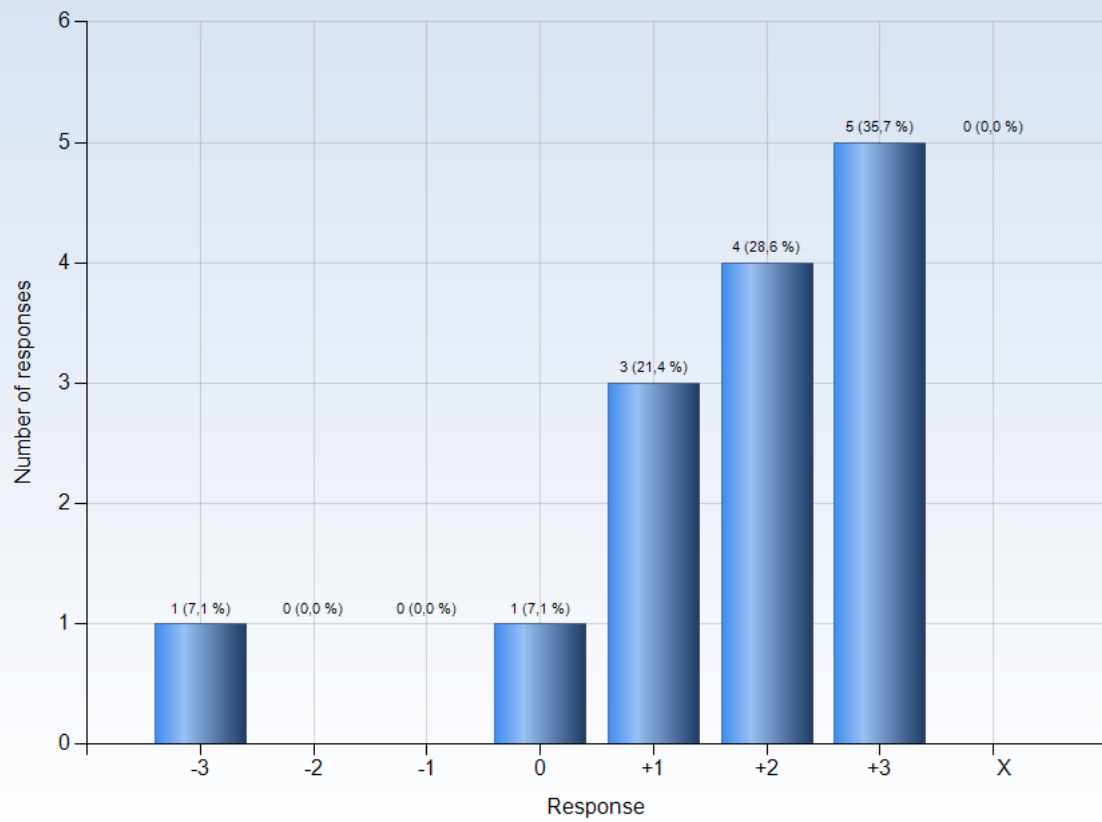
Utmanande men ej på ett stimulerande sätt.

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



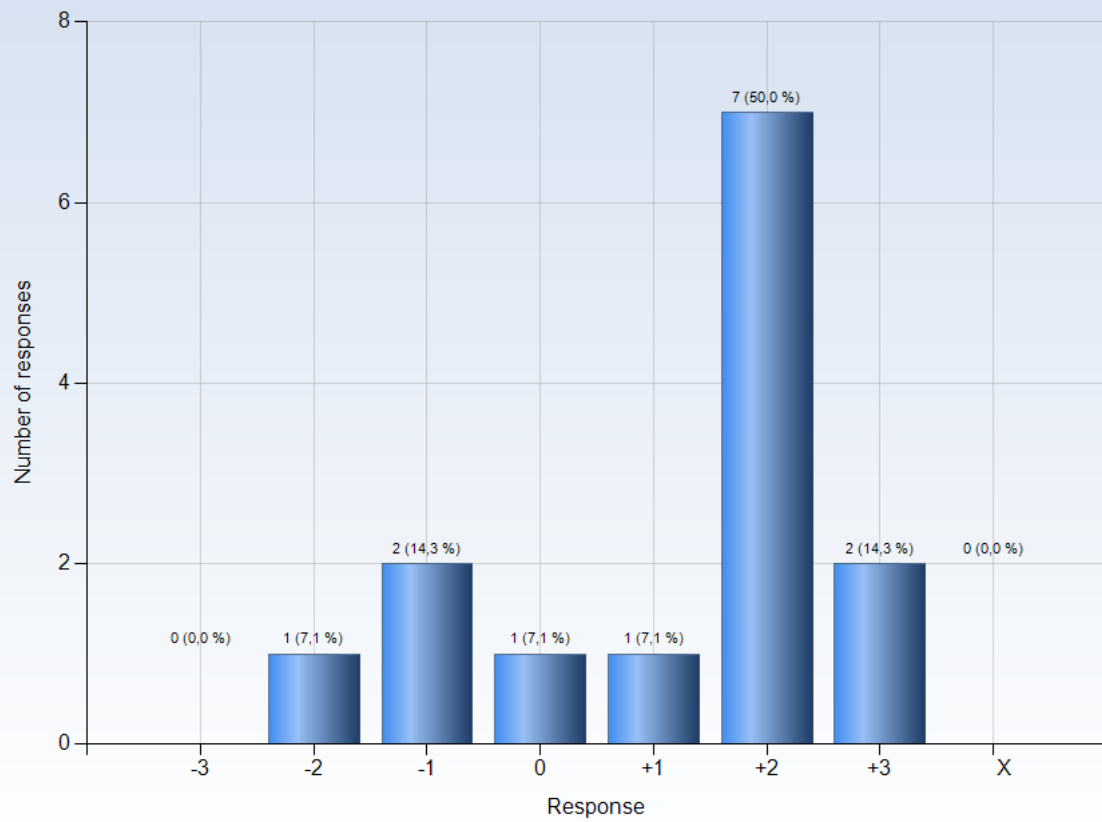
Comments

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



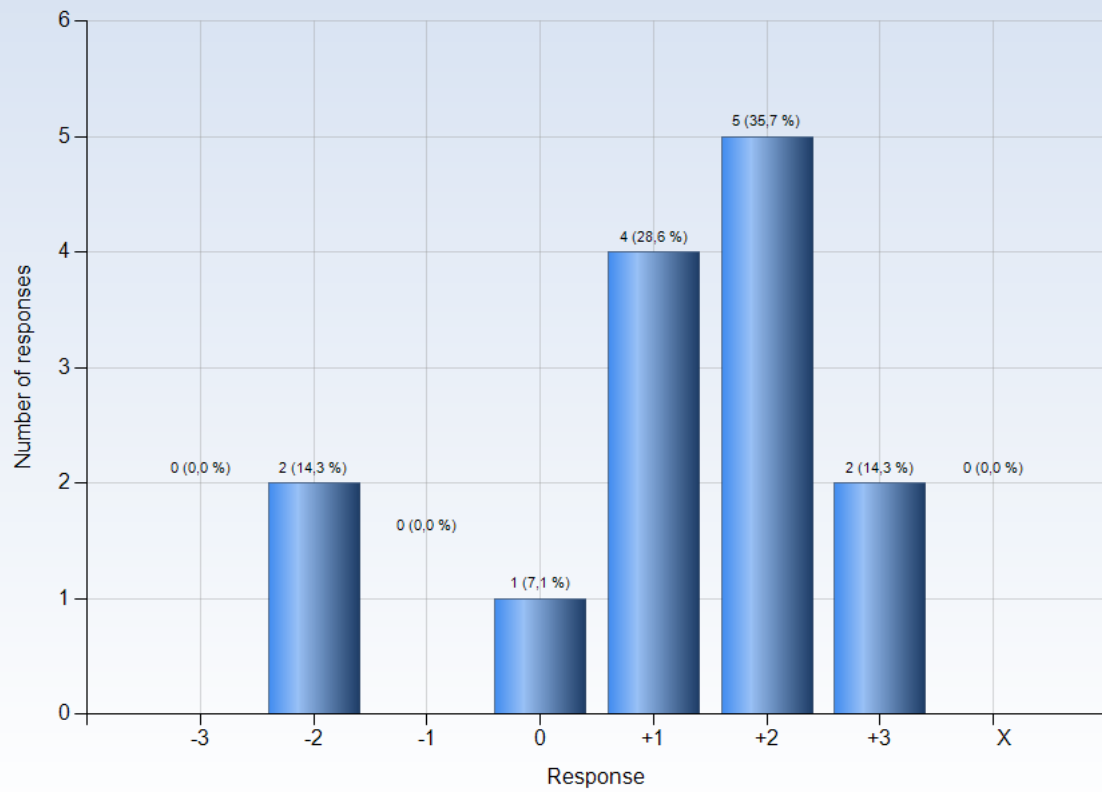
Comments

11. Understanding of key concepts had high priority



Comments

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

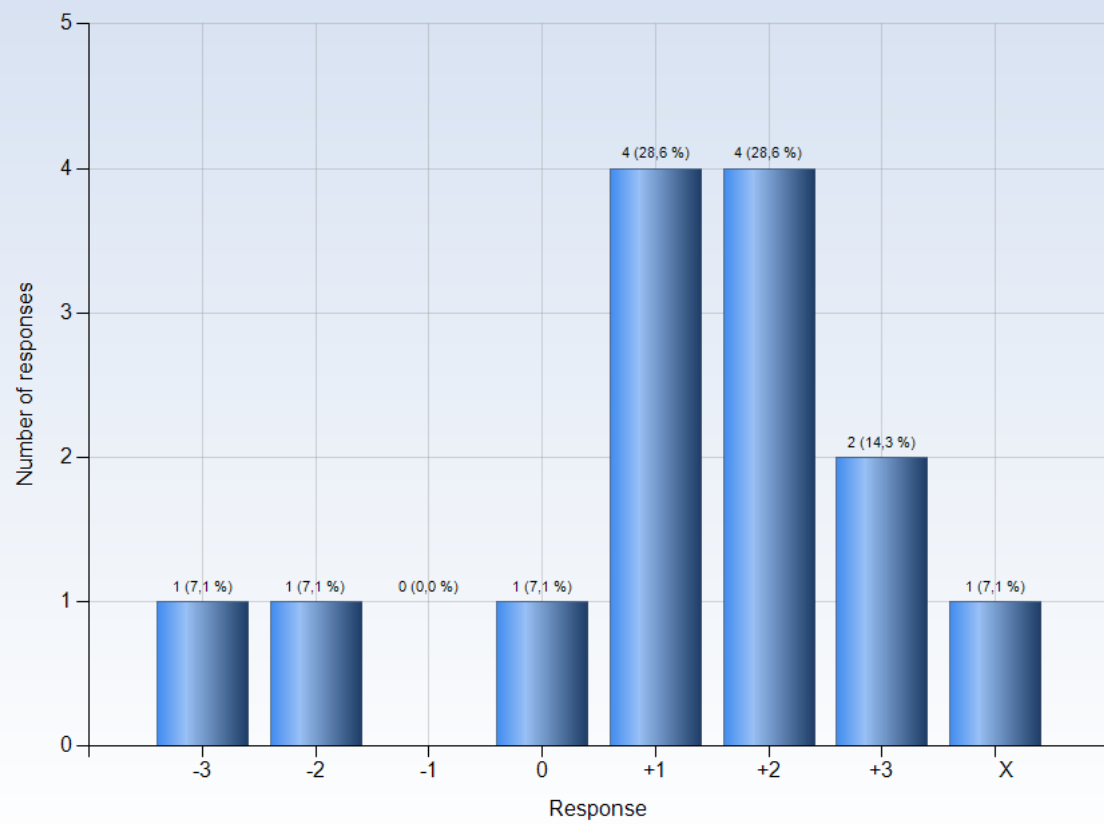


Comments

Comments (My response was: -2)

Fulla övningar.

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

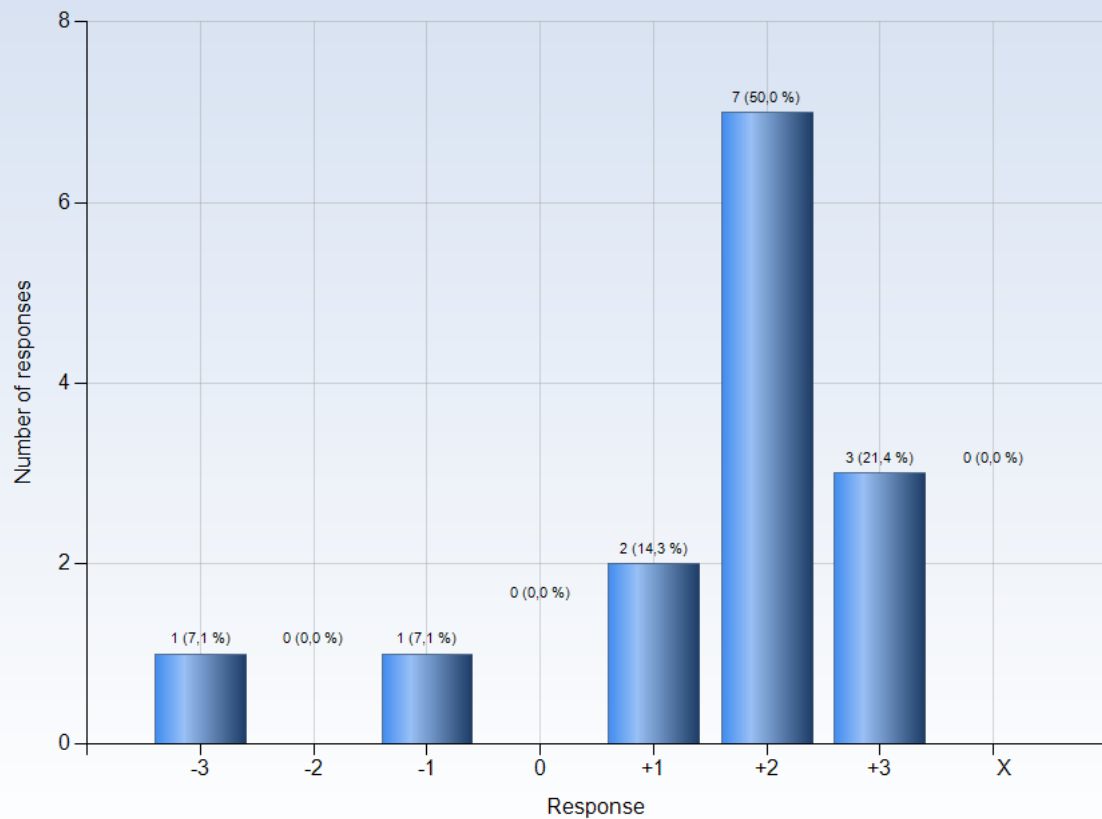


Comments

Comments (My response was: -2)

Fick ej plats på övningar.

16. The assessment on the course was fair and honest



Comments

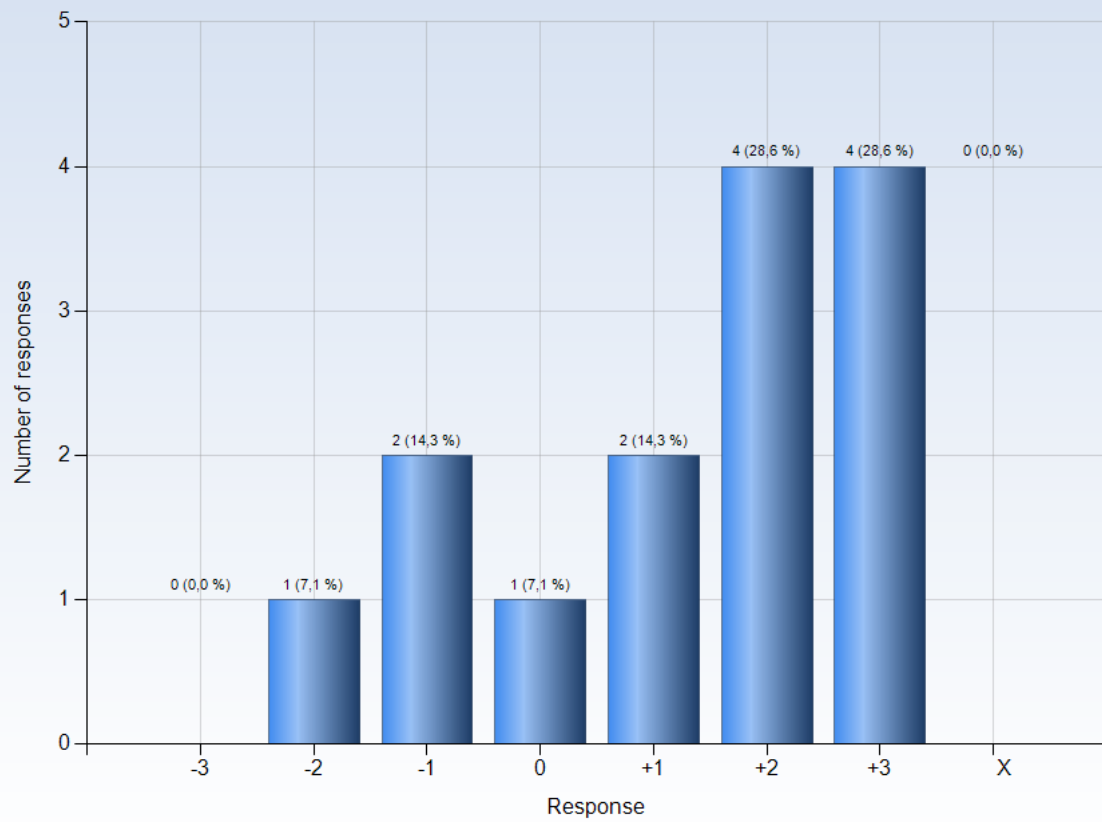
Comments (My response was: +1)

Tentamen var svår jämfört med tidigare år. Speciellt fråga 2.

Comments (My response was: +2)

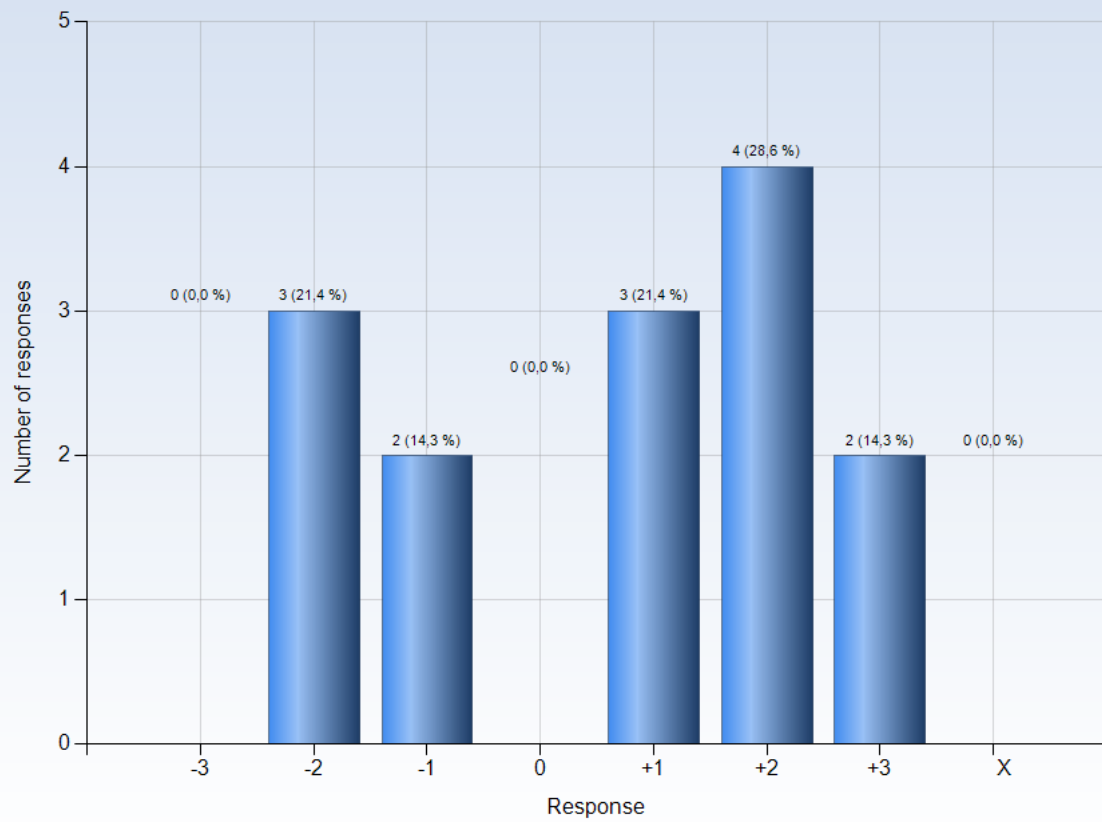
Beror på bedömning. Om det är rätt svar är det svårt att klara den då man inte fick ha med sig något på tentan. Men om det är tanken och tillvägagångssätt som ger poäng är det rimligt.

17. My background knowledge was sufficient to follow the course



Comments

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

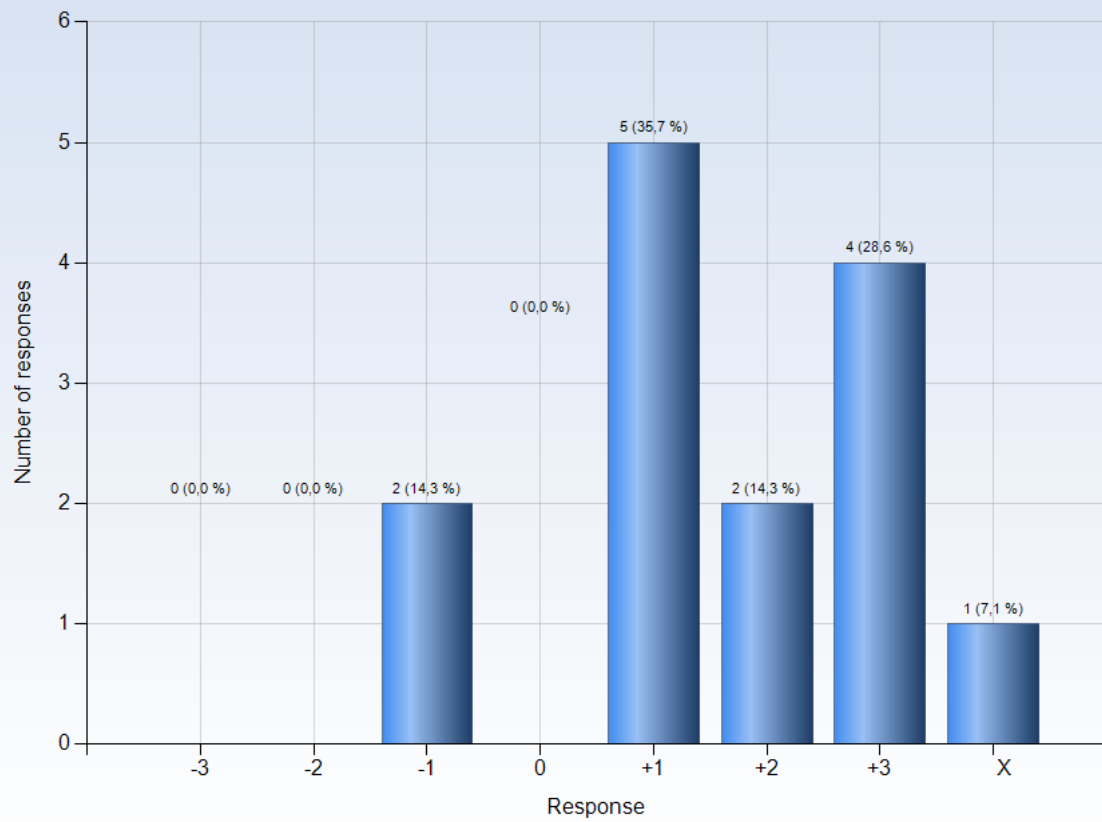


Comments

Comments (My response was: -2)

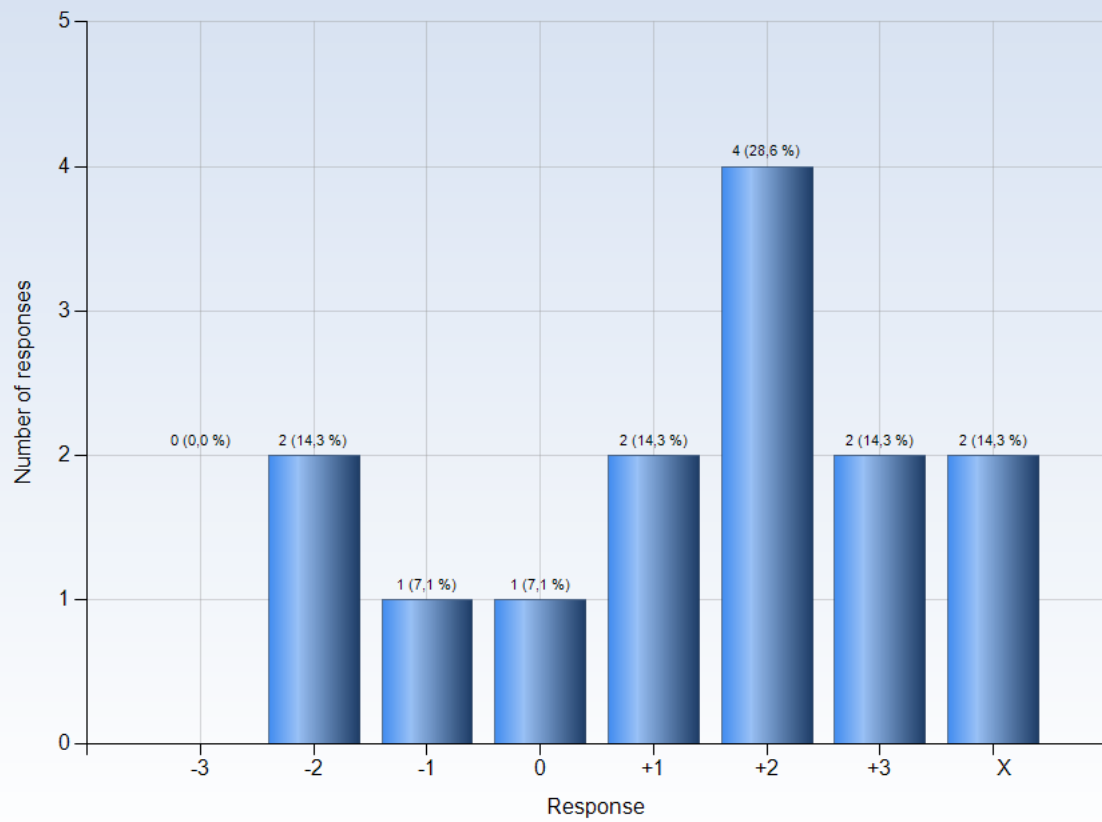
Fulla övningar.

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



Comments

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



Comments

Comments (My response was: -1)

Bara en bra övningsassitent