Report - EF2240 - 2018-06-12

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):

Tomas Karlsson, tomas.karlsson@ee.kth.se

COURSE DESIGN

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

The general goal is to give an overview of the space environments in the solar system (and to some extent outside of it), and the plasma physics applications used in describing them.

The main material is presented in the lectures which applies basic plasma physics on a number of space phenomena. Simple quizzes during the lectures gives a first application of the material. In the tutorials more quantitative examples are shown, and the students can practices themselves in the mini.groupworks. The latter consists of randomized groups of three student, who will solve a hand-in exercise, which will give bonus points. The exercise are aimed at simulating exam questions, but with some more explicit clues.

No big changes since last time, except updating to fresh data (solar, solar wind, etc.) from this year.

THE STUDENT'S 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 somewhat less than expected. Probably beacuse it is not such a mathematically demanding course.

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?

It looked about average this year, no big changes.

OVERALL IMPRESSION OF THE LEARNING ENVIRONMENT

What is your overall impression of the learning environment in the polar diagrams, for example in terms of the students' experience of meaningfulness, comprehensibility and manageability? If there are significant differences between different groups of students, what can be the reason?

Overall the students are quite happy. The least positive responses are regarding

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

This indicates that in the long run I will have to think about different ways to approach the material.

ANALYSIS OF THE LEARNING ENVIRONMENT
Can you identify some stronger or weaker areas of the learning environment in the polar diagram - or in the response to each statement - respectively? Do they have an explanation?

The students were in general happy about the support they received during the course.

ANSWERS TO OPEN QUESTIONS
What emerges in the students' answers to the open questions? Is there any good advice to future course participants that you want to pass on?

The sudents are in general very happy with the course. Some want a bit more communicatin in the class room. Some want less repetion (while others think it is a good idea with the level of repetition.)

PRIORITY COURSE DEVELOPMENT
What aspects of the course should primarily be developed? How could these aspects be developed in the short or long term?

The course has not had a large overhaul for quite a few years now, and some updates are clearly due. In priority order:

1) Update mini-groupworks. This should be done before next year.

2) Update tutorials; include more old exam problems.

3) Update some of the lectures. remove some sections that we never seem to go deeper into anyway. (Example: helioseismology.)

Kursdata 2018-11-22

EF2240 - Rymdfysik, HT 2016

Kursfakta

Kursen startar:	2016 v.35
Kursen slutar:	2016 v.43
Antal högskolepoäng:	6,0
Examination:	TEN1 - Rymdfysik, 6,0, betygsskala: A, B, C, D, E, FX, F
Betygsskala:	A, B, C, D, E, FX, F

Bemanning

Examinator:	Tomas Karlsson <tomask@kth.se>
Kursomgångsansvarig lärare:	
Lärare:	
Assistenter:	

Antal studenter på kursomgången

Förstagångsregistrerade:	5
Totalt registrerade:	5

Prestationer (endast förstagångsregistrerade studenter)

Examinationsgrad[1] [%]	60.00%
Prestationsgrad[2] [%]	60.00%
Betygsfördelning[3] [%, antal]	A 33% (1) B 33% (1) E 33% (1)

1 Andel godkända studenter
2 Andel avklarade poäng
3 Betygsfördelning för godkända studenter

EF2240 - Rymdfysik, HT 2016

Kursfakta

Kursen startar:	2016 v.35
Kursen slutar:	2016 v.43
Antal högskolepoäng:	6,0
Examination:	TEN1 - Rymdfysik, 6,0, betygsskala: A, B, C, D, E, FX, F
Betygsskala:	A, B, C, D, E, FX, F

Bemanning

Examinator:	Tomas Karlsson <tomask@kth.se>
Kursomgångsansvarig lärare:	
Lärare:	
Assistenter:	

Antal studenter på kursomgången

Förstagångsregistrerade:	26
Totalt registrerade:	26

Prestationer (endast förstagångsregistrerade studenter)

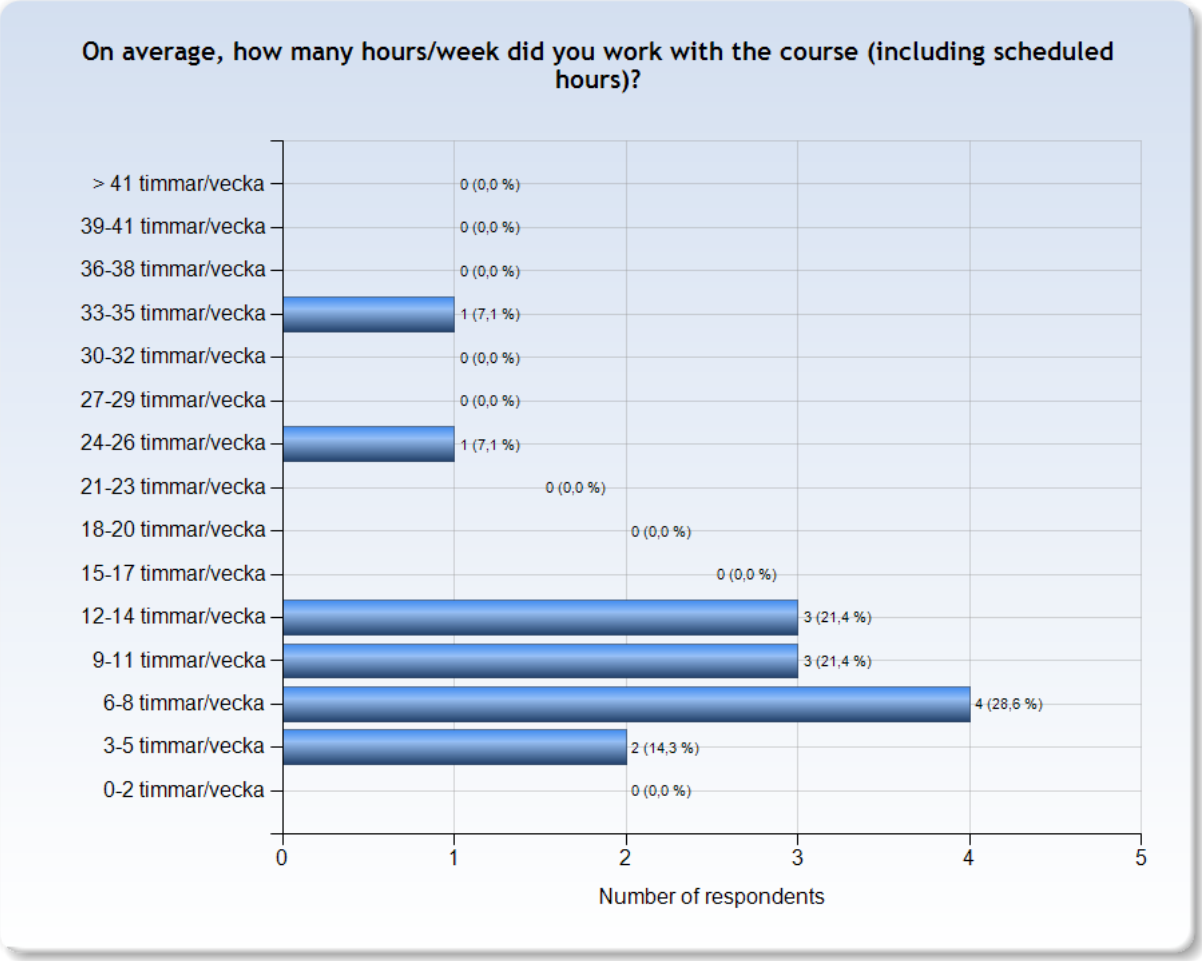
Examinationsgrad[1] [%]	92.30%
Prestationsgrad[2] [%]	92.30%
Betygsfördelning[3] [%, antal]	A 33% (8) B 29% (7) C 8% (2) D 21% (5) E 8% (2)

1 Andel godkända studenter
2 Andel avklarade poäng
3 Betygsfördelning för godkända studenter

EF2240 - 2016-10-19

Antal respondenter: 31
Antal svar: 14
Svarsfrekvens: 45,16 %

ESTIMATED WORKLOAD



Comments

Comments (I worked: 6-8 timmar/vecka)
Föreläsningar och övningar var tydliga så hemarbete kändes ofta överflödigt

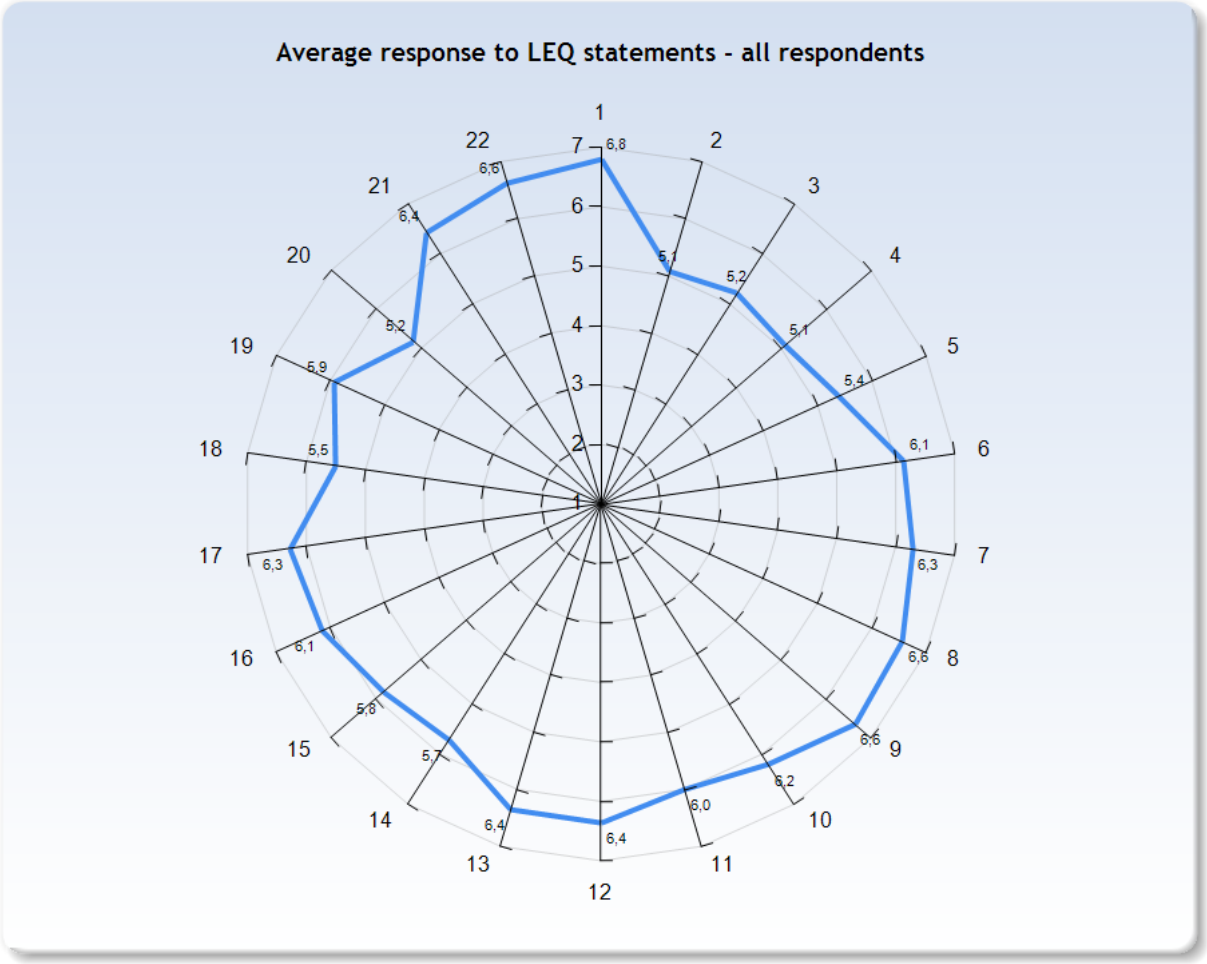
Comments (I worked: 12-14 timmar/vecka)
only the lectures + days learning for the exam
I should work more on the project (as we can go as deep as we want, we always can work more on it !), and I should apply faster for the oral dissertation, to work on it.

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
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
6,8
5,1
5,2
5,1
5,4
6,1
6,3
6,6
6,6
6,2
6,0
6,4
5,7
5,8
6,1
6,3
5,5
5,9
5,2
6,4
6,6

KTH Learning Experience Questionnaire v3.1.3

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. I understood how the course was organized and what I was expected to do (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 choices

19. I was able to learn in a way that suited me (m)
20. I had opportunities to choose what to do (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, intriguing or important

b) We can speculate, try out 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 yet supportive environment

d) We feel that we are part of a community and believe that other people have faith 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 sufficient background knowledge to manage the present learning situation

g) We can learn inductively by moving from specific examples and experiences to general principles, rather than the other way around

h) We are challenged to develop a proper understanding of key concepts and successively create a coherent whole of the content

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

j) We can try, fail, and receive feedback in advance of and separate from any summative judgment of our efforts

k) We believe that our work will be considered fairly and honestly

l) We have sufficient time to learn and devote the time necessary to do so

m) We believe that we are in control of our own learning, not manipulated

n) We can work collaboratively with other learners struggling with the same problems

Literature

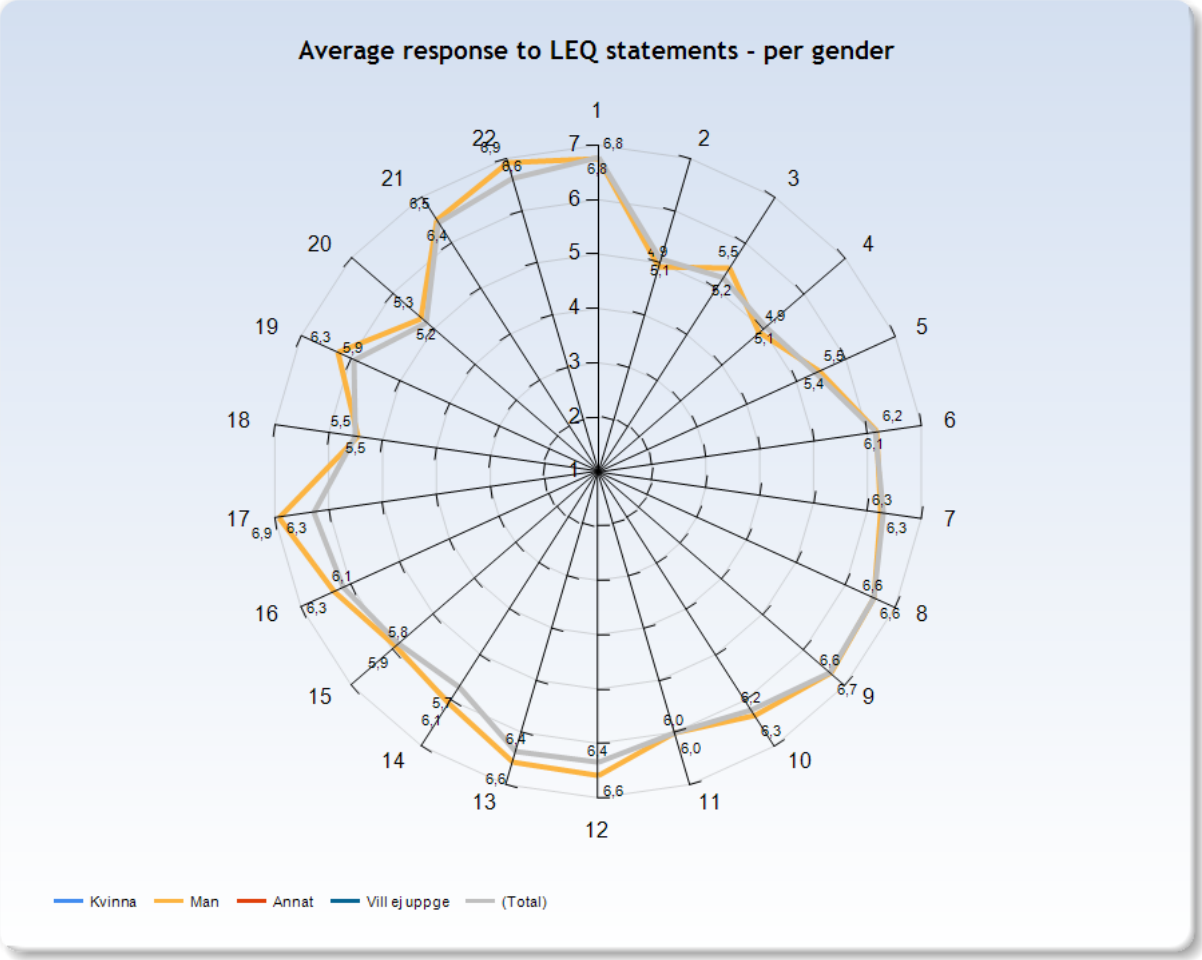
Bain, K. (2004). *What the Best College Teachers Do*, Chapter 5, pp. 98-134. Cambridge: Harvard University Press.

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

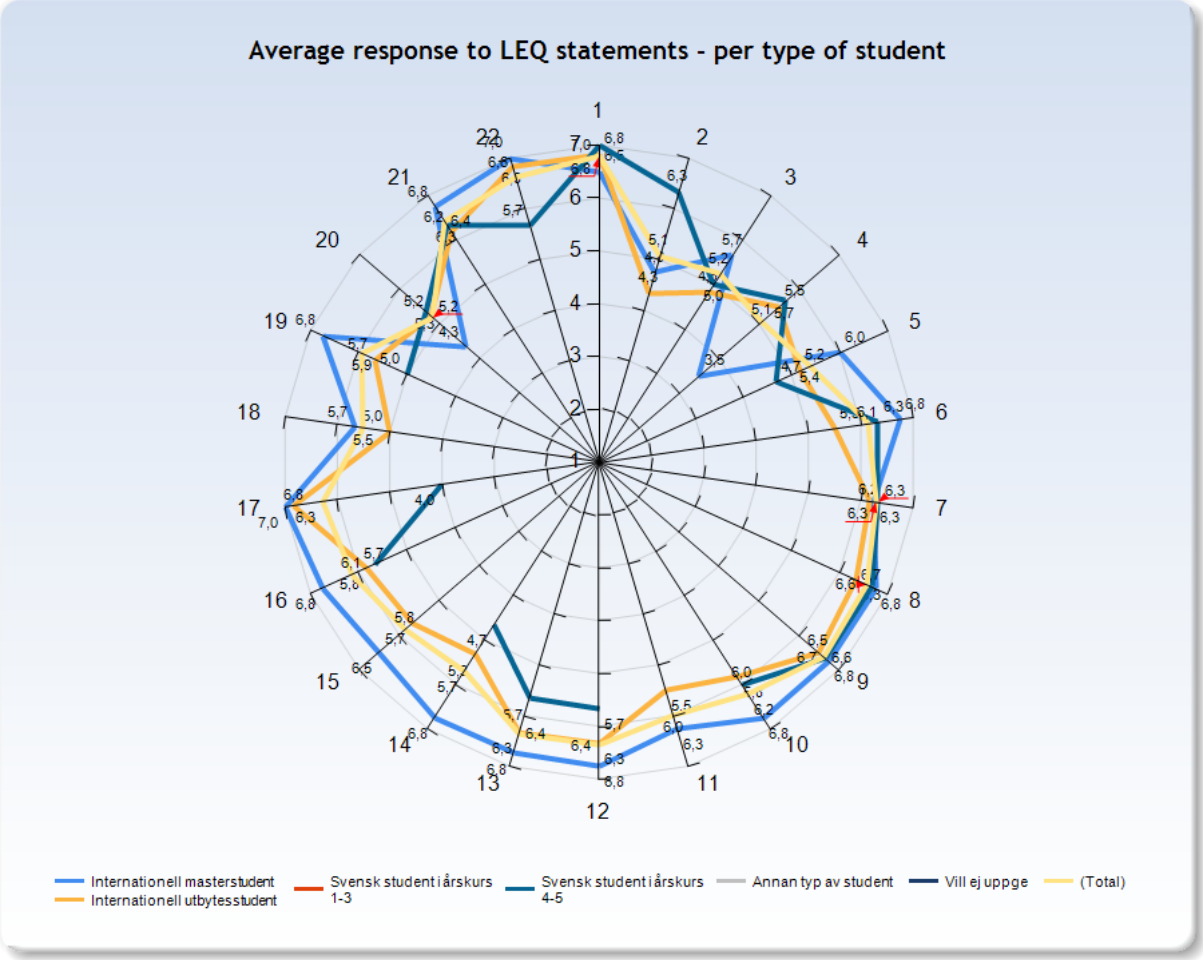
Elmgren, M. & Henriksson, A-S. (2014). *Academic Teaching*, Chapter 3, pp. 57-72. Lund: Studentlitteratur.

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

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


Average response to LEQ statements - per gender
Kvinna
Man
Annat
Vill ej uppge
(Total)

Comments



Comments

Comments (I am: Internationell utbytesstudent)
(double degree student)

GENERAL QUESTIONS

What was the best aspect of the course?

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

Its topic! Really interesting

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

The fact that we could see what causes different phenomenons around us just by using simple calculations

Allt nytt kursmaterial! Föreläsningarna var bra upplagda

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

The mini-quiz questions during each lecture.

tutorials

The course content was very interesting and presented in a very accessible way.

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

I think it is really well organised and doing exercises every week made everything much easier for understanding the topics.

The structure of the course with the minigroup works lectures and tutorial sessions. Really appreciated the aurora reminders!

The course was really interesting, accessible, and close to the reality (we were talking a lot about some new projects, etc)

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

Räknetimmarna. Kul att du håller i dem också!

What was the best aspect of the course? (I worked: 33-35 timmar/vecka)

Professsor's eforts to increase quality of education and increase students interests.

What would you suggest to improve?

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

More communication between the teacher and students when the slides are shown to the classroom

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

Kanske inte lika mycket repetition hela tiden, vissa saker kunde tas upp flera föreläsningar i rad och då blir det lätt enformigt. Självklart är vissa saker viktiga att prata om mycket men annat kan man också läsa igenom hemma själv
Ifall man känner sig osäker

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

home assinments for when you miss a tutorial (for an example if you get sick/förkyld)

I thought the order we studied the topics in was a bit strange; to me, it would have made more sense to teach all of the plasma physics at the beginning of the course and then move on to how it applies in space physics, rather than interspersing it throughout the course.

I would also suggest that the course is a bit too easy for master-level course. I was hoping we would go more in-depth into some of the topics.

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

In my opinion, I think that it may be too introductory. It is true that there is another course in space physics, but I think in this one sometimes it is too general.

The course should be more challenging intellectually as well as on time. I spend half the time expected based on the credits. I think a challenging difficult large assignment/project could be included to make the course less basic. We are supposed to be master students but the course feels like a basic bachelor course

I don't really see how to improve it. You just should keep it updated.

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

Läsmaterialet. Fälthammar har en ganska hög nivå... Efter föreläsningarna förstod man mycket bättre men hade ändå önskat att ha lite mer basic..
Blev även lite förvirrad av sidhänvisningarna , vad som hörde till vilken föreläsning.

What advice would you like to give to future participants?

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

What advice would you like to give to future participants? (I worked: 9-11 timmar/vecka)
Participate in all tutorials.
none

What advice would you like to give to future participants? (I worked: 12-14 timmar/vecka)
Just go to the lectures and do the minigroup works and that time investment should be enough up until the exams
Enjoy this course, you will learn a lot and understand how rocket works (the basics), and you will be proud of you when you will put your first (numerical) rocket in orbit (with matlab ;))!! And it's so satisfying to really understand how the satellite are runing around the earth, how to reach Mars, etc etc...

What advice would you like to give to future participants? (I worked: 24-26 timmar/vecka)
Studera/läs regelbundet och försök att räkna varje uppgift eller fundera varje uppgift innan själva övningstillfället

Is there anything else you would like to add?

Is there anything else you would like to add? (I worked: 3-5 timmar/vecka)
Nice and clear slides during lectures. Maybe too much though

Is there anything else you would like to add? (I worked: 9-11 timmar/vecka)
none

Is there anything else you would like to add? (I worked: 12-14 timmar/vecka)
I would suggest to go into more detail (and let the students require this to pas the course) on various issues to make it more challenging. A large assignement could be nice. Or include and elaborate on matters far more advanced during the lecture then the students require on the exam, so that they will understand in more detail how space physics work or can go back to the lecture slides/book a literature for more complex space physics
Thanks ! And see you in the "Spacecraft Dynamics".

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

SPECIFIC QUESTIONS

What did you thinkn about the lecctures?

What did you thinkn about the lecctures?
Väldigt bra. Bra med repetition från föregående lektion och färgfrågor vad nyttigt och kul.
The lectures were really interesting. They were very clear, and everything was well explained. I especially liked the fact that, at the beginning of each lecture, the main points from the lecture before were highlighted. It allowed me not to loose track when I couldn't revise between two lectures.
The lecture was presented in a nice way. I also liked very much the mini quizes during each lecture. They had been helpful to stay focused on the lecture.
Good
Everything was well explained in the lectures and they were useful.
The lectures were good. It was nice to have a quick reminder of the previous lecture at the beginning. Also, the small multiple-choice questions are useful, since they help apply the new notions while giving orders of magnitude of space physics phenomena.
The teacher could try to talk a bit more to the students. It was a bit boring from time to time.
Interesting topic
very good, I liked how you always referred to old lectures by showing us "old" slides. Although, sometimes, you talk a bit too fast
Clear, and nicely interactive with the quizes, though you should add more qualitative questions
The lectures were interesting, but I think it is better to use the blackboard rather than slides.
The lectures was interesting, and the teachers had a real added value.

What did you think about the tutorials?

What did you think about the tutorials?
De var på en lagom nivå och man lärde sig mycket. Hade önskat fler uppgifter man kunde räkna på och öva
The tutorials helped me understand what we learned from the lectures. By trying to solve the exercices at home before the tutorial, I managed to understand better what wasn't clear in the lecture, and it allowed me to see how to apply what we learn from the lectures
Perfect
I think one could make the tutorials more interactive by letting students present their results. It also would teaches how to explain and perform calculations in front of an audience.
Good
They were useful as they made clearer the knowledge gained in the lectures.
Good as practice for the exam.
Interesting as well. Maybe it could be interesting that they are corrected by the students.
Great!
Nice
The tutorials were very good, and were good practice for the exam
.

What did you think about the minigroupworks?

What did you think about the minigroupworks?
De var på en lagom nivå och roligt att få göra tillsammans
Great, they allowed us to work on small projects in groups, and interact with other people and see their view on things.
Perfect
The minigroupworks had been very nice. It was helpful in order to prepare oneself for the exam. Furthermore it was a nice opportunity to get to know new students and work in a scientific way one a certain problem.
Good
They were a reason for studying the course every week, what is helpful and good for following the course
The minigroupworks are a good way to understand the new concepts of the course, letting us apply them by ourselves and debate inside the group. They are also a good preparation for the exam.
Very good
Good to have the possibility to get more points by attending all lectures
It was good that you started off with an easy one or else maybe I would've gotten scared. One of them was too hard for me (nr 3 I think). And I missed 5&6 when I was sick so I can't really have an opinion about them.
Nice
Same as above
The minigroup work, and the project in general was great. It was an actual and important subject, and we was able to go in-depth of it. The understanding of the project was the hardest part, at the begining, but after a while, we was able to work efficiently, and on the good way.

What did you think about the exam?

What did you think about the exam?
Ganska svår, och svårt att veta hur poängfördelningen på ett uppgift är.. (ex totalt 15p, hur får man delpoäng..?)
The exam covered most of what we saw in class, and everything was clear. Although, it seems that five hours is a lot of time to dedicate for it; it can be done in much less time.
Perfect
I had the feeling that the exam was a bit harder compared to the old exams from previous years, but I think the difficulty was fair and neither to hard nor to easy.
Good and challenging
It matched with what we were supposed to know.
Ok
A bit harder than previous exams
I got stressed with the last question and didn't feel I had enough time to complete it. Therefore it felt bad that it was worth a lot of points. Next time, try not to have so much points at the very end. The rest was good.
The exam was very short I spend less than 2,5 hours
I thought the exam was fair and in line with the difficulty of the rest of the course.
The exam was fun (some good questions), and we still had to think, not just give back the course.

What did you think about the course as a whole?

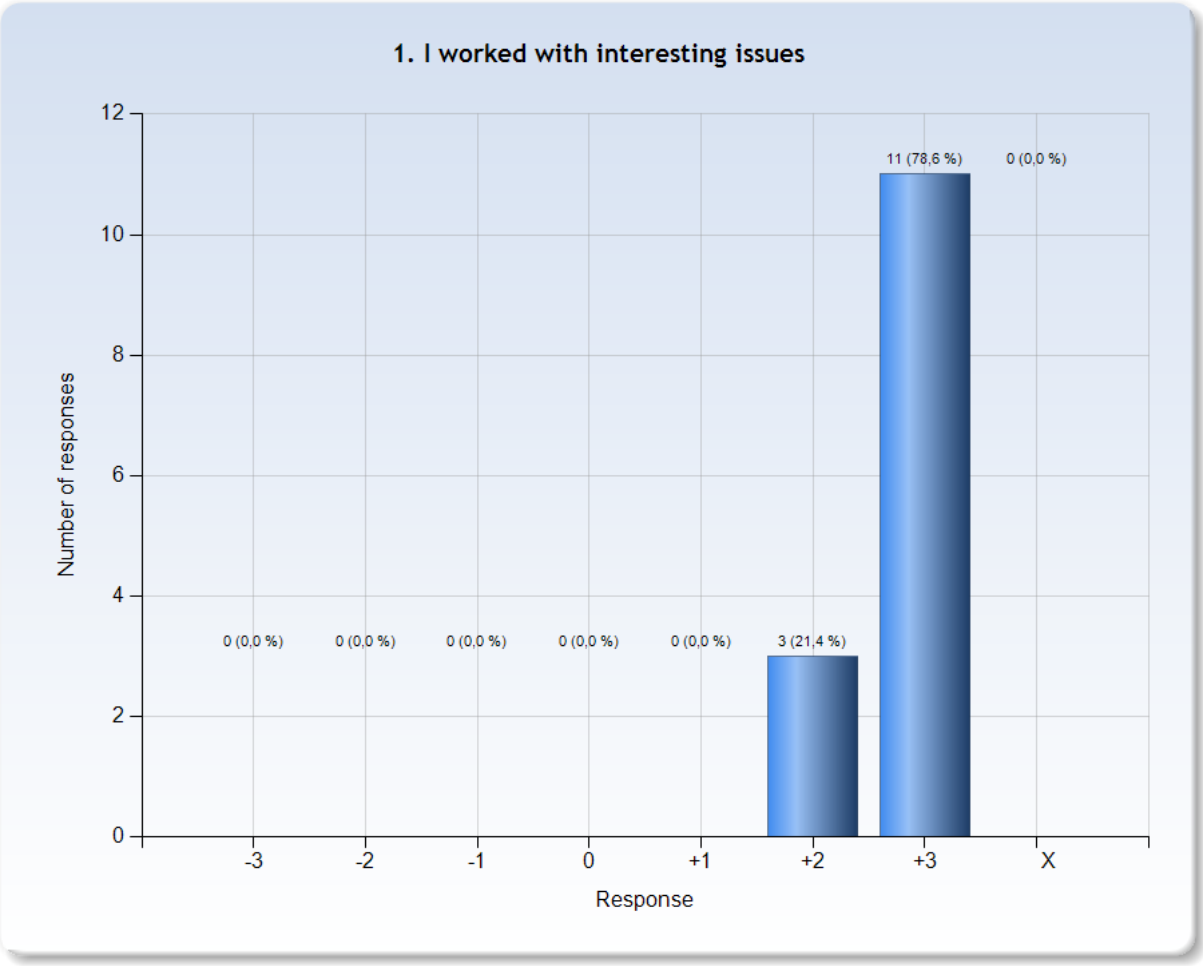
What did you think about the course as a whole?
Jag tycker att det varit väldigt bra och kul att ha dig som lärare. Det märks att du kan ditt område och lär ut det mycket bra! Intressant att det är pågående forskning och att man fick veta detta och vad.
My impression on the course in really positive. I learned many things about the space environment, and I managed to see how some easy calculations can help us get some preliminary resultats that help in understanding how the world around us works.
All summarized together I would say it was a good lecture and it gave us a good first view into the field of plasma and space physics.
A fun course
I enjoyed it
Nice course, would recommend it as an introductory course
I have a really positive opinion about the course, even if a couple of small details could make it even better
Almost perfect, especially the slides.
too easy, free credits. I would have preferred to spend these credits on more challenging issues
It was a super interesting course, but I think it should have gone into more depth and been more challenging. I also think the lectures would be more engaging if the instructor wrote on the board instead of using slides.
Awesome ?

RESPONSE DATA

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

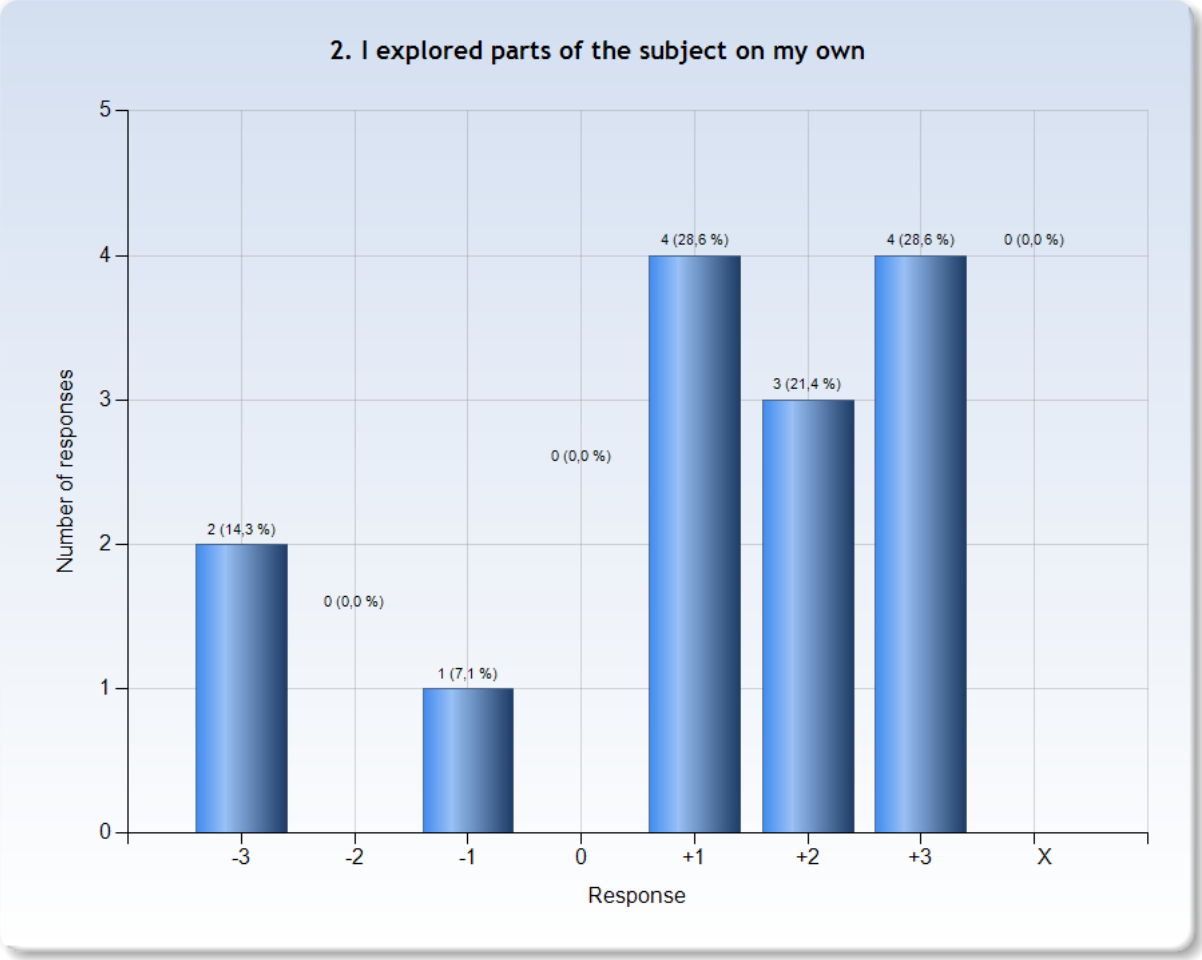
-3 = No, I strongly disagree with the statement
0 = I am neutral to the statement
+3 = Yes, I strongly agree with the statement

X = I decline to take a position on the statement

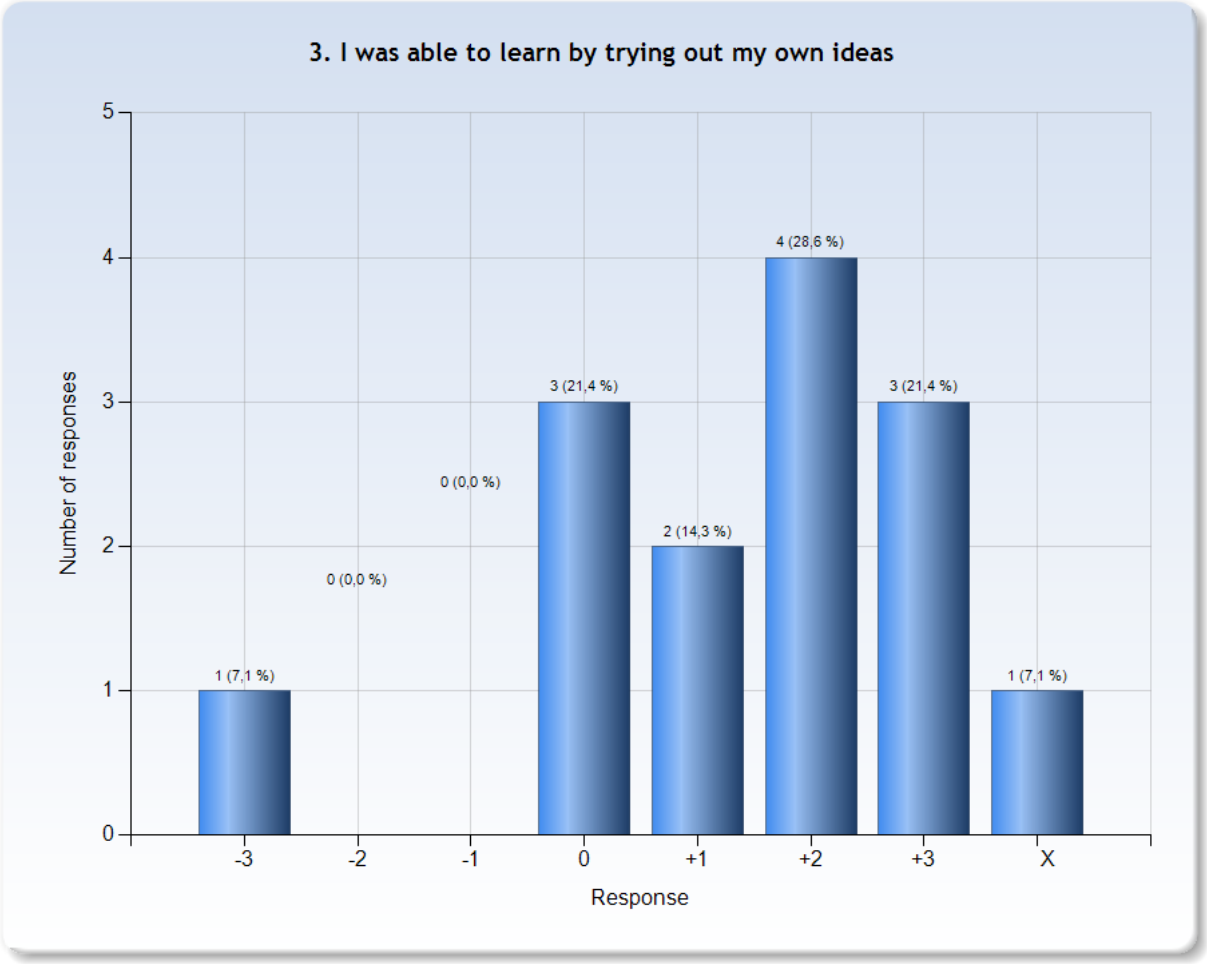


Comments

Comments (My response was: +3)
The issues are interesting but not the level of difficulty


2. I explored parts of the subject on my own
Number of responses
5
4
3
2
1
0
2 (14,3 %)
0 (0,0 %)
1 (7,1 %)
0 (0,0 %)
4 (28,6 %)
3 (21,4 %)
4 (28,6 %)
0 (0,0 %)
-3
-2
-1
0
+1
+2
+3
X
Response

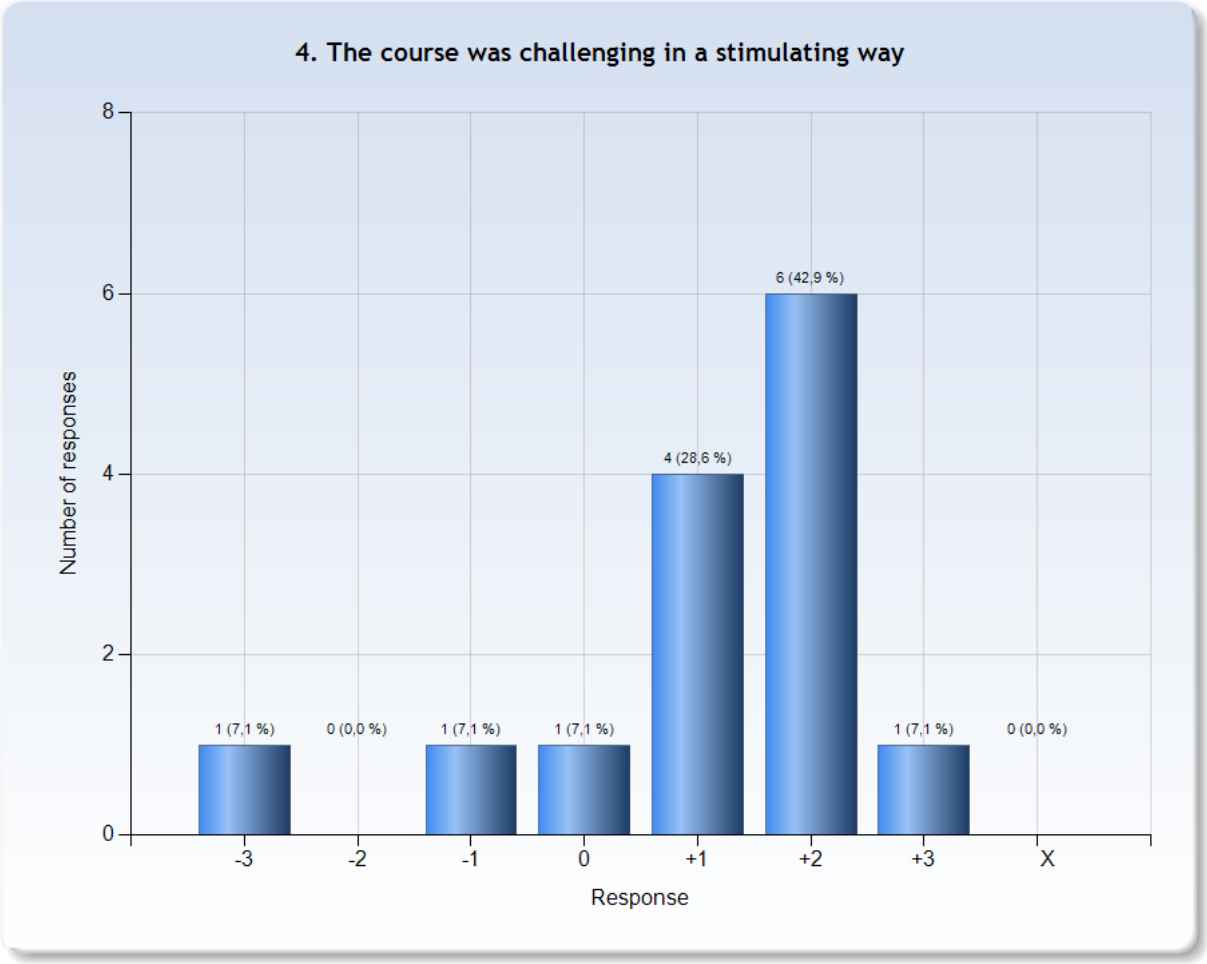
Comments



Comments

Comments (My response was: X)

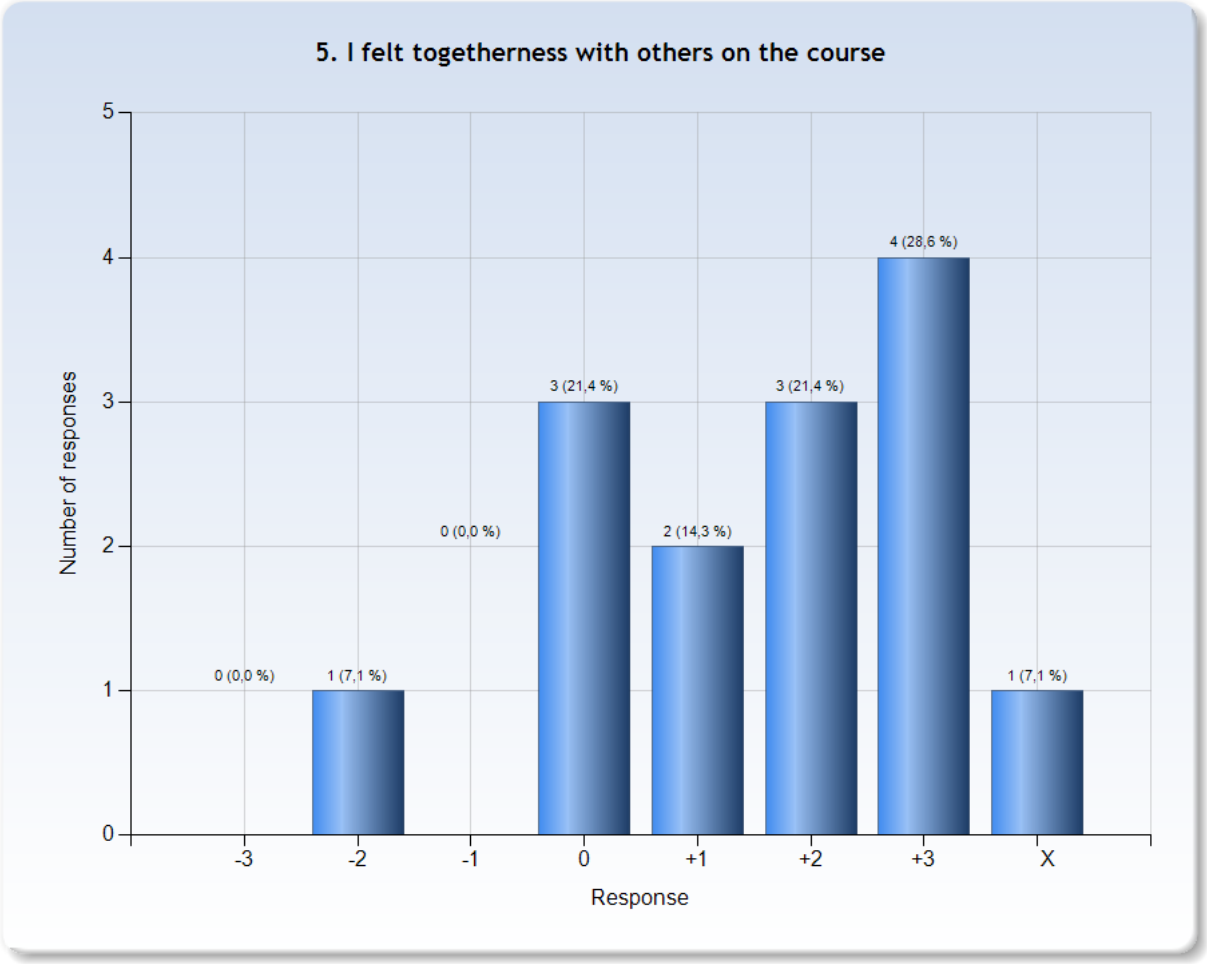
not applicable



Comments

Comments (My response was: +1)

Det var mycket nytt material vilket var roligt men det var också mycket repetition i början av varje föreläsning, i vissa fall hade det enligt mig i alla fall inte behövts utan man hade kunnat hinna gå igenom mera material och nya saker istället!



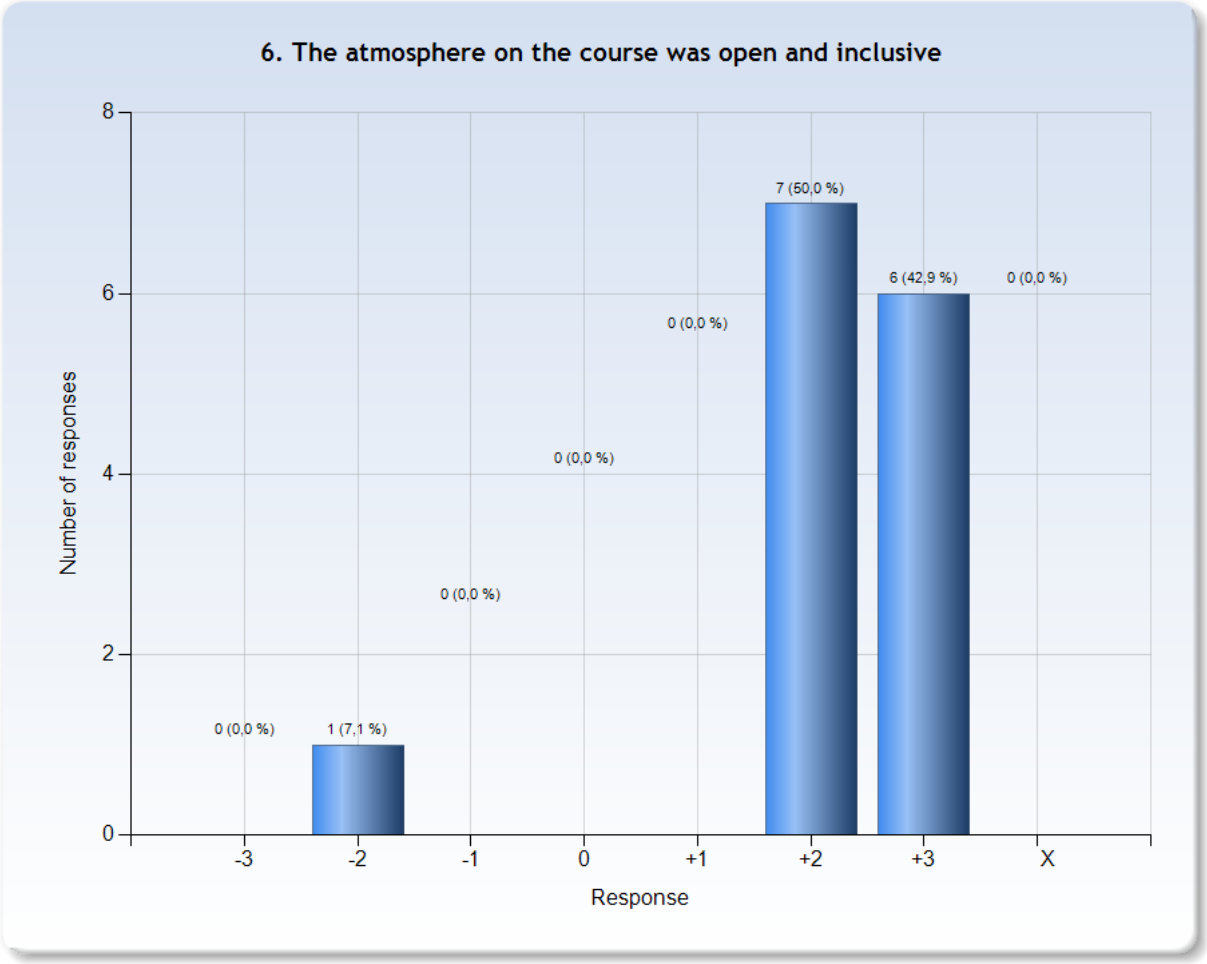
Comments

Comments (My response was: +2)

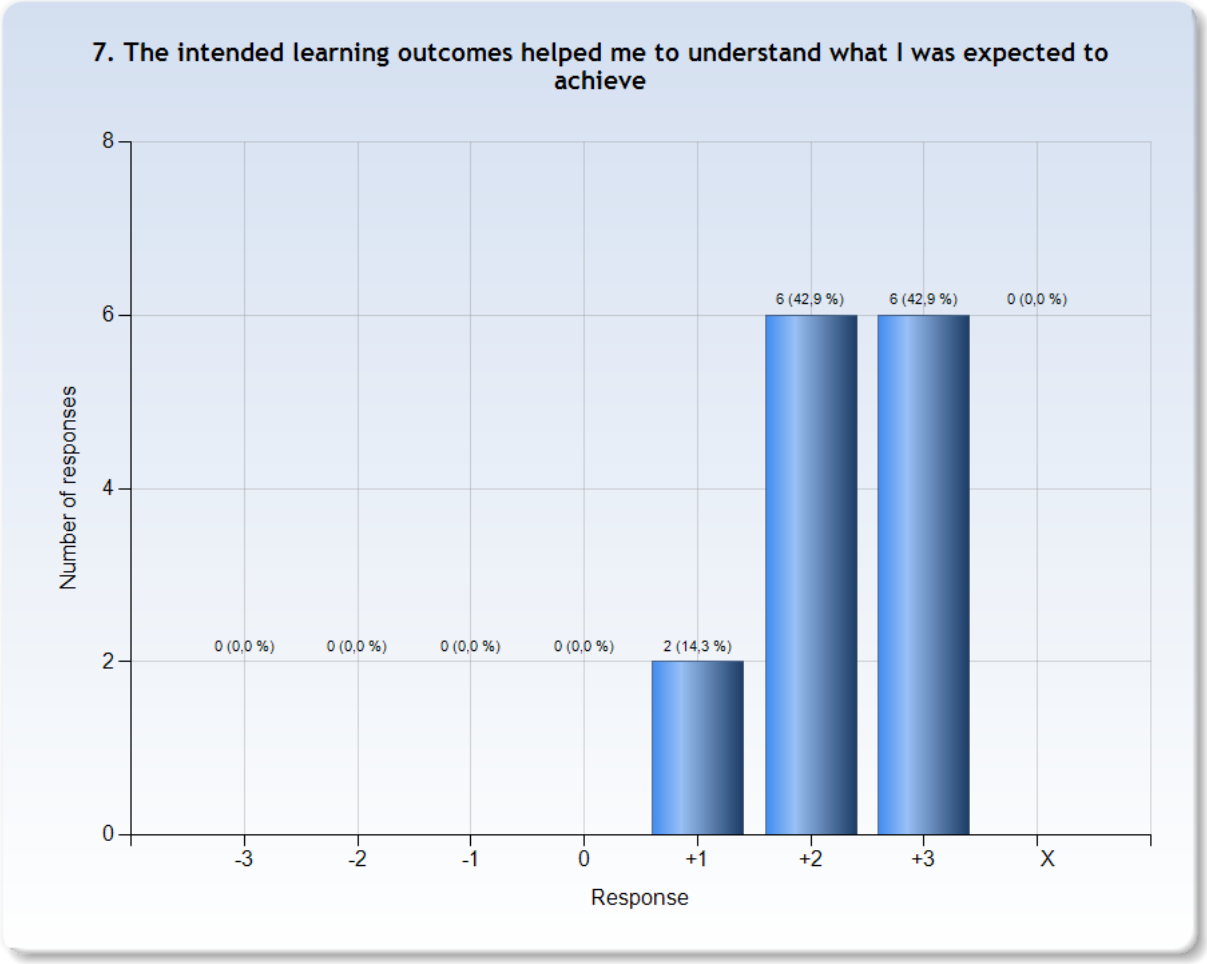
Väldigt roligt med minigrupparbete där det slumpas

Comments (My response was: X)

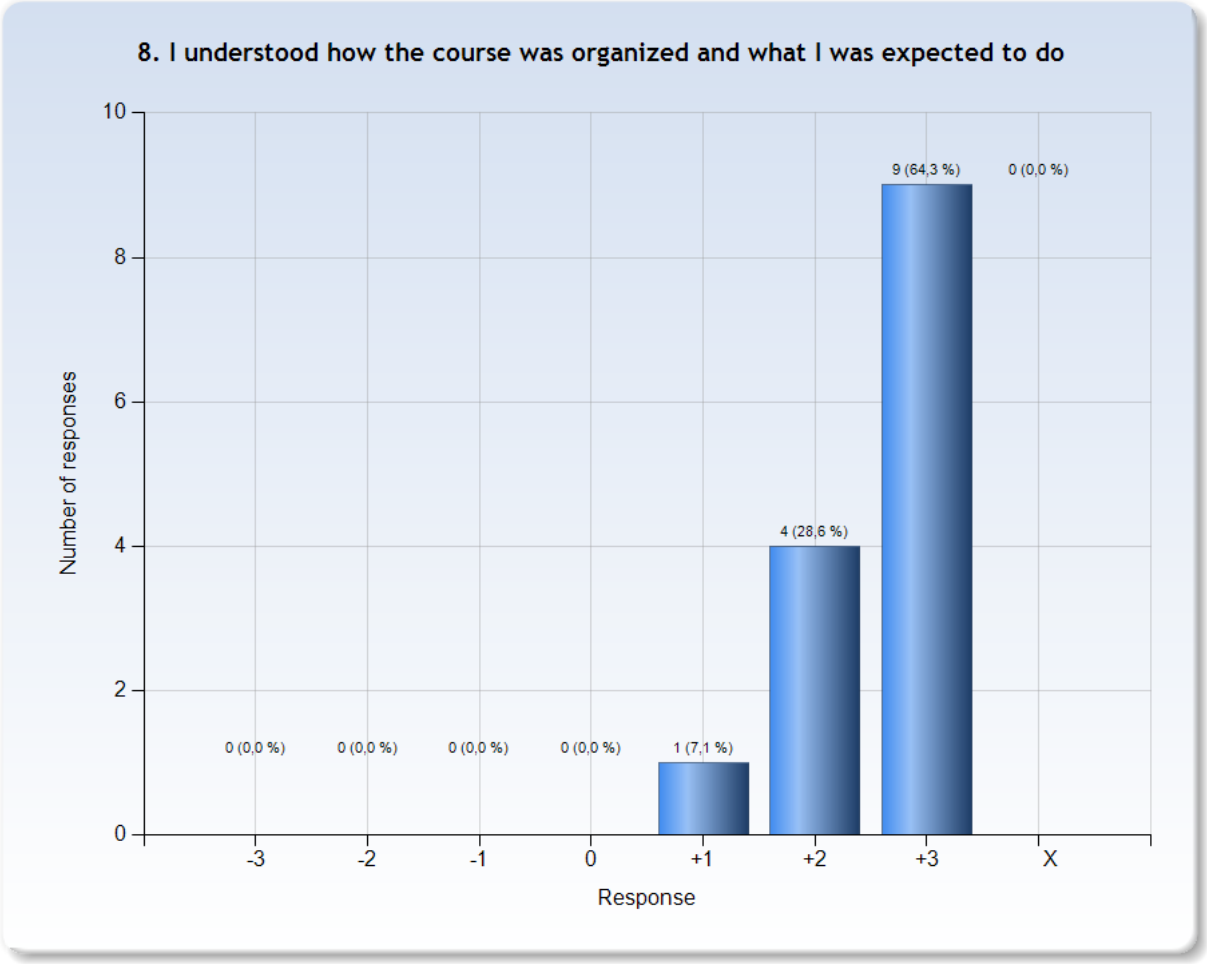
?


6. The atmosphere on the course was open and inclusive
Number of responses
8
6
4
2
0
0 (0,0 %)
1 (7,1 %)
0 (0,0 %)
0 (0,0 %)
0 (0,0 %)
7 (50,0 %)
6 (42,9 %)
0 (0,0 %)
-3
-2
-1
0
+1
+2
+3
X
Response

Comments

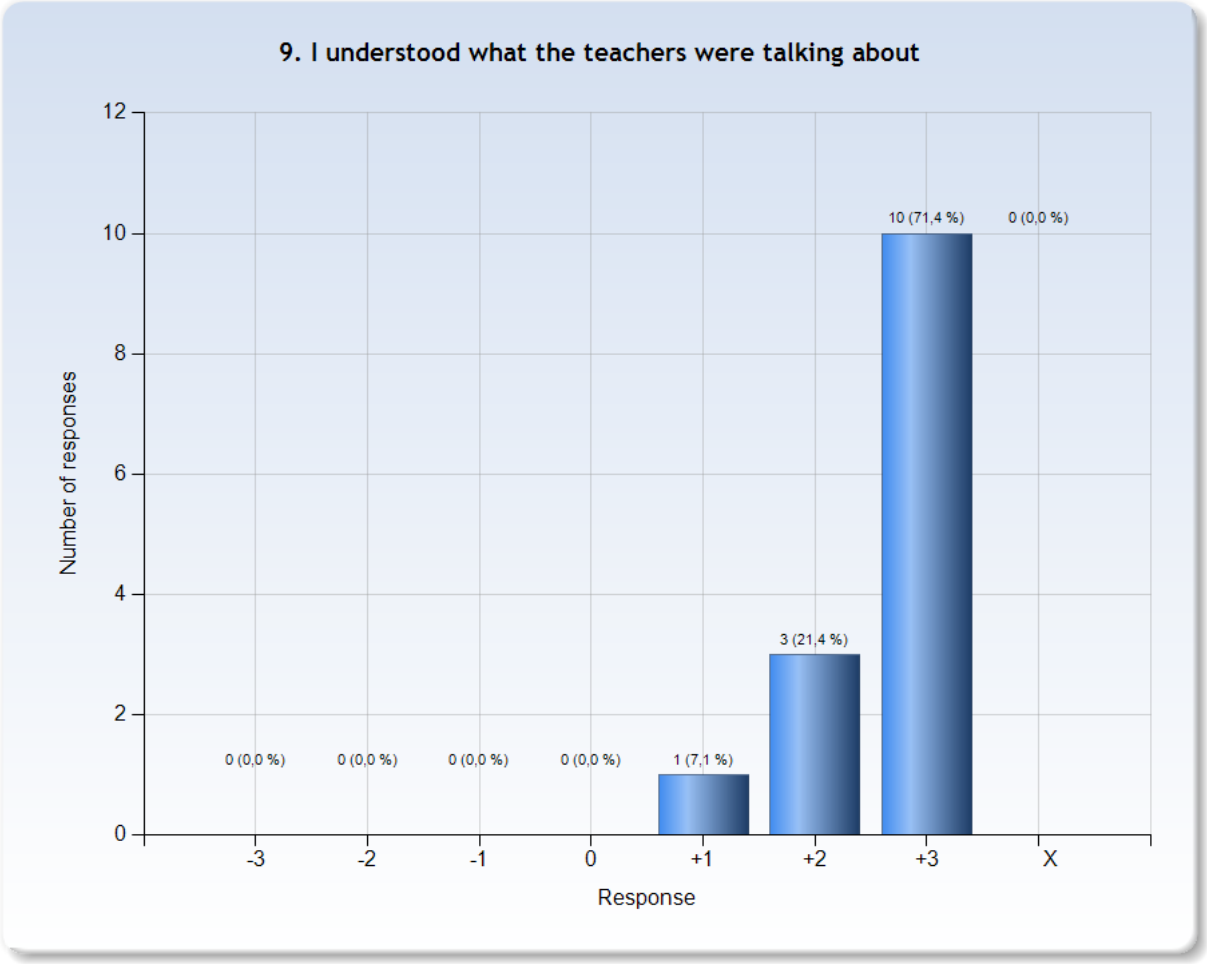

7. The intended learning outcomes helped me to understand what I was expected to achieve
Number of responses
8
6
4
2
0
0 (0,0 %)
0 (0,0 %)
0 (0,0 %)
0 (0,0 %)
2 (14,3 %)
6 (42,9 %)
6 (42,9 %)
0 (0,0 %)
-3
-2
-1
0
+1
+2
+3
X
Response

Comments

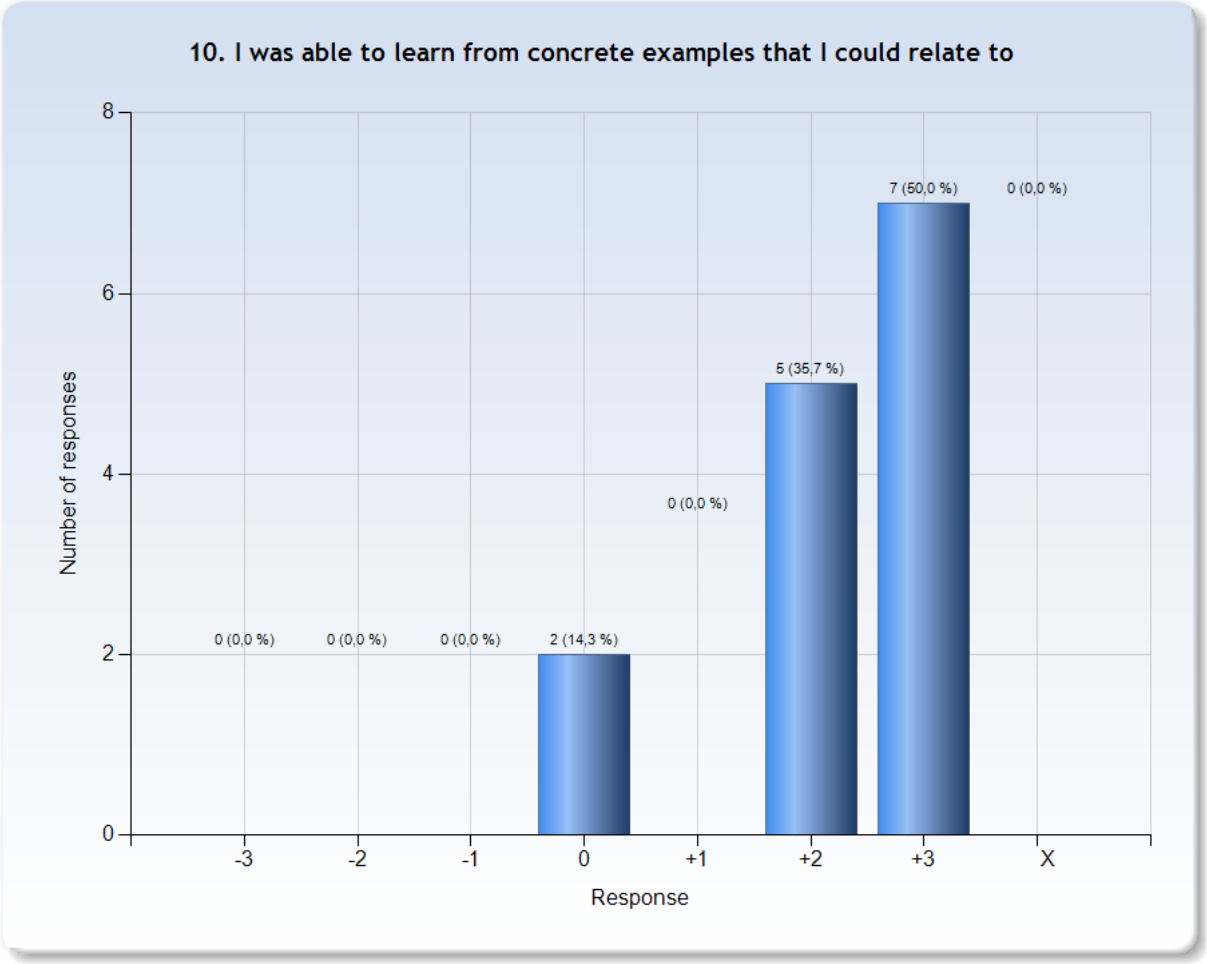


Comments

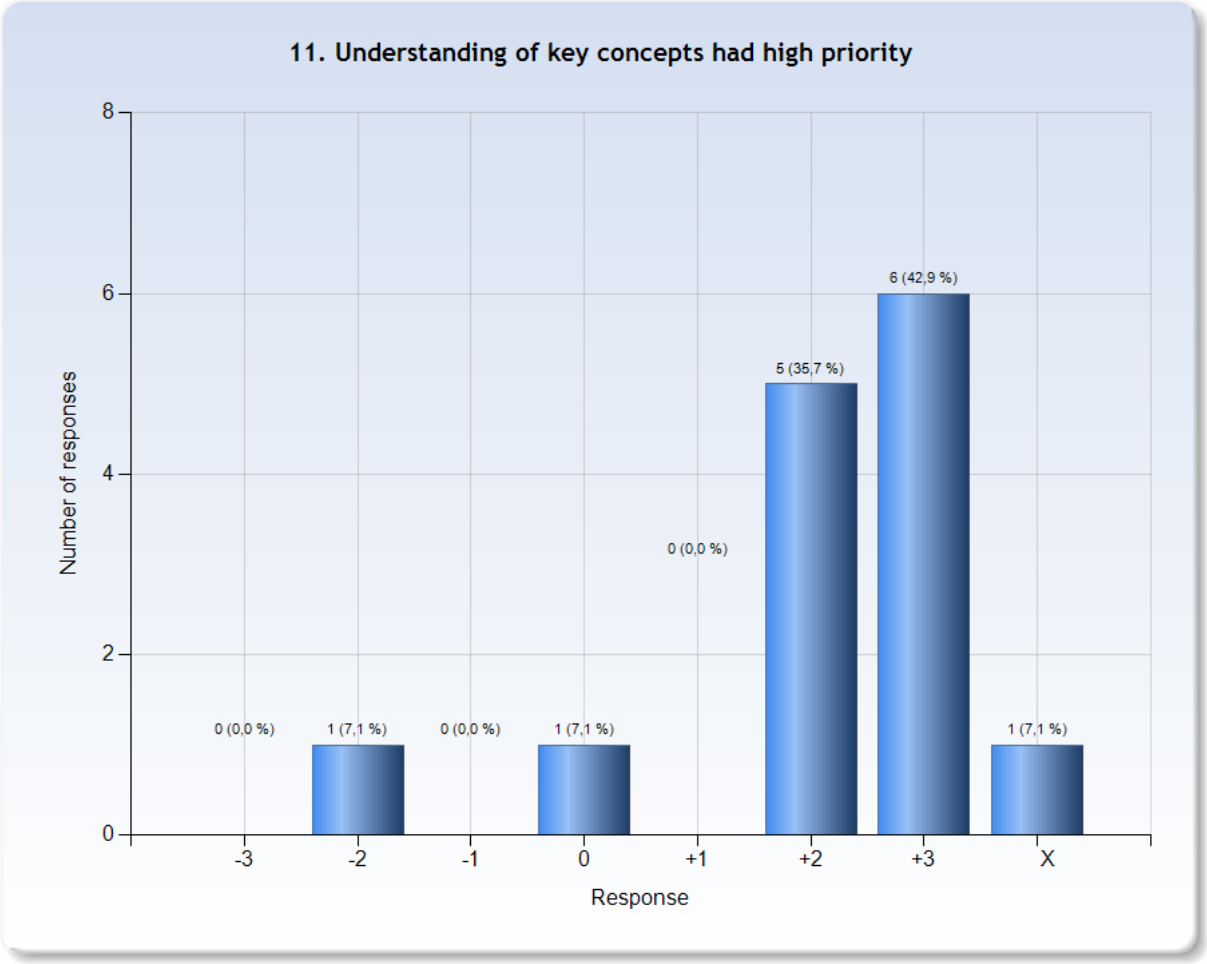
Comments (My response was: +3)
This was really clear to me


9. I understood what the teachers were talking about
Number of responses
12
10
8
6
4
2
0
0 (0,0 %)
0 (0,0 %)
0 (0,0 %)
0 (0,0 %)
1 (7,1 %)
3 (21,4 %)
10 (71,4 %)
0 (0,0 %)
-3
-2
-1
0
+1
+2
+3
X
Response

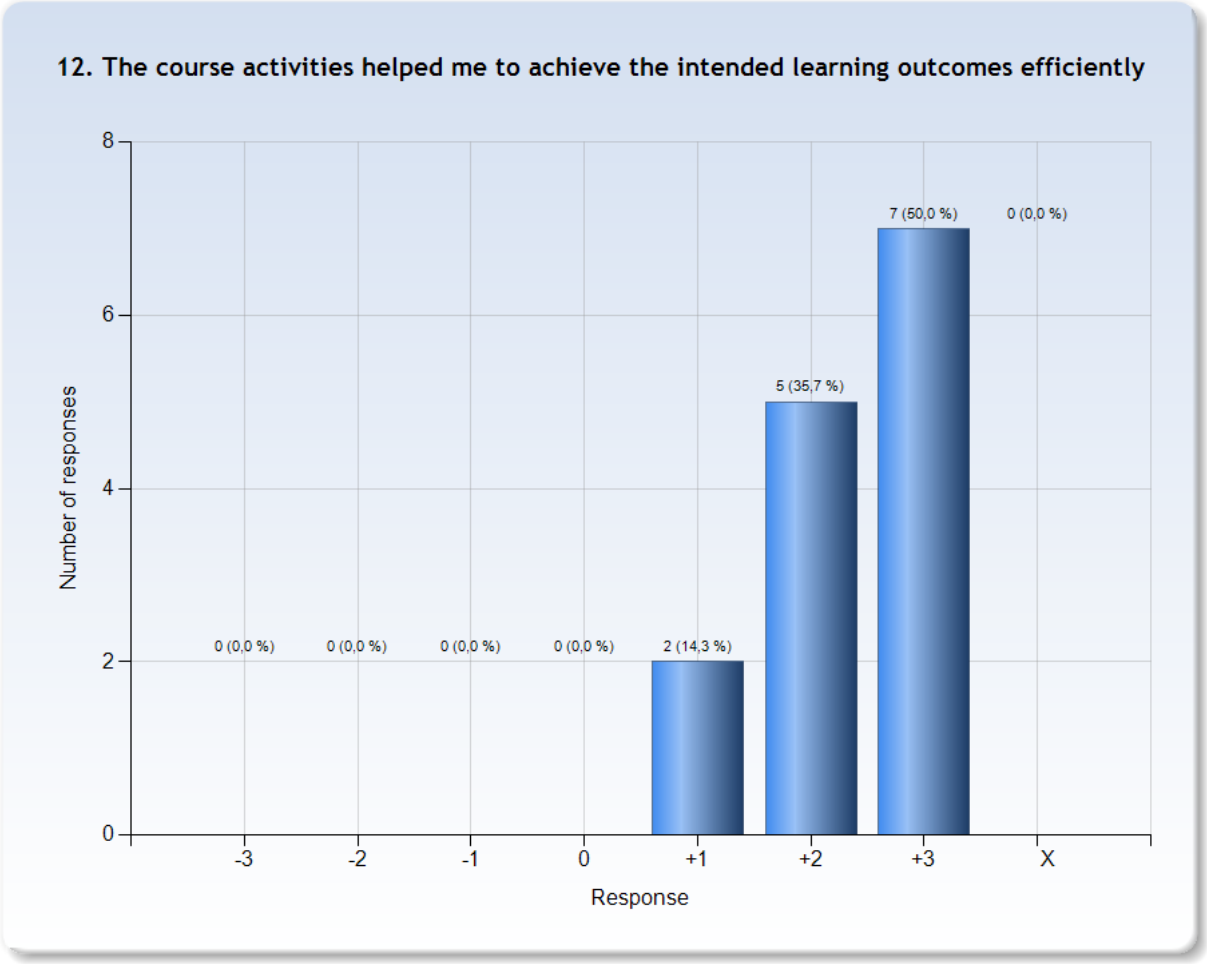
Comments


10. I was able to learn from concrete examples that I could relate to
Number of responses
8
6
4
2
0
0 (0,0 %)
0 (0,0 %)
0 (0,0 %)
2 (14,3 %)
0 (0,0 %)
5 (35,7 %)
7 (50,0 %)
0 (0,0 %)
-3
-2
-1
0
+1
+2
+3
X
Response

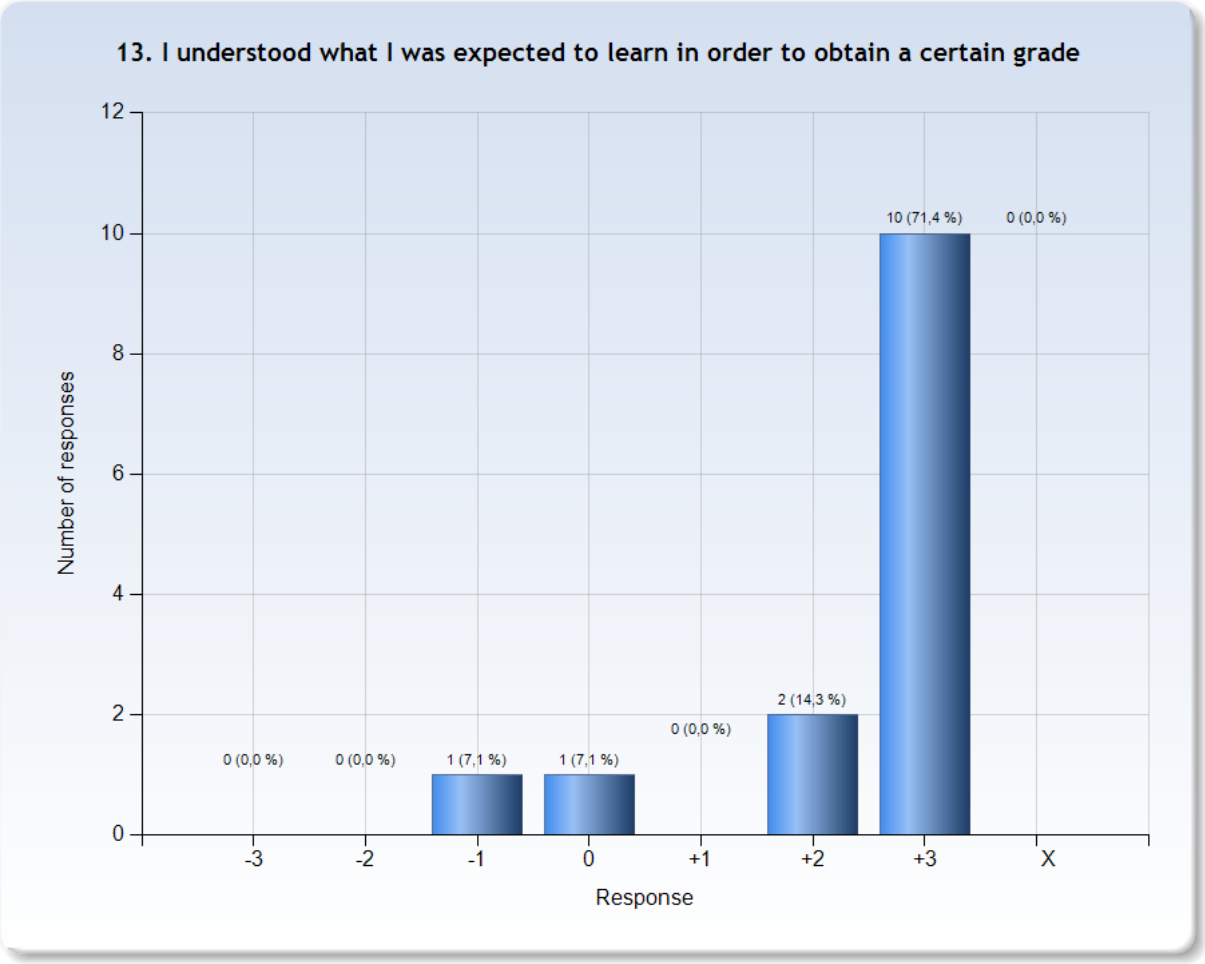
Comments


11. Understanding of key concepts had high priority
Number of responses
8
6
4
2
0
0 (0,0 %)
1 (7,1 %)
0 (0,0 %)
1 (7,1 %)
0 (0,0 %)
5 (35,7 %)
6 (42,9 %)
1 (7,1 %)
-3
-2
-1
0
+1
+2
+3
X
Response

Comments


12. The course activities helped me to achieve the intended learning outcomes efficiently
Number of responses
8
6
4
2
0
0 (0,0 %)
0 (0,0 %)
0 (0,0 %)
0 (0,0 %)
2 (14,3 %)
5 (35,7 %)
7 (50,0 %)
0 (0,0 %)
-3
-2
-1
0
+1
+2
+3
X
Response

Comments



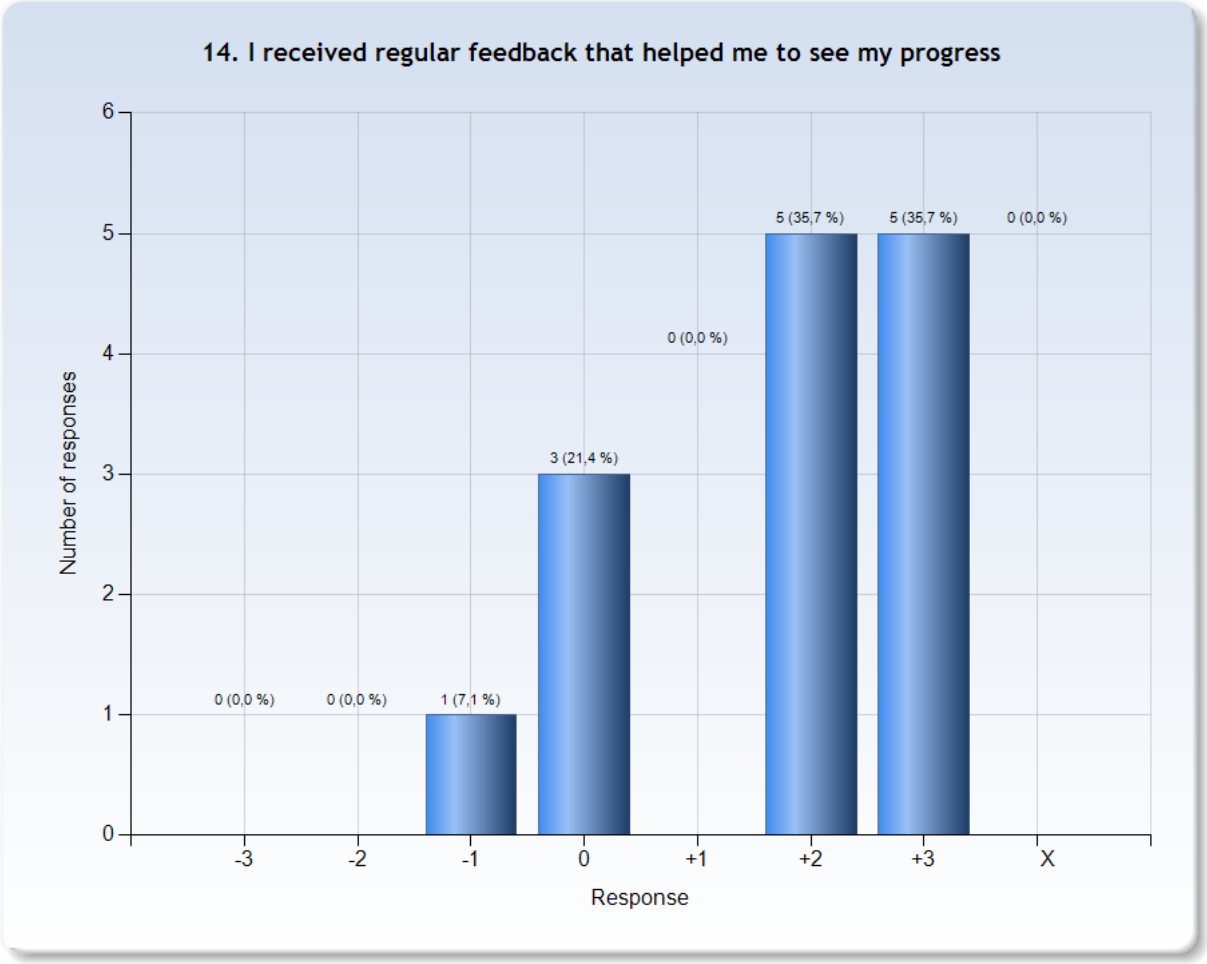
Comments

Comments (My response was: 0)

Probably difficult to establish such levels for this course

Comments (My response was: +3)

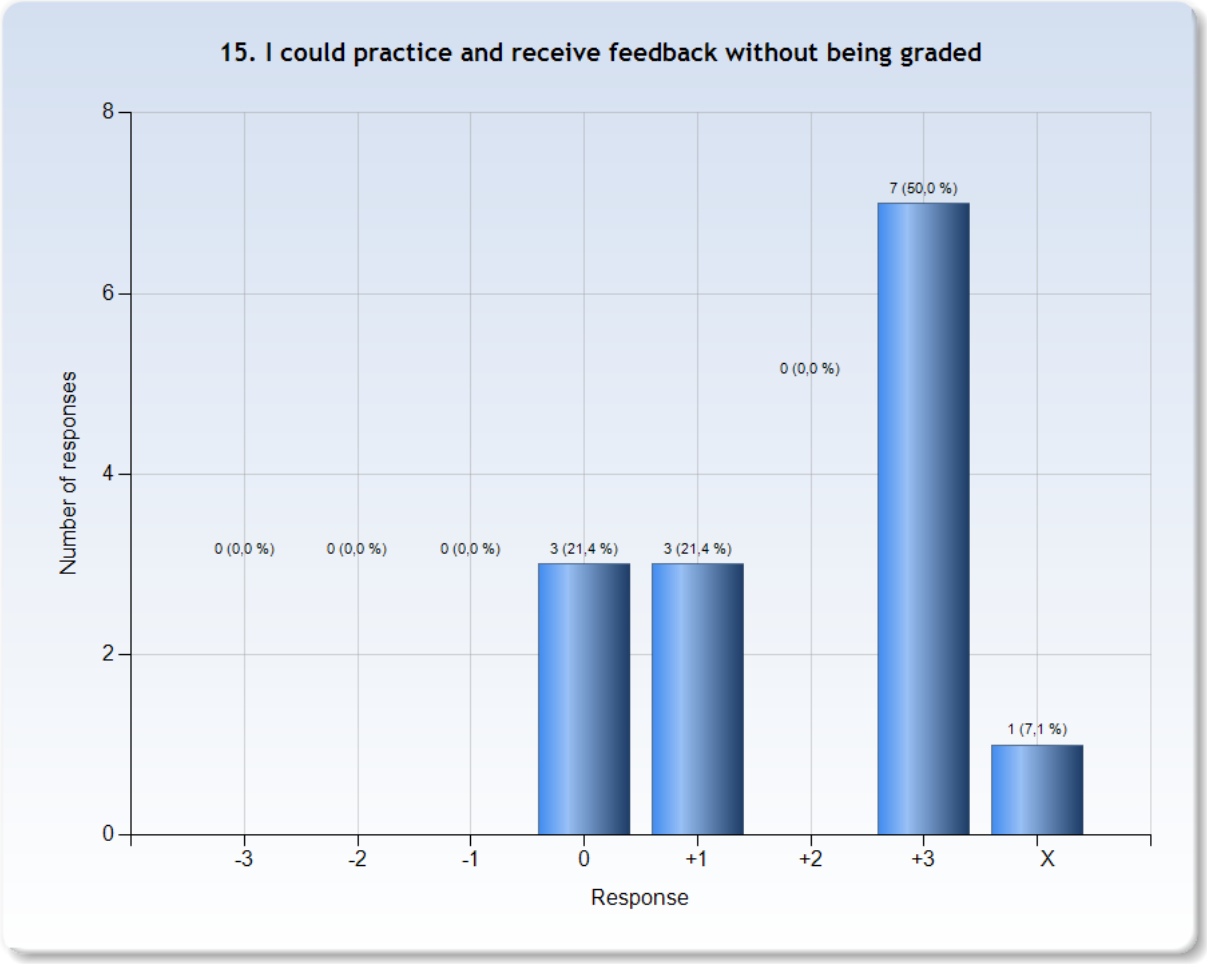
perfectly clear



Comments

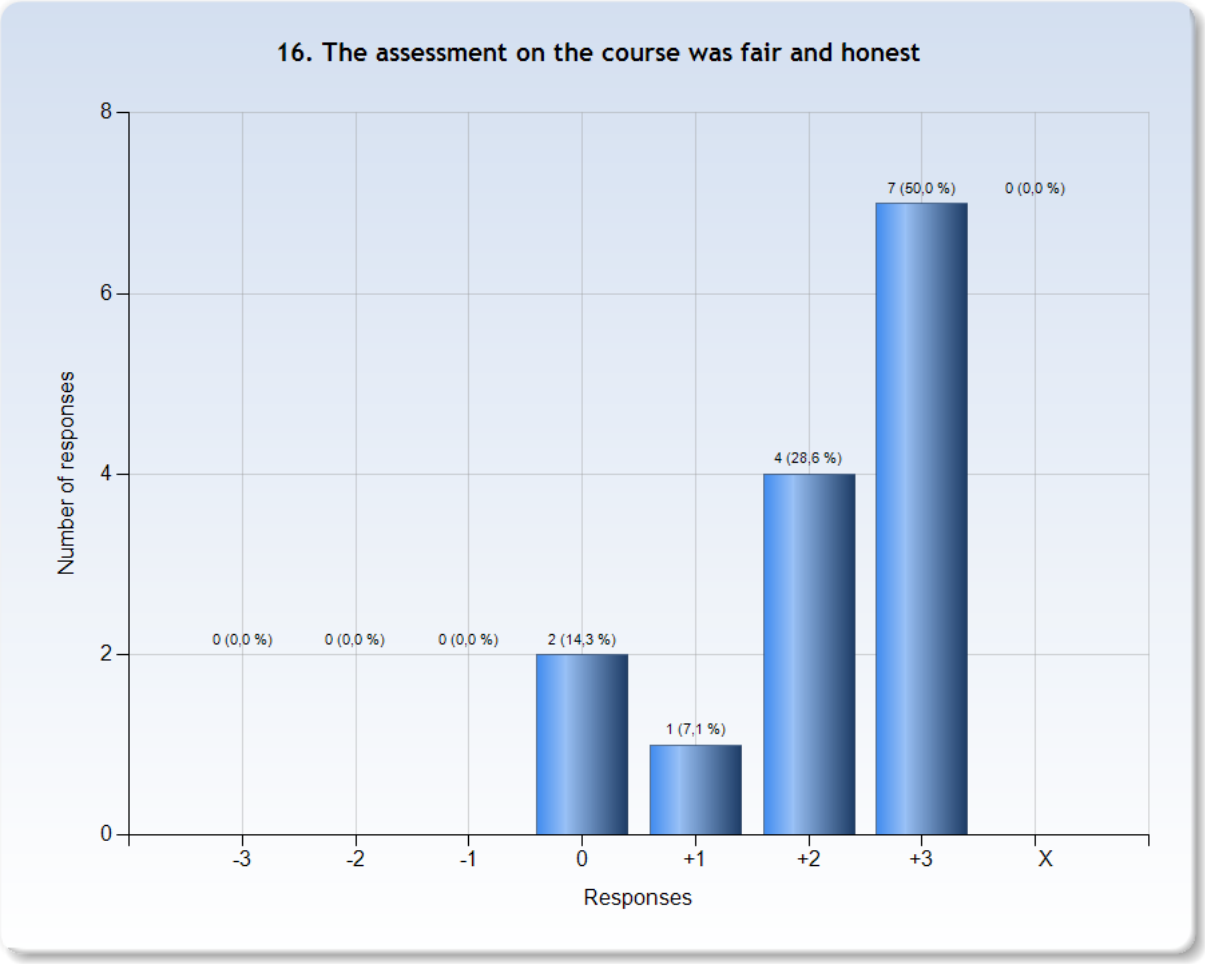
Comments (My response was: 0)
I didn't expect to receive some

Comments (My response was: +3)
With the groupworks, though they could have been more challenging



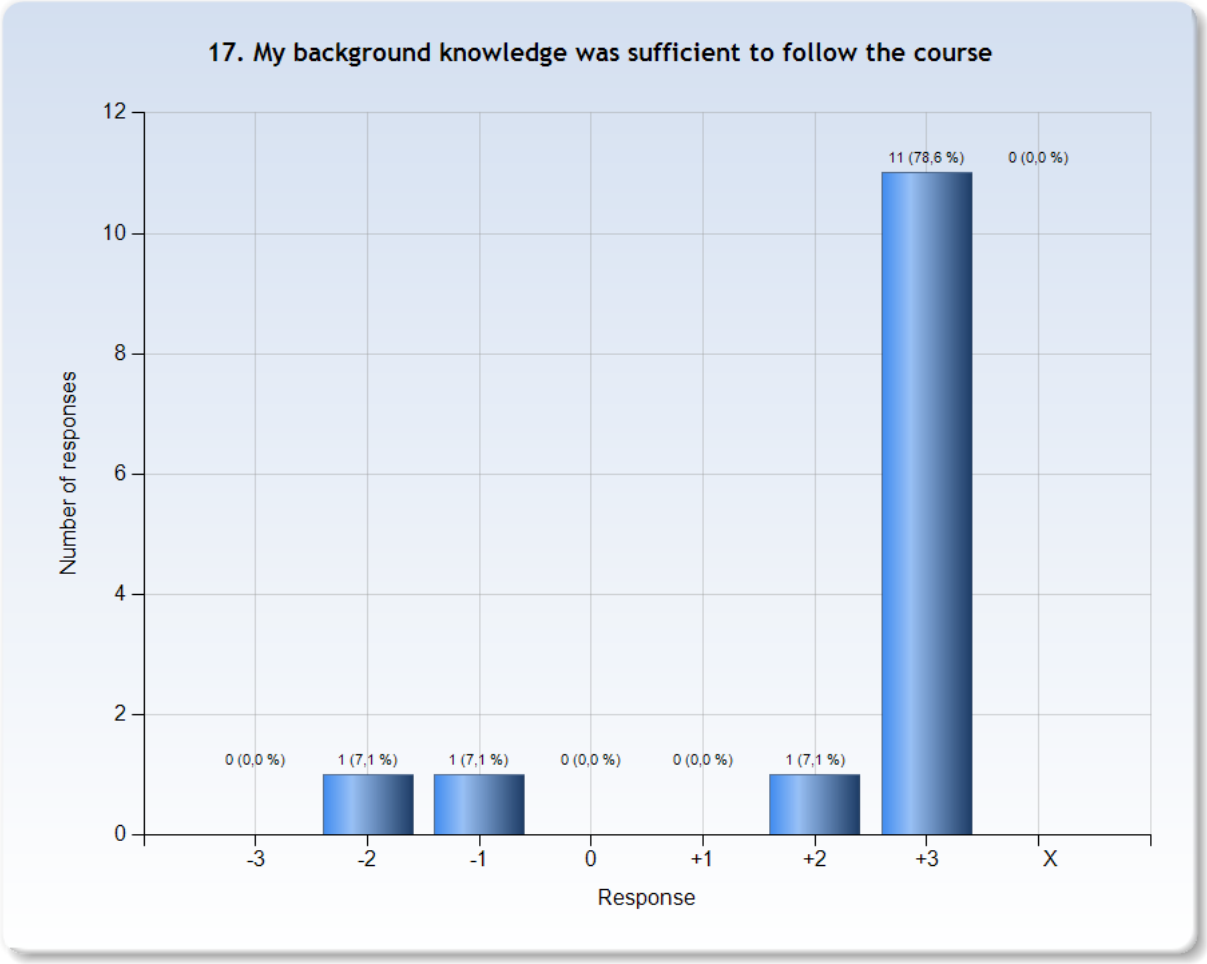
Comments

Comments (My response was: 0)
Jag gjorde inte det men antar att om jag behövt det hade det funnits möjlighet



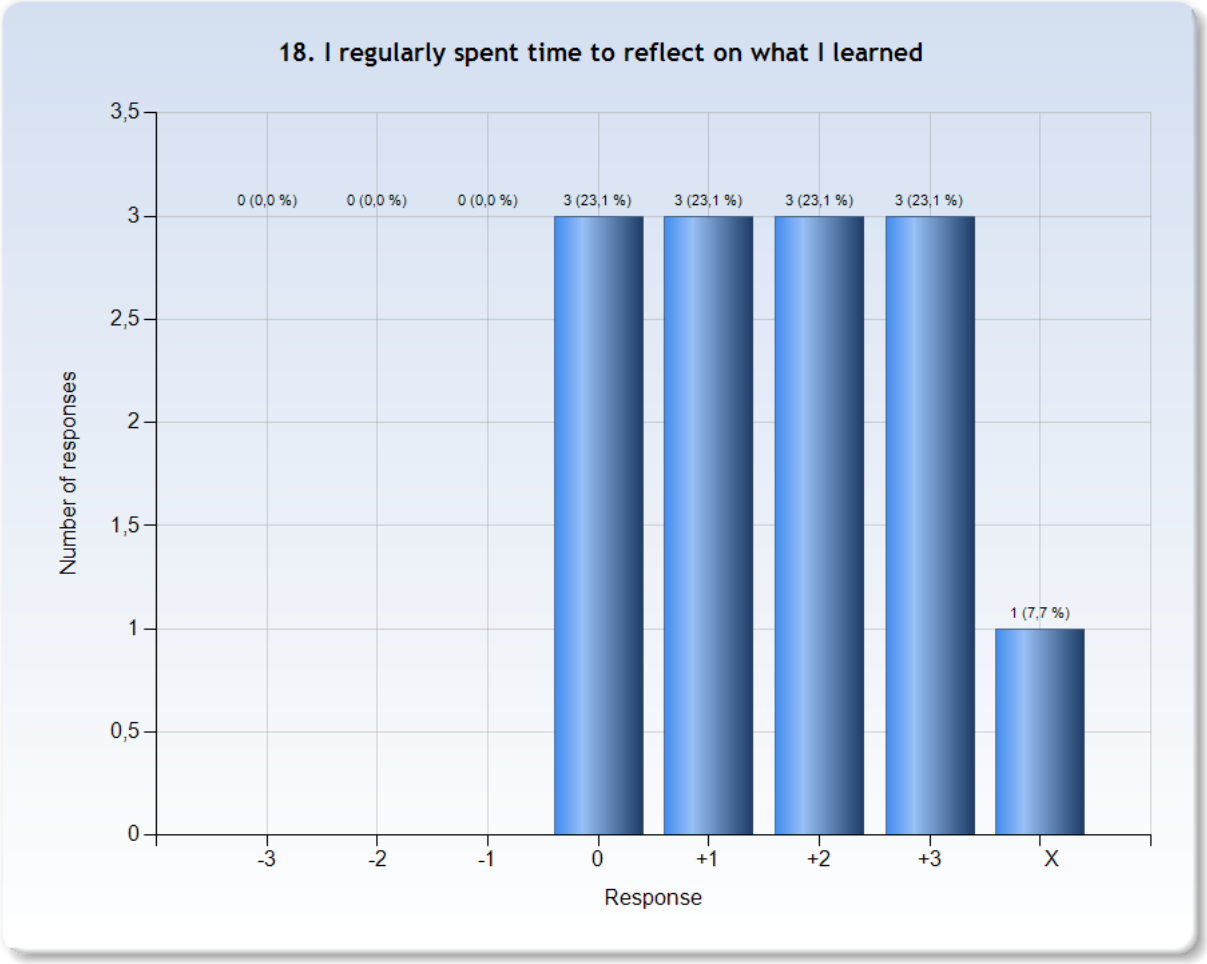
Comments

Comments (My response was: +1)
I found it harder than previous exams



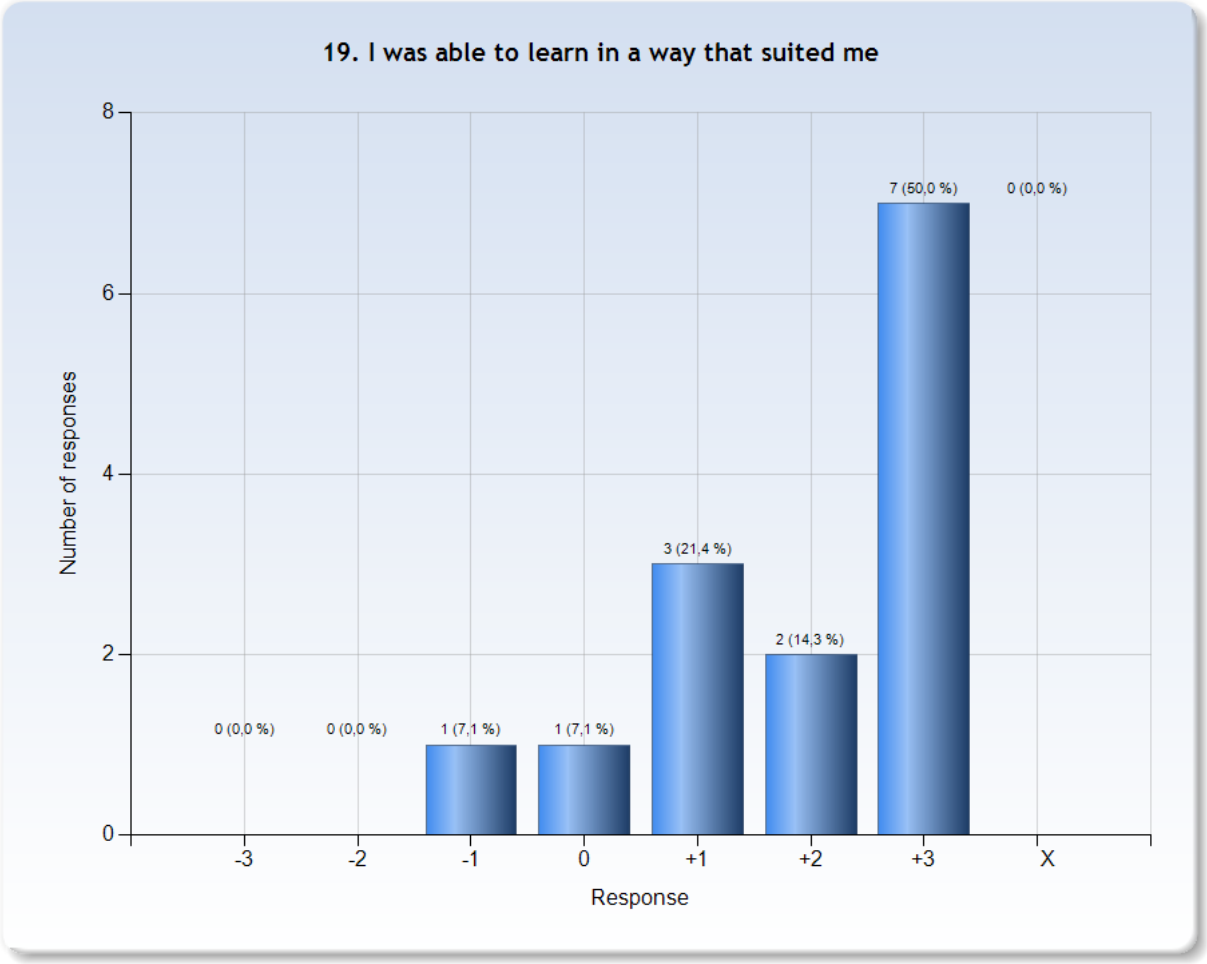
Comments

Comments (My response was: +3)
though I ardly had any prior knowledge on the subjects itself

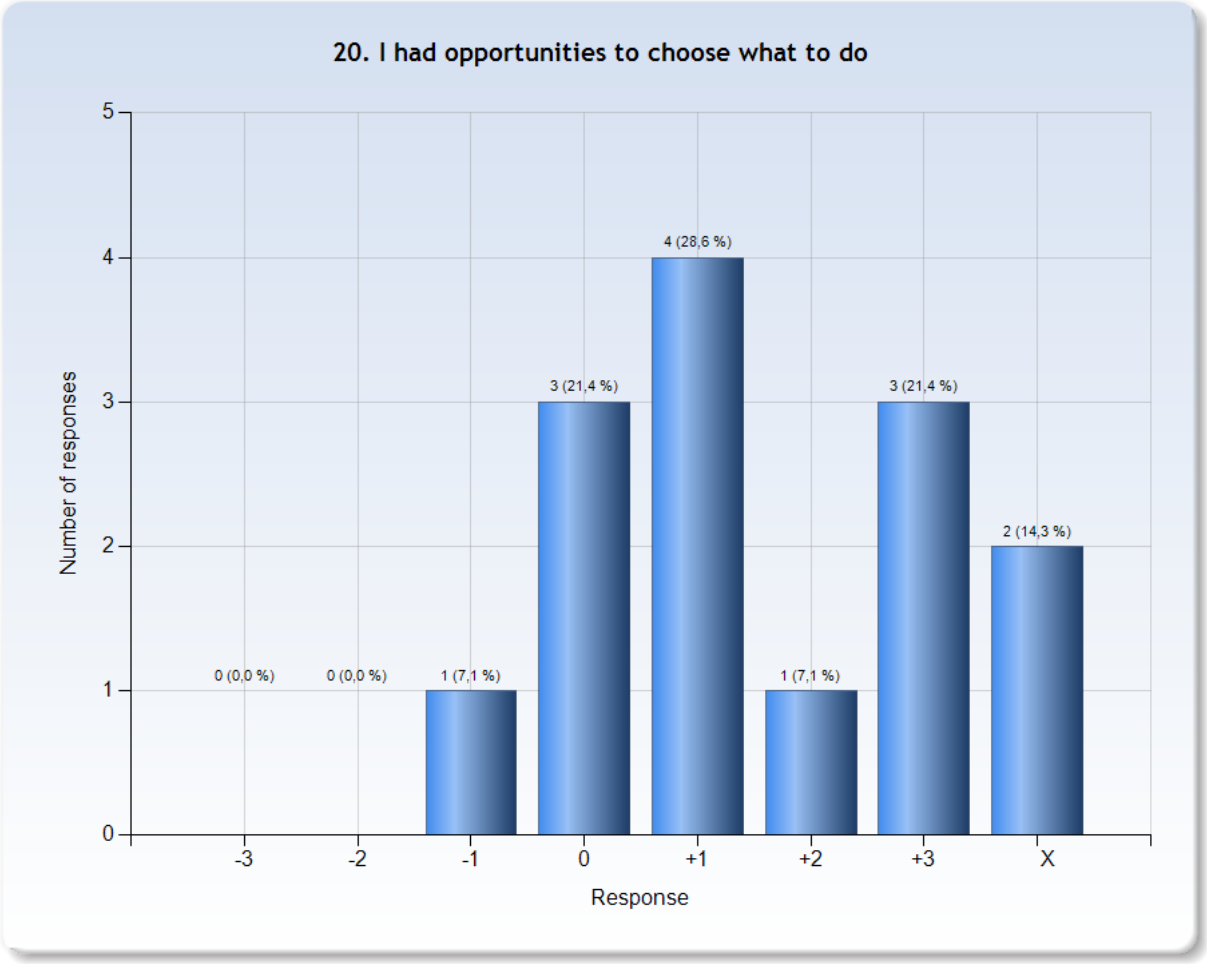


Comments

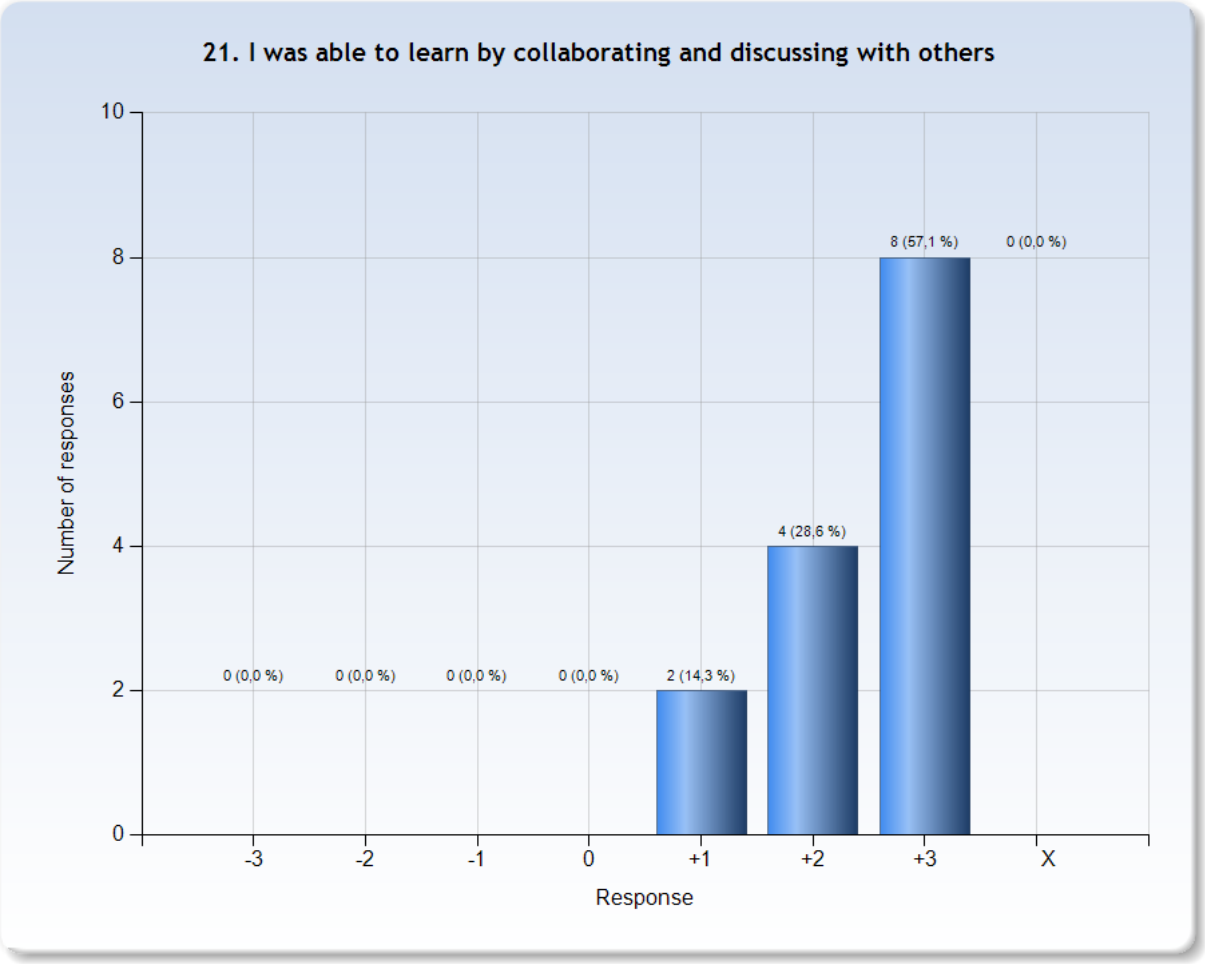
Comments (My response was: +1)
only because every lecture had a recape from the former ione


19. I was able to learn in a way that suited me
Number of responses
8
6
4
2
0
0 (0,0 %)
0 (0,0 %)
1 (7,1 %)
1 (7,1 %)
3 (21,4 %)
2 (14,3 %)
7 (50,0 %)
0 (0,0 %)
-3
-2
-1
0
+1
+2
+3
X
Response

Comments

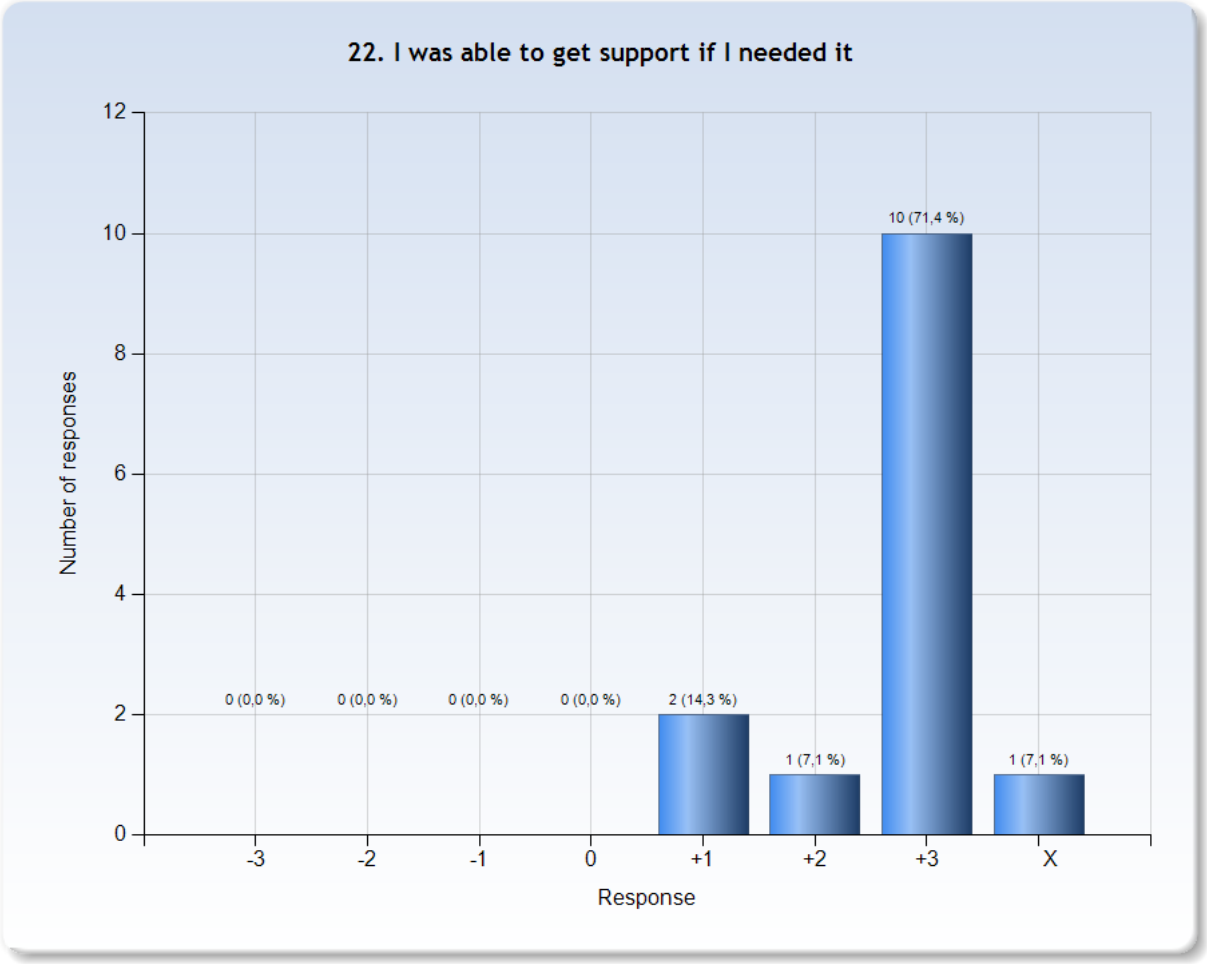

20. I had opportunities to choose what to do
Number of responses
5
4
3
2
1
0
0 (0,0 %)
0 (0,0 %)
1 (7,1 %)
3 (21,4 %)
4 (28,6 %)
1 (7,1 %)
3 (21,4 %)
2 (14,3 %)
-3
-2
-1
0
+1
+2
+3
X
Response

Comments



Comments

Comments (My response was: +3)
Gjorde inte detta men hade nog varit bra att uppmuntra detta ännu mer.. Det var lätt att prata med folk under minigruppsarbetet men resterande tid var alla lite osociala...
Yes, during minigroup works



Comments

Comments (My response was: X)

not asked for support