

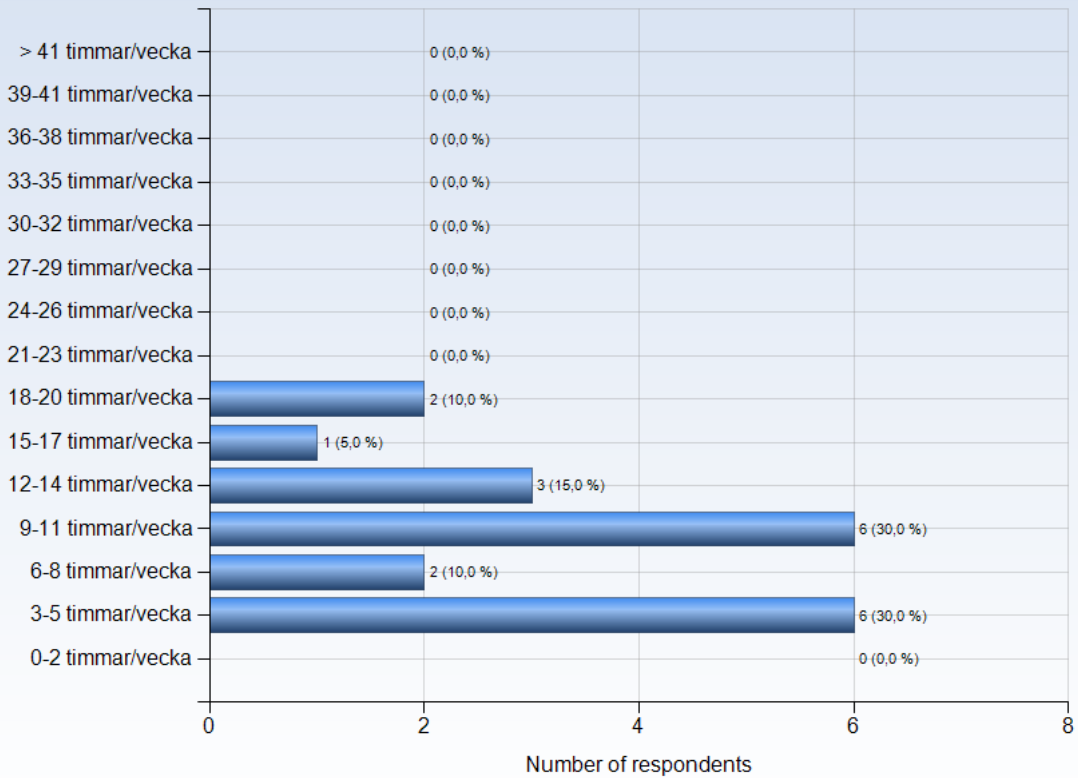


EF2240 - 2019-10-28

Antal respondenter: 49
Antal svar: 20
Svarsfrekvens: 40,82 %

ESTIMATED WORKLOAD

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



Comments

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

I did not feel like I had to work very much in the course.

The workload is okay, it's really manageable.

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

Tid gick mest till schemalagda föreläsningar och övningar.

This course satisfies the workload that is pointed out for a 6-credit course.

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

The workload was appropriate.

Mostly only the scheduled time

The course did not require me to do a lot at home. I feel that it could be more challenging.

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

Good distribution of workload



LEARNING EXPERIENCE

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

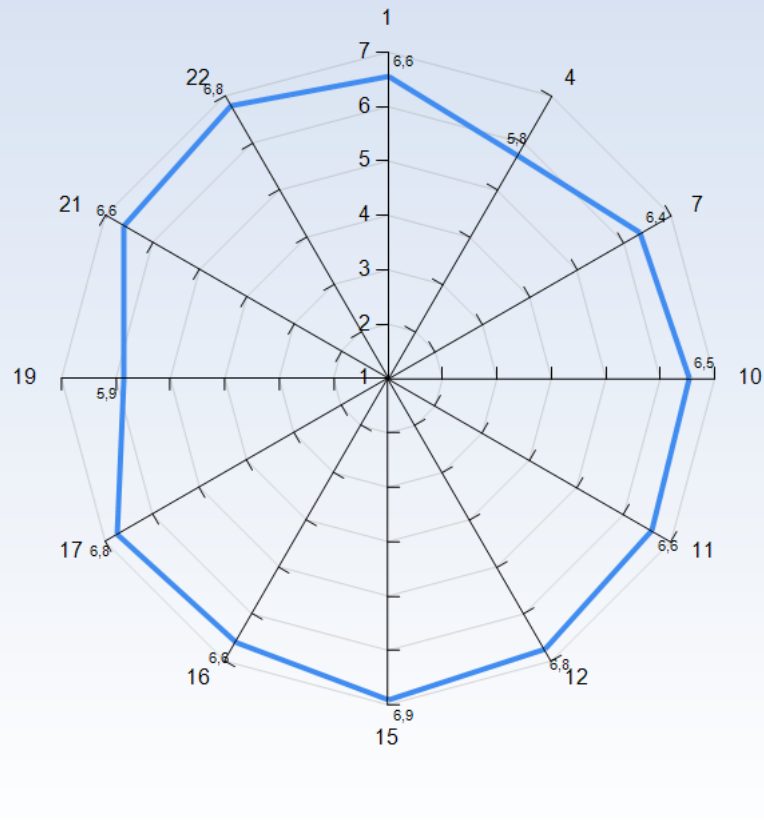
1 = No, I strongly disagree with the statement

4 = I am neutral to the statement

7 = Yes, I strongly agree with the statement

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

Average response to LEQ statements - all respondents





KTH Learning Experience Questionnaire v3.1.4

Meaningfulness - emotional level

Stimulating tasks

1. I worked with interesting issues (a)

Exploration and own experience

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

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

Challenge

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

Belonging

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

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

Comprehensibility - cognitive level

Clear goals and organization

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

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

Understanding of subject matter

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

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

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



Constructive alignment

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

Feedback and security

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

Manageability - instrumental level

Sufficient background knowledge

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

Time to reflect

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

Variation and participation

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

Collaboration

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

Support

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



Learning factors from the literature that LEQ intends to examine

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

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



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

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

Literature

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

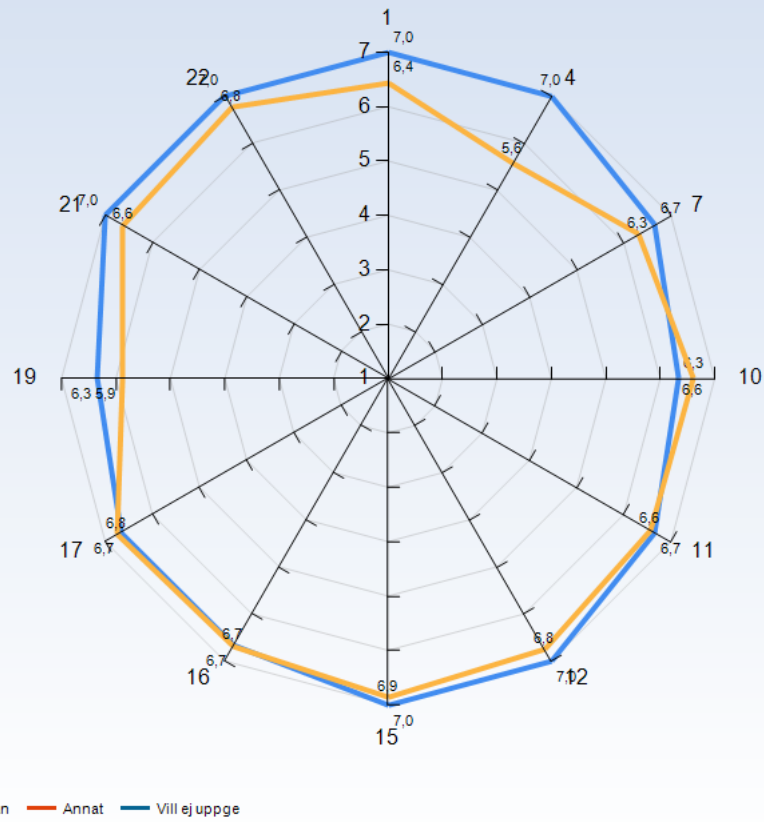
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

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

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

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

Average response to LEQ statements - per gender

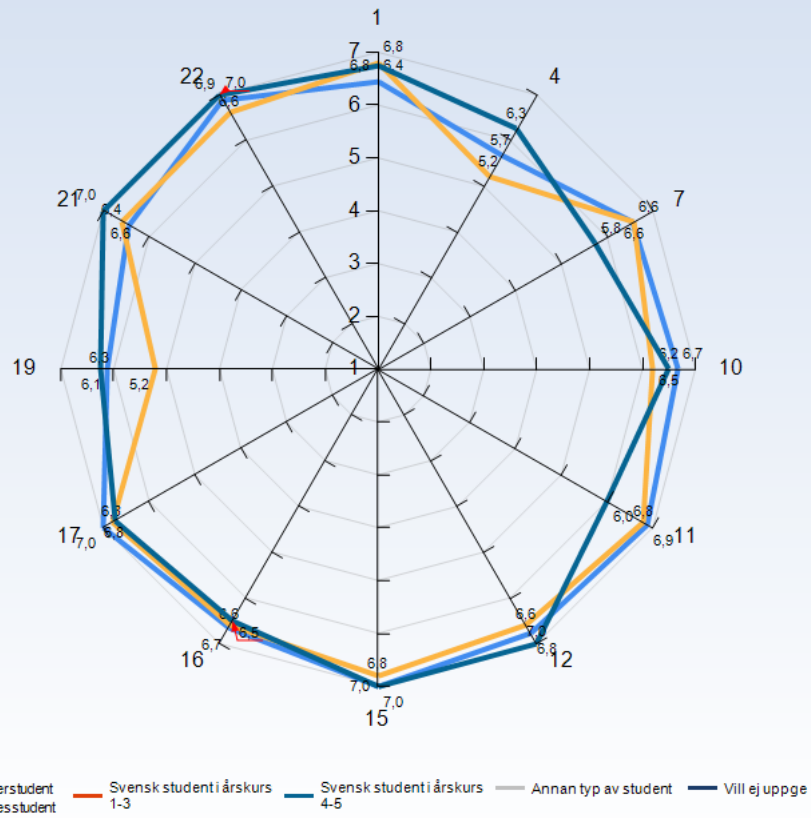


Comments

Comments (I am: Man)

Nothing to say

Average response to LEQ statements - per type of student



Comments

Comments (I am: Internationell utbytesstudent)

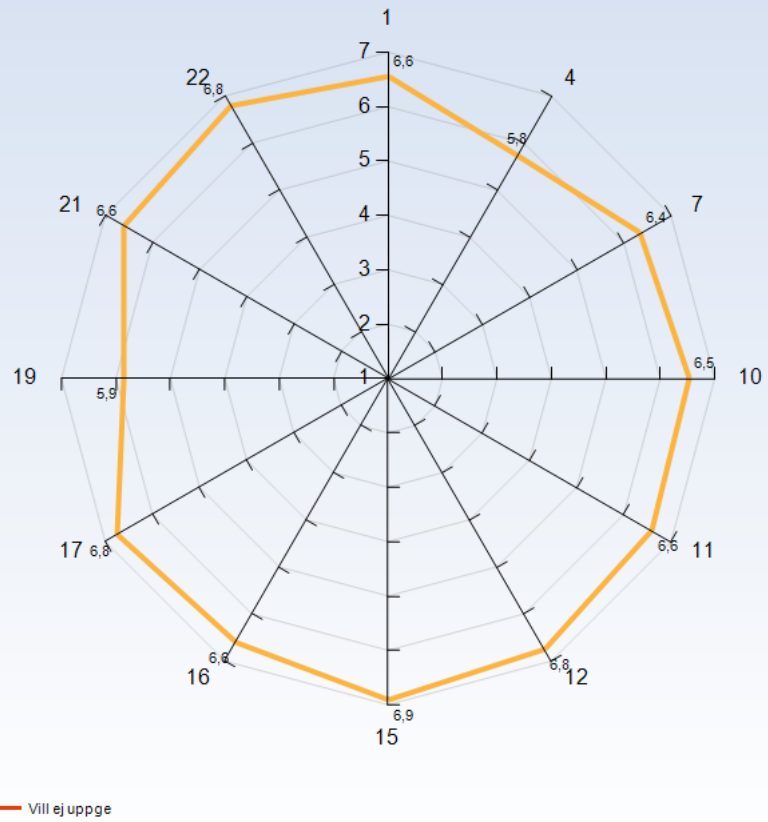
The English of the teacher is very good, such that the course felt inclusive to me.

The course was in english and fully understandable for a non-swedish speaker student.

Comments (I am: Annan typ av student)

Course taken as single course. Graduated from KTH 1998, and wanted a refreshment of the plasma physics for work.

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)

The solar winds and the auroras

Interesting subject

The general culture given by this class. I understand a lot of new concepts that I was not familiar with and it was really interesting.

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

Momentet om magnetosfären hos jorden och andra planeter.

Exercises and group works during lecture. They are challenging, interactive, and useful for an easier understanding.

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

I found the topics really interesting (with real life examples). In my case, coming from telecom background everything was new, so I really enjoyed every single class.

Good structure, mini group works were good for learning.

The way the course gave me an overview of space physics was great, simply by not delving into the details.

The tutorials were very helpful to understand the concepts in the course.

There were interesting examples and exercises to put the theory into practice and understand it better.

The explanations of key concepts were very comprehensive and well presented.

Moreover I really liked the little quizzes during the lessons to make us participate and to check if we correctly understood key concepts.

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

The subject and teaching

The course was very well organized.

Ungraded example exam problems.

The detailed way in which tutorial problems and answers to groupwork was discussed to ensure understanding.

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

Good overview of the subject.

What would you suggest to improve?

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

Nothing that I can think of

I don't see any improvements needed.

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

Momentet om norr- och sydsken kan behöva mer tid för att gå igenom beräkningarna på strömmar (Birkeland främst).

I would like to do a project or laboratory sessions where we might apply the theory behind this course.

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

The solutions of the tutorials/old exams were sometimes wrong. I guess they haven't been properly updated from previous years. I spend quite some time with my class mates trying to figure out our mistakes, even though we were right from the beginning. So please update the solutions.

-

When doing exercises on the board you can skip writing down all the values. Just say you put in the values and get this result.

Making the course a bit more challenging. Also, I think a good and different way of learning about space plasmas is by a small literature study and report writing.

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

Everything was good

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

Everything is already good.

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

The course material is good, but a little old. Recent advances as for example an overview of present solar observing satellites capabilities is for example interesting.



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)

Do the mini groupwork

Follow the guidelines given by the teacher and everything will be fine, plus you'll have a good time.

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

Gå på föreläsningar och läs i CGF.

participate and solve all exercises given by the professor.

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

Do the tutorials in advance or as soon as you can solve them and ask questions in case you're unsure. Especially the sign conventions can be confusing. Then do the old exams before the actual exam and you're fine.

Read the book to get more complementary knowledge. And try to do the Tutorials (they are really useful for future Mini-group exercises.

Make a good effort on the group works and you'll make the course

Go to all the lectures (as I did), as they are really great!

Attend all the tutorials

To work regularly and do seriously the exercises, so they will be well prepared for the exam and they will be able to check if they really understand all the aspects of the lesson.

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

Attend the lectures and tutorials and pay attention to details

Try to solve the tutorials by yourself first.

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

Do the mock exam even if it is not graded, it is helping a lot.

Is there anything else you would like to add?

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

I wonder if the Fälthammer book is still up to date. Maybe it is nice to also tell some things about the more recent work in space physics?

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

I suggest to add the Strömgren radius to the formula sheet.

The continuing part-2 course is not available to non program students.

SPECIFIC QUESTIONS



What did you think about the lectures?

What did you think about the lectures?

Great

Bra med sammanfattningen om föreläsningen innan, det hjälpte med förståelse om var i kursen vi var. Bra PP-bilder med inte för mycket information på varje.

Great, I like the recap at the beginning of the lecture.

The lecture slides were sometimes confusing due to the overlapping lectures. Maybe it would be better to plan less for each lecture, but finish the topic. Some slides we had twice or even thrice.

In almost each lecture I learnt something new (I came from a purely telecommunications engineering background) so I really enjoyed the lectures.

Interesting, keeps you engaged with the questions and so on.

They were very interesting, although the pace could be put higher. Really enjoyed all the beautiful images and videos!

I would have preferred to have some of it on the whiteboard but otherwise they were really good.

Very well organized, the recap before the lectures is very useful.

Really good lectures, well explained with lots of illustrations and charts.

Good, interesting

Lectures are interactive. I really like the quick questions to answer.

Lectures where really nice.

They were really interesting and easy to understand.

Good.

What did you think about the tutorials?

What did you think about the tutorials?

Really good

Passande i denna kurs att de var nära in på föreläsningar då beräkningarna hade presenterats innan. Indelningen med genomgång första timmen och grupparbete andra timmen var bra då vi kunde sätta oss in i ämnet under första timmen.

Very helpful and representative of subjects and exam

The tutorials were really helpful!

Very useful to prepare you for Mini-Group and mock exam exercises. Is a way to make you follow the lectures putting numbers and learning some order of magnitude.

Helpful for getting a feeling for how a typical problem looks like.

The tutorials did not add a lot to my learning, as the pace was too low and the exercises too easy.

They were very helpful to understand the course.

Great to understand better the theory.

Allowing some time in tutorials which is 'free' to allow working on problems by ourselves and asking questions would be good.

I think it would be good to spend more time to ensure detailed understanding of current sheets in practical applications.

Very interesting subjects (like the calculation of the stand-off distance of Mercury's magnetosphere). Moreover, they are a good way to put the theory into practice and be well prepared for the exam

Super good

Tutorials are useful to remember/apply the theory given at class. They help you to be ready for the minigroup works as well.

The tutorials were nice too.

Really good to put into applications what was learned in the lecture.

Good, but sometimes not synchronized with the lectures.



What did you think about the minigroupworks?

What did you think about the minigroupworks?

Perfect way to learn

Det var viktigt att inkludera alla och kommunicera vad alla tyckte om problemen, då kunde vi effektivt hjälpas åt. Problemen var på en bra nivå för den timme som var avsatt.

Good way to discuss subjects with others to understand them better and a good way for extra points. Very helpful

Good! Discussing the topics in groups deepens the understanding.

A good way to put in practice the things learnt during the lectures. In my case I was a little bit lost the first days so the first minigroups really helped me to fully understand some concepts. Also is nice to see the way of thinking of people from different backgrounds.

Excellent

They are a fun way of engaging in the material with other students.

It was nice to be able to learn from each other and work on questions close to the exam questions.

Very useful to put in practice what we've learned and to work with others

I like the idea to always work with other people, and the problems are interesting because they are often based on real scientific charts.

Fun and learned a lot

They are challenging and interesting. Besides, the minigroup works help you to study for the final exam.

The minigroupworks are really useful the only bad aspect could be that you can work with people not really involved sometimes. (has not been my case though)

Good to integrate the studying class and discuss about things we couldn't understand.

Stressfull at first. But you got use to it.

What did you think about the exam?

What did you think about the exam?

Easy but the exercises instruction weren't always clear

Bra material, den inkluderade mycket av kursinnehållet (inte aurora) och man var tvungen att ta hjälp av sina anteckningar och kursmaterial (de kom till nytta).

I liked the way the exam was conducted, allows for understanding of a subject instead of just memorizing information

The exam was fair. Good mix between easier and more difficult questions.

We were asked about things done during the lectures. The time was more than enough to finish everything. Also I like that you need somehow make assumptions or give typical values to solve some problems (although it took a lot of time to figure that).

Good, but allowing us to bring all material on the course page was maybe a bit generous.

It could contain more questions, in order to make it more balanced between all topics.

I thought it covered the essential things. It was nice to be allowed to bring all the notes and books, it doesn't make sense to learn all those constants and equations by heart.

Good, focused more in understanding the problem rather than memorizing the procedures.

I think it was quite easy if we have done seriously the tutorials and minigroupworks.

Seemed easy (haven't got the results yet so do not know for sure)

Exam covered the theory learnt at class. Good exam.

The exam was interesting and fair.

Nothing to unexpected. Time was enough to make a check of the solutions a second time, and and hopefully fix them.

What did you think about the mock exam exercises?

What did you think about the mock exam exercises?

Passande i omfattning så att de liknade typiska tentatal.

Helpful and representative of exam. And allows for feedback and understanding of final grading

Really helpful for exam preparation!

Useful to see how the teacher correct them and challenge yourself. Sometimes you miss the units, ... etc

Didn't do them

I liked that the teacher corrected all exercises of the participating students and took his time for it. Although I do not think that the exercises add a lot to the tutorials or the minigroupworks.

I think they were a good way to understand how the exam will be corrected.

Useful way to get feedback without getting graded.

It was interesting and simulating because it was more about resolving a problem rather than a serie of questions.

Did Unfortunately not do the mock exams

They are useful for studying for the final exam. I would like to solve more exercises in the mock exam, not just one.

Really useful as I said before.

Good trainings, I would say it's a must have.

Less useful, compared to the tutorials.



What did you think about the course as a whole?

What did you think about the course as a whole?

Nice

Kul och engagerande kurs.

I enjoyed it. Well structured course

I liked the course, only the things mentioned above could be improved.

If I hadn't done it I would enroll it for sure. Really interesting course, more conceptual than mathematical.

Fun and interesting

It is a very great course with one of the best lecturers I have encountered!

I think it was a good and interesting course.

Very well structured, I was really surprised by the pedagogical skills of the lecturer. The lecturer knew about the subject very well and also knew how to explain clearly, a combination that is not easy found.

Very interesting and comprehensive, not too difficult if we work regularly, possibility to ask help to the teacher and have good feedbacks.

Fun, learned much and made me more interested in space physics

Excellent course. An interest for space physics rose after taking this course. I would like to have lab sessions or project to have something much closer to real life problems/research.

I enjoy the course, but I would have like to go more in the maths sometimes. This is something that is done in Space physics 2, I guess.

I loved this class, if I had to redo my study plan I would take this class again without doubt

good

RESPONSE DATA

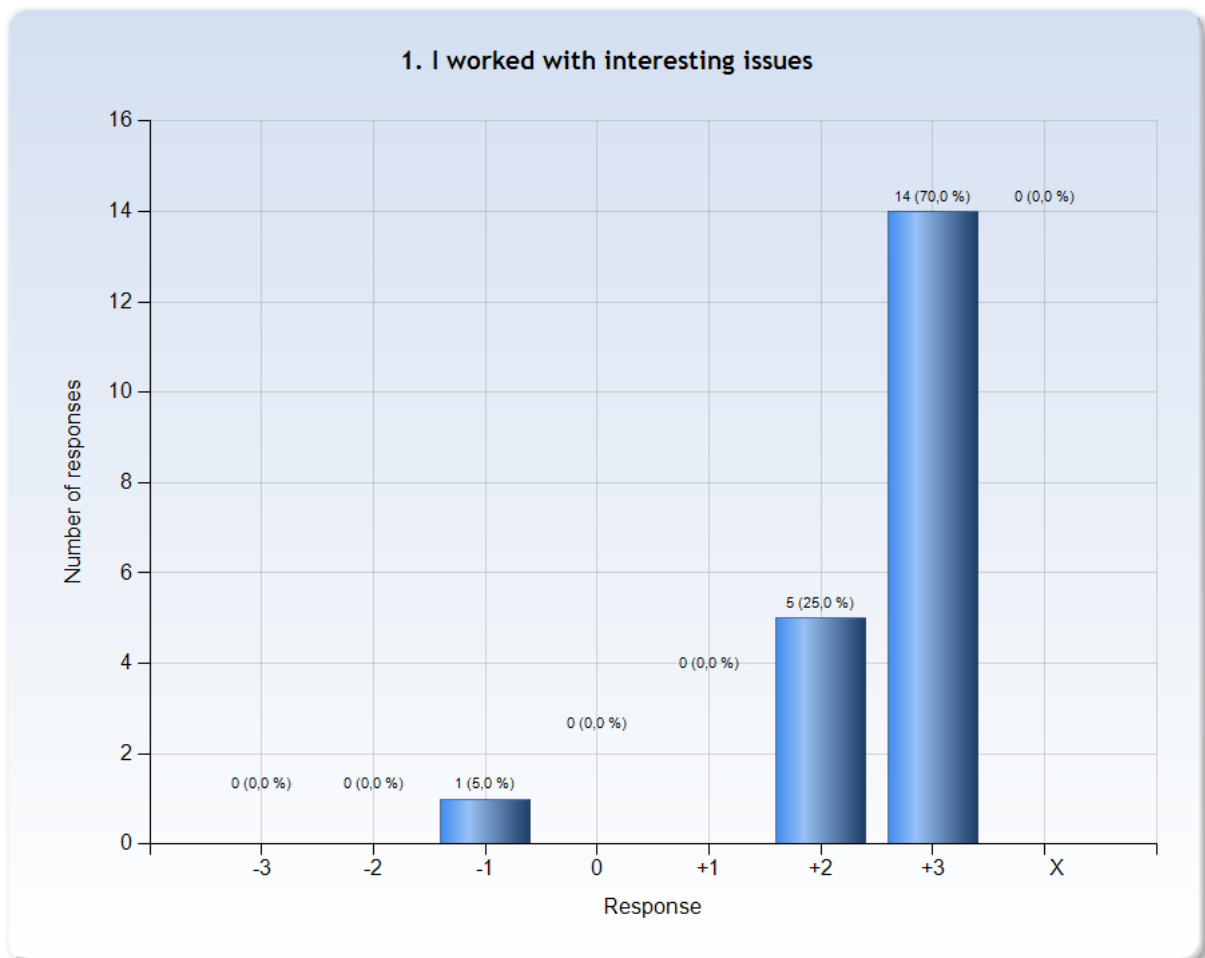
The diagrams below show the detailed response to the LEQ statements. The response scale is defined by:

-3 = No, I strongly disagree with the statement

0 = I am neutral to the statement

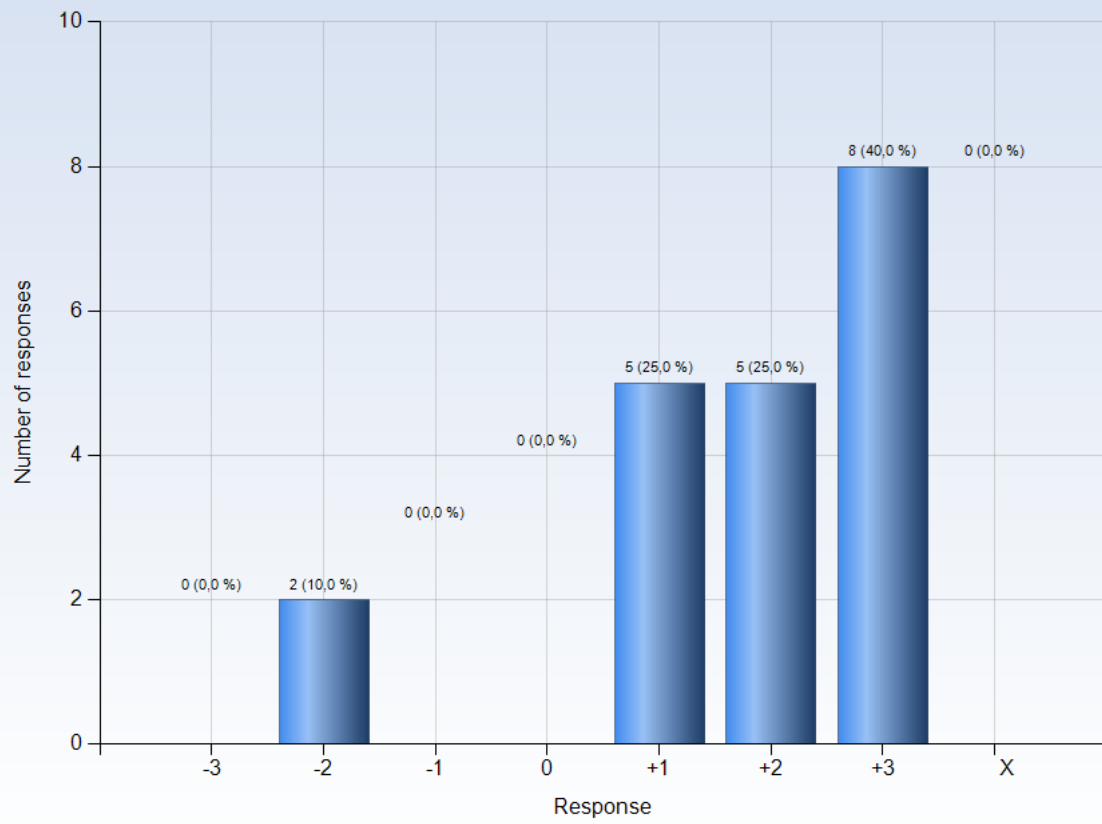
+3 = Yes, I strongly agree with the statement

X = I decline to take a position on the statement



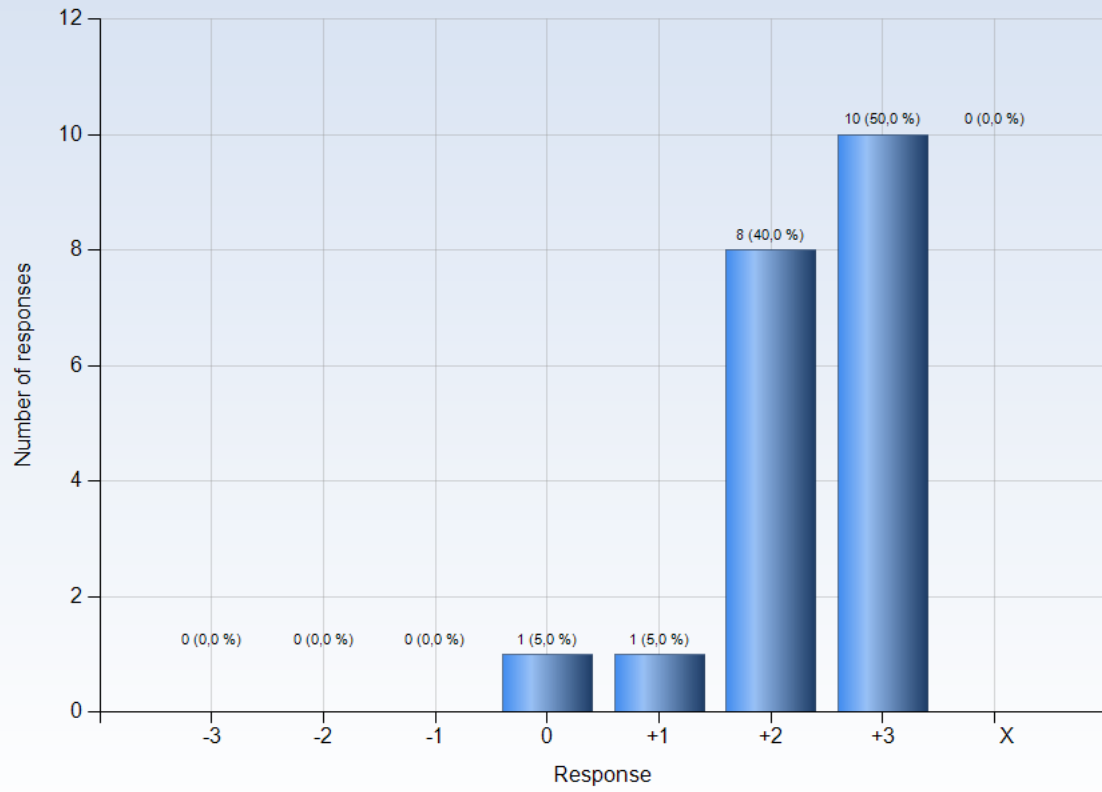
Comments

4. The course was challenging in a stimulating way



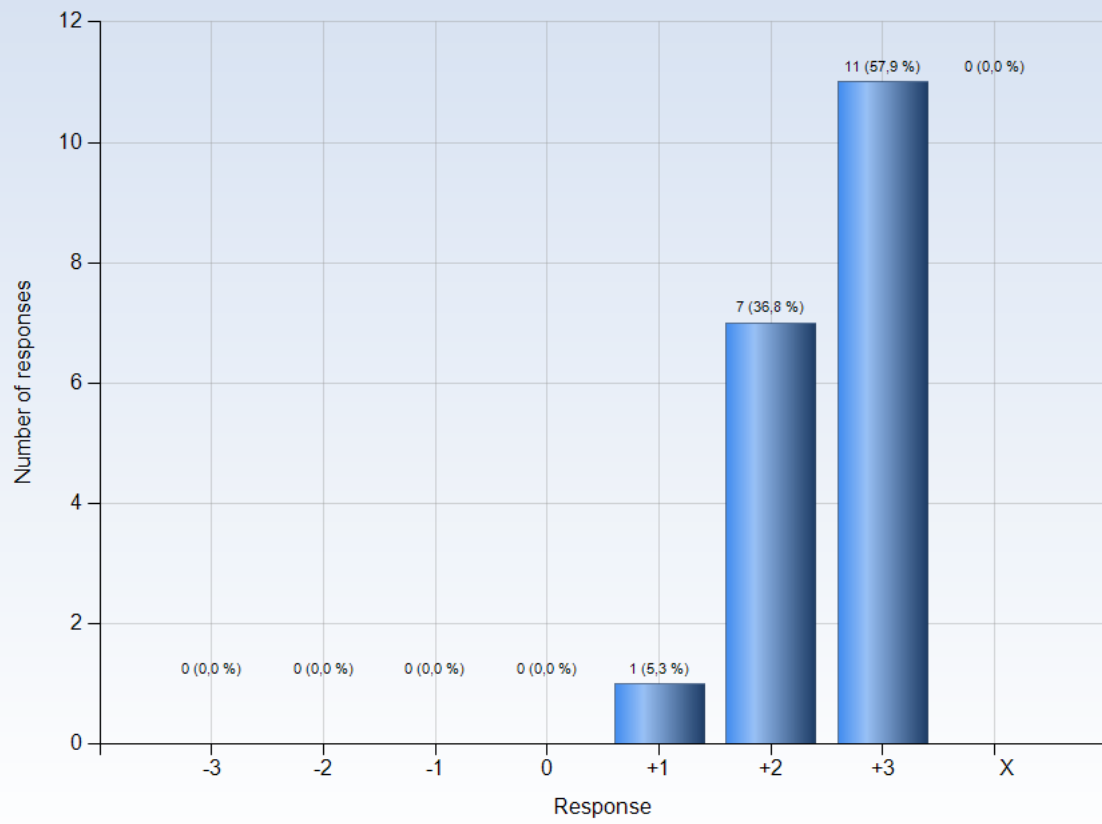
Comments

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



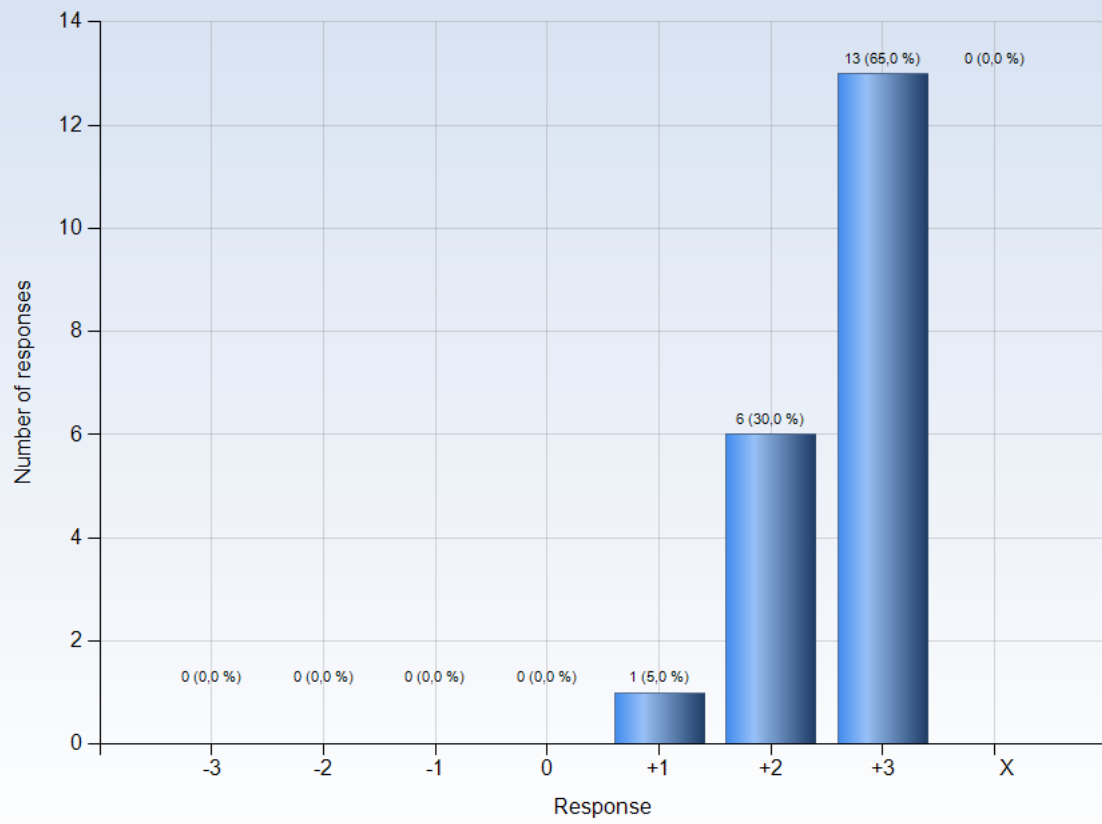
Comments

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



Comments

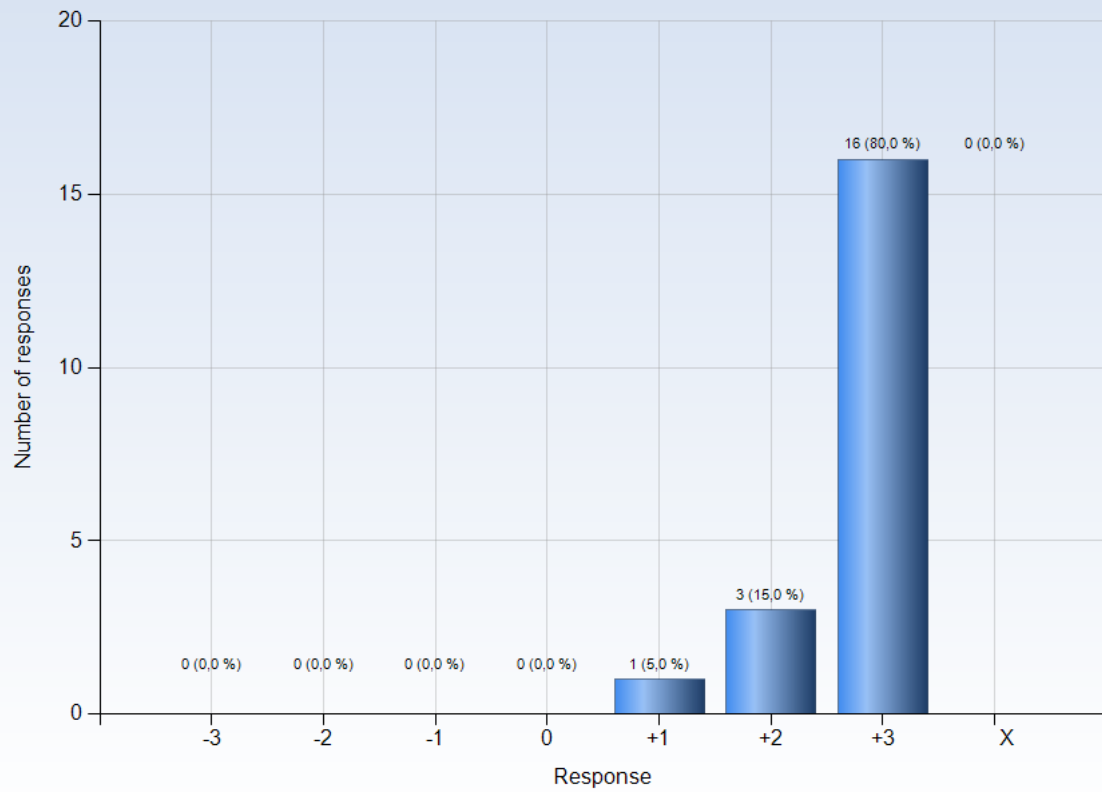
11. Understanding of key concepts had high priority



Comments

Comments (My response was: +3)
Great repetition of main points.

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

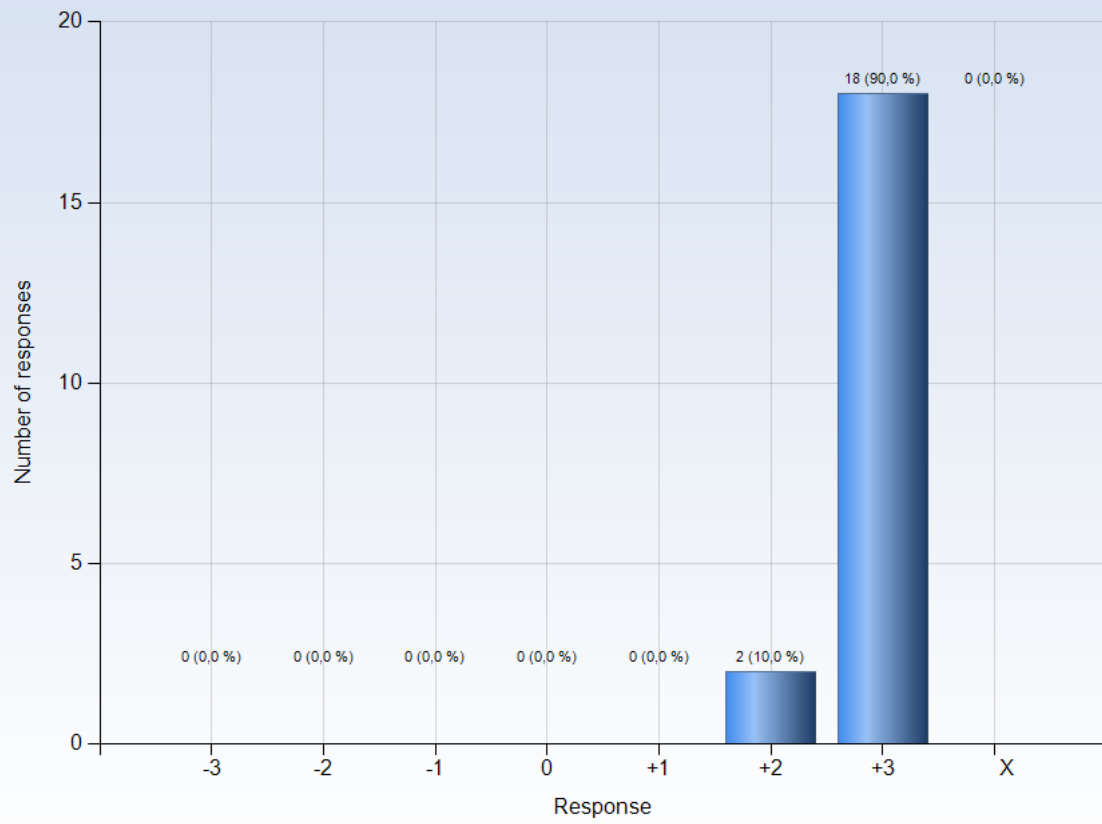


Comments

Comments (My response was: +1)

Maybe some literature research/project would help to delve into it ourselves?

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

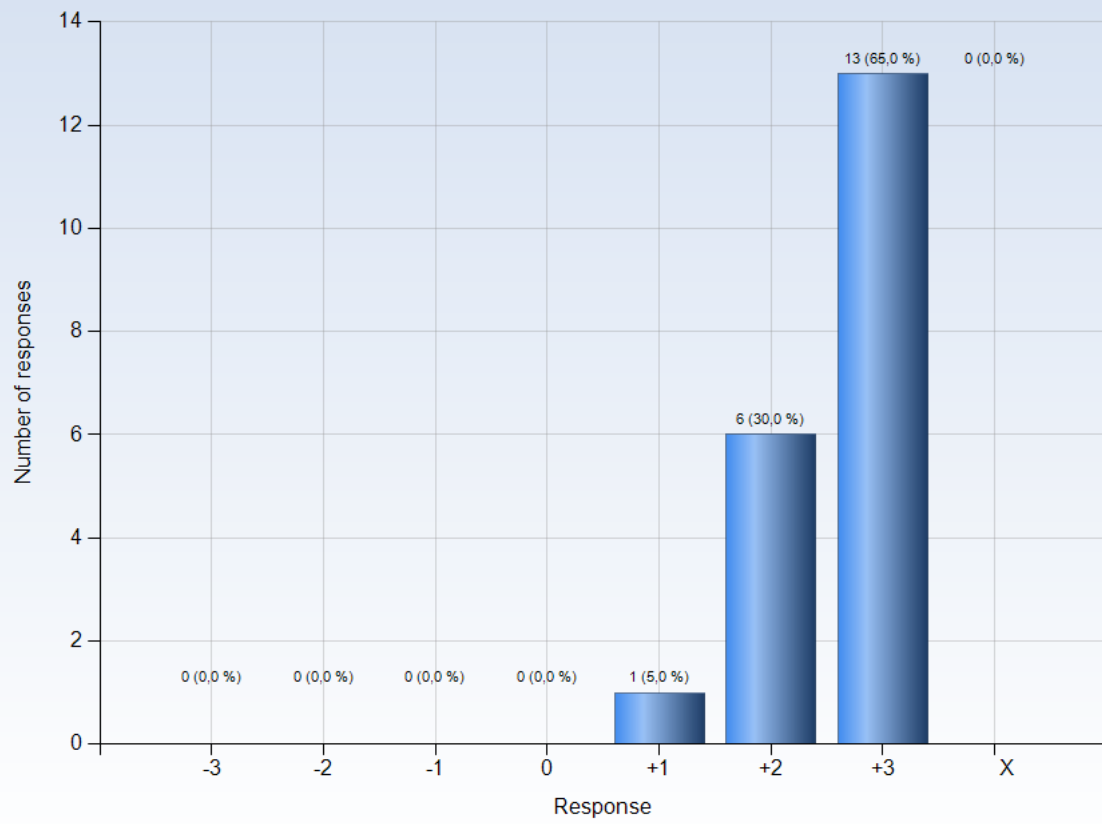


Comments

Comments (My response was: +3)

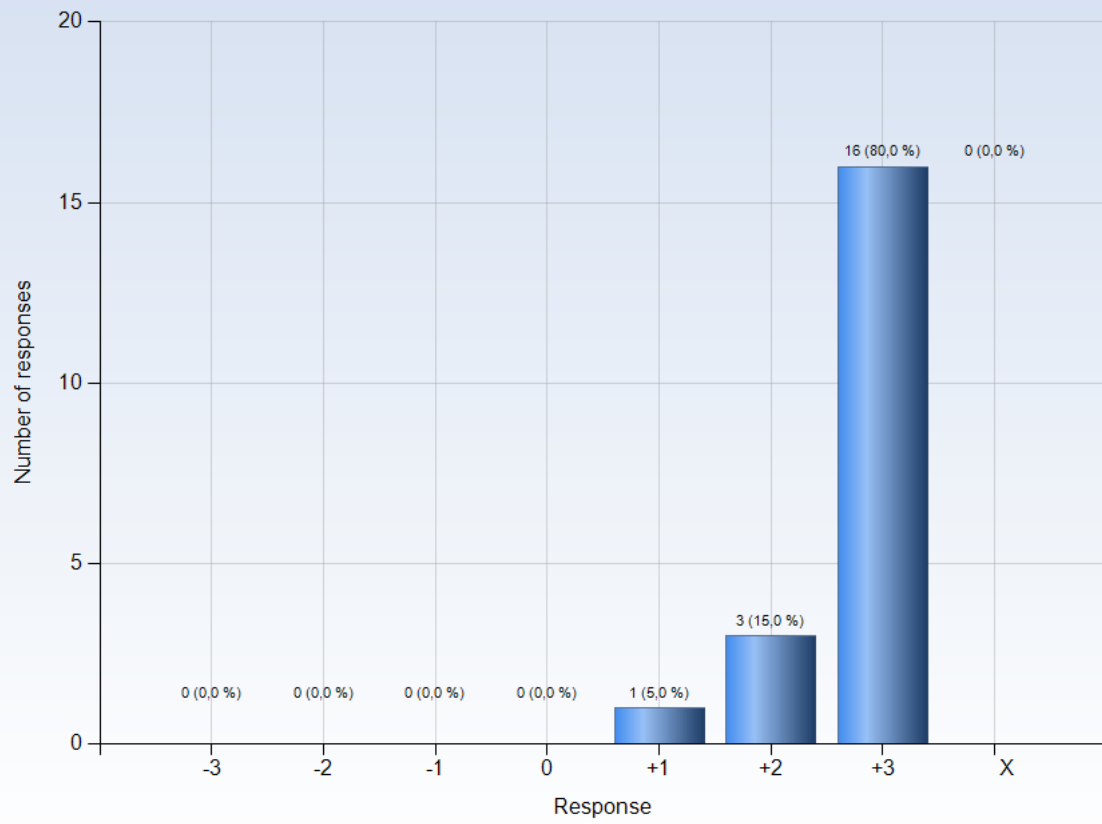
The Mock exams were really helpful to get a picture how the grading during the exams works.

16. The assessment on the course was fair and honest



Comments

17. My background knowledge was sufficient to follow the course

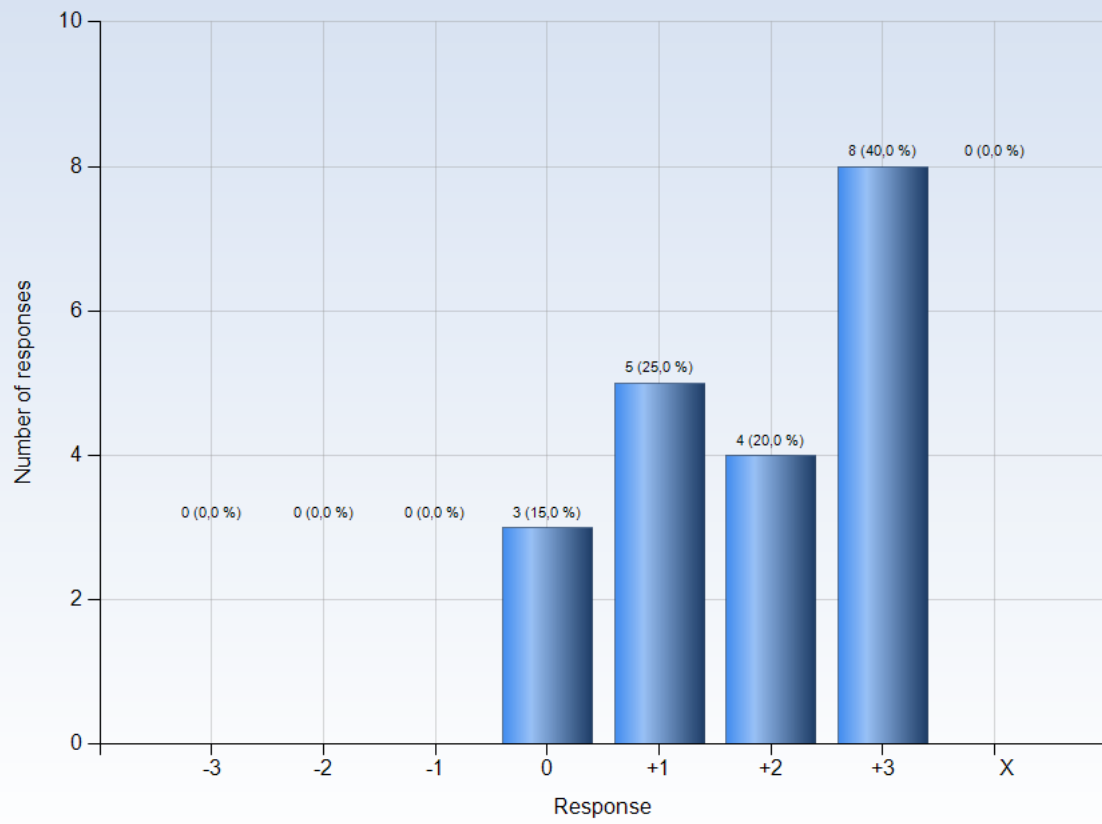


Comments

Comments (My response was: +3)

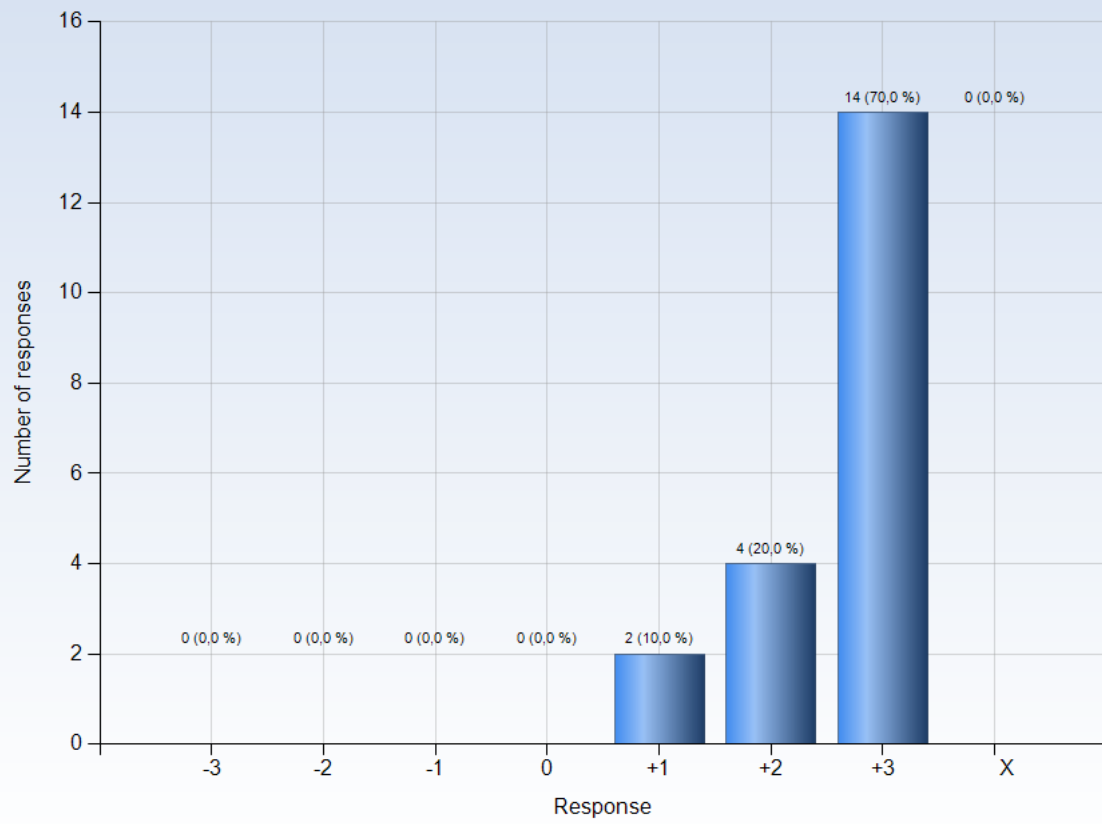
As the course is not very challenging.

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



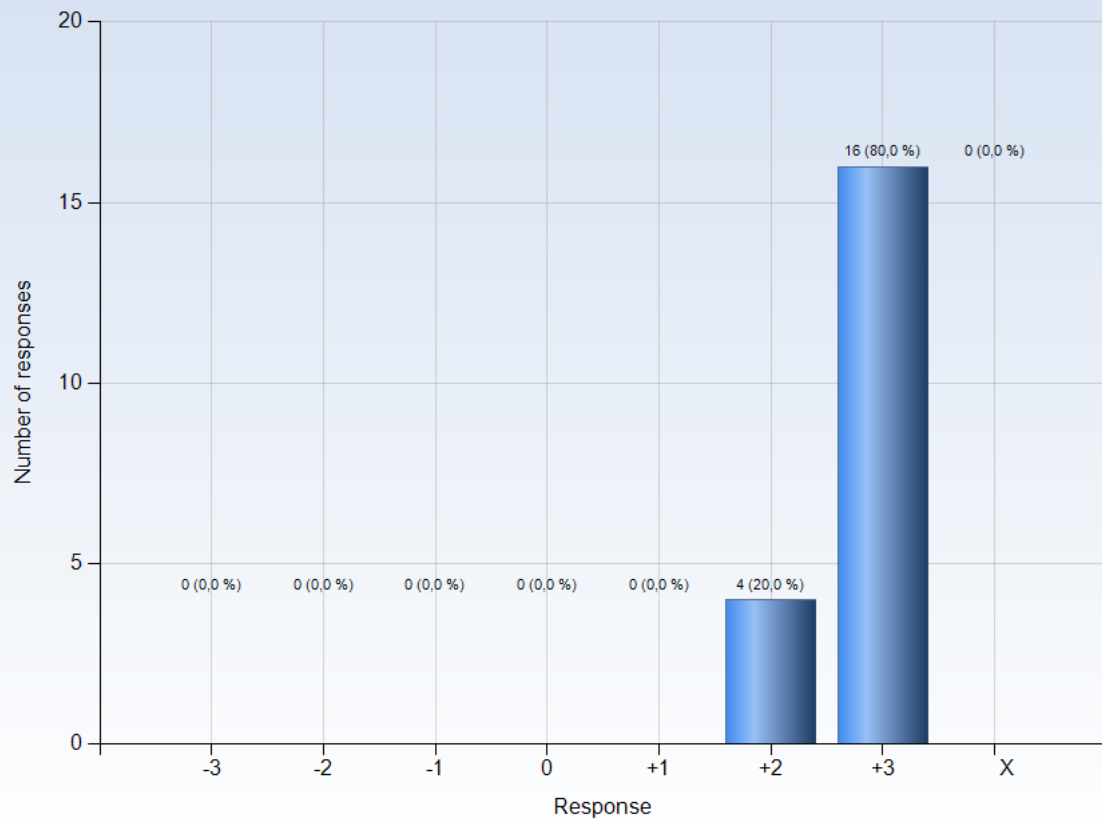
Comments

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: +3)

The teacher was always open for question, also outside the scheduled hours.