

# Course evaluation for Dynamic Problems in Solid Mechanics (SE2134, 7.5 credits, VT2020)

*Artem Kulachenko (Examiner)*

## Background

This was the 9th year I was responsible for the course. The overall structure of the course described in the previous course analyses and course programs was preserved.

## Problems identified during the previous course round and implemented measures

**Problem 1:** Students strive for a better grade according to the survey but give up.

Although a number of students indicated a better grade desired, they did end up having it. There is a clear dissonance between the expectation and what they write below it (see the answers). Collision with our exams was unfortunate this year. Even the students who helped others were affected. The work pressure was large compared to other courses.

### Solution proposed:

We conceive an idea of nominating the “best helpers” in the course. This people will get an extra grade for helping others.

### Solution implemented:

The “hero of the course” award was implemented, a winner was selected between three nominees.

## Other changes made

Due to Covid-19, the seminar was cancelled as it required the intensive group work which would be difficult to manage and overload the students.

## Problems identified during the current round and suggested measures

**Problem 1:** Due to remote teaching, some students felt they were lacking interaction with the teaching team.

**Solution proposed:** Encourage to initiate the dialog, ask question, and book online meeting if necessary. It is still important that the initiative comes from the students on these occasions.

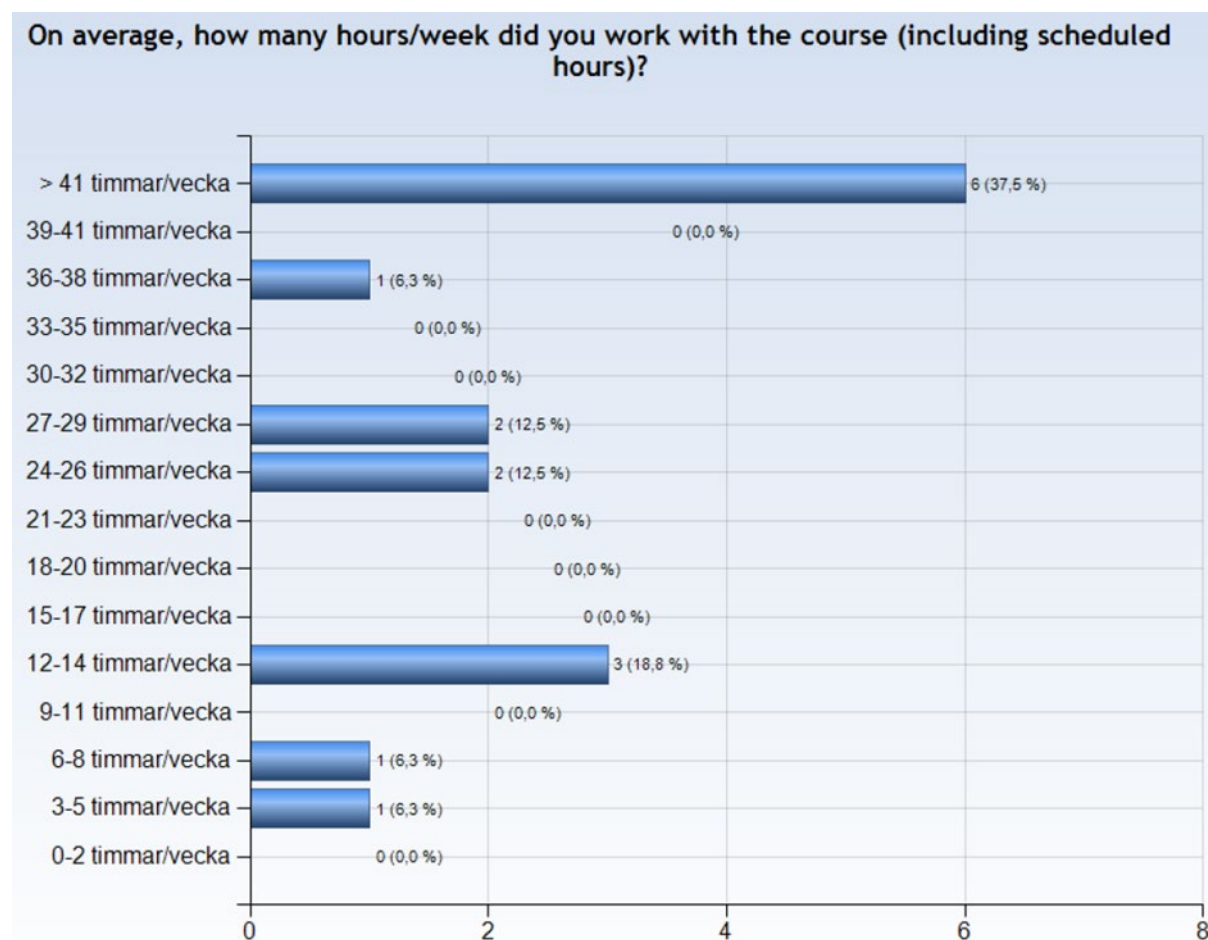
## General observations and comments

Among the received questions, we decide to respond to some to advocate our approach. Both comments are from the same individual.

The work load is much higher than the 7.5 credits the course is worth. On average I would say I spent 50-60 hours a week on the course, at the most it was 70 hours in a week. I don't buy the argument that we can choose how much time we spend on the course based on what grade you are aiming for. The home assignments have a level of difficulty that makes it impossible to just choose to do some of the questions, I felt I needed to (try) to solve them all to be sure to pass at least 6.

Unfortunately, that means my other class became severely neglected as there are just so many hours in a day. Although I really liked this class, the impression is tainted by the unreasonable work load. Especially, when reading the evaluations from previous years and every year people say the same thing. In my opinion there are a systematic error in how this class is carried out. Yes, it is a complex topic and a difficult course which requires time to learn. Nonetheless, at 7.5 credits, it is too much if it is necessary to spend 3 times the credited time (20 hours) per week only to finish the assignments.

It is unfortunate that the course induced so much work. The workload greatly varied among the students and we tried to provide as much help as one need (see comment below).



Att få lära mig ämnet och att jag fick riktigt bra och förklarande svar när jag frågade om hjälp. Att Artem svarade fort på mail var jättebra för då kände man att man kunde få hjälp i tid, annars brukar andra lärare vara dåliga på att svara på mail (inte alla, men många). Att ni markerade det som man skulle svara på i homeworksen med lila, fetstilt text var väldigt bra, det var då tydligt vad man skulle svara på och det gjorde att man inte glömde något.

We will continue encouraging people to seek for help and we will demonstrate this example response as an example. The help inquiries should be addressed to the teacher.

The workload is unreasonable. (see my first comment).

Sometimes it felt very arbitrary how much help you received when asking questions about the home assignments. Sometimes I would get very elaborate answers and sometimes not even a full sentence. This caused much frustration for me as I never felt like I received the same amount of help I probably would get in a face-to-face encounter. Further, sometimes it took way too long to receive help. This year obviously is special with the school being closed and I understand that you also have work to do, but if we have a deadline in 48 hours I think it is unreasonable that I had to wait up towards 32 hours to get an answer to my email as I was stuck on my assignment. And this was during the week, so not even on a weekend (which I could have accepted.).

Everyone should receive the same amount of information. Sometimes I got barely no feedback, and sometimes I was given the correct form of the solution in my personal comments. Meanwhile, my classmate that I had collaborated with, and had the same solution, did not receive that information. That is unfair. If you are giving out the correct form of the solution, i.e. the expression for the stiffness of the structure or something, it should be in the general comments and not in a select few's personal comments. Sure we are allowed to work together, but no one is in contact with everyone in the class.

While giving the feedback, our approach is individualized. Some people require more help than the others and it is natural. The first inquiry is answered promptly, but every subsequent inquiry on the same topic is time-penalized with a growing time interval between the answers. This is meant to: a) encourage people to formulate the inquiries more specifically the first time; b) work on the received feedback before requesting the follow up. In times when we think that the person lacked previous background, we may indeed provide more detailed feedback. We do not think it damages people who made it to the right answer on their own. This kind of achievements is the best reward without giving any grades.

## **Students' responses to course evaluation questionnaire**



## SE2134 - 2020-05-19

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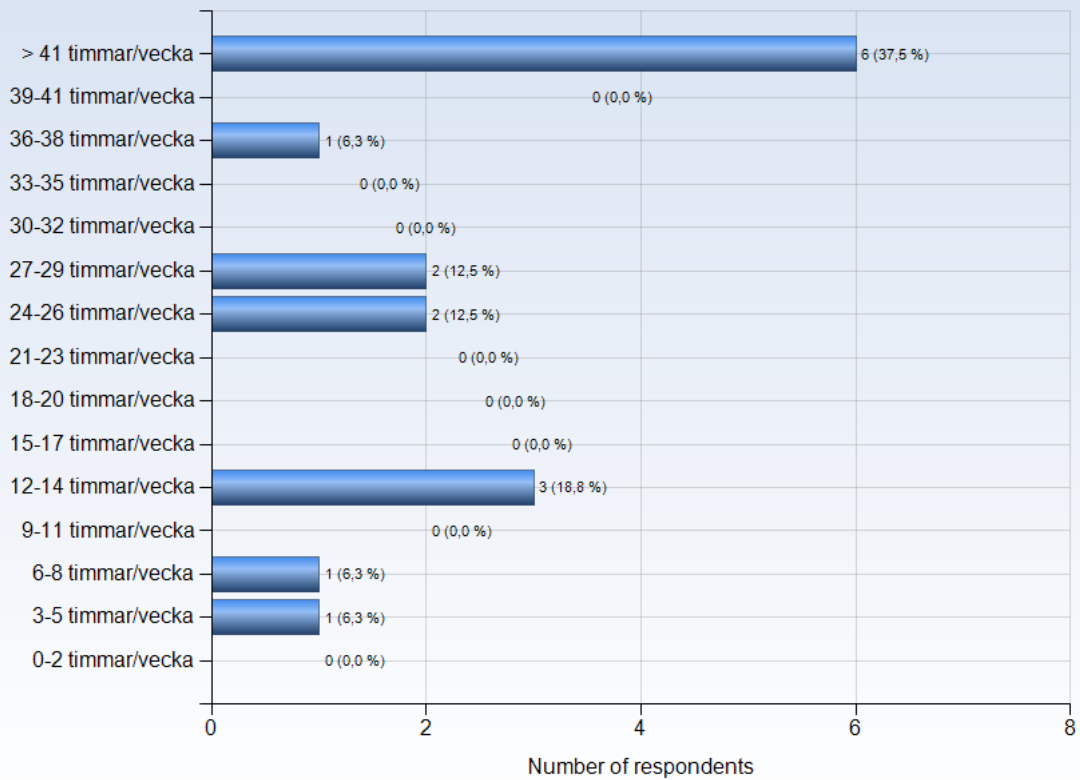
Antal respondenter: 26  
Antal svar: 16  
Svarsfrekvens: 61,54 %

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## 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)

In fact I was just taking the course, and the weeks when we had to return a Homework, I took advantage of the Homework to work much more on the course by having quite complete problems that really allowed me to understand the theory. So I found this Homework(very difficult) +feedback system really interesting.

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

The workload was quite high due to the demanding homeworks

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

Probably put more time in, but overall much of that was not very productive or "actually" spent on work.

Comments (I worked: 24-26 timmar/vecka)

This course was extremely time consuming, it was at times hard to balance it with other the courses that I read in parallell with this. However it was also a very fun course and the time spent was worth it in my opinion.

Approx. 10 hours for lectures and tutorials incl. preparations, the rest spent on home assignments

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

This course is very challenging, interesting and requires a lot of individual work

Comments (I worked: > 41 timmar/vecka)

Workload larger than the credits tell, but it is worth it.

Jag arbetade mer exakt 112 timmar per vecka (16h/dag) för att hinna med lektioner, läsa allt i boken, rekommenderade uppgifter och lösa hemuppgifterna.

I am not completely sure about the number of hours/week that are supposed to be spent working on a course worth 7.5 credits but it is apparent that this course required a lot more work than the other 8 and 9 credit courses that I have taken previously in Solid Mechanics.

The work load is much higher than the 7.5 credits the course is worth. On average I would say I spent 50-60 hours a week on the course, at the most it was 70 hours in a week. I don't buy the argument that we can choose how much time we spend on the course based on what grade you are aiming for. The home assignments have a level of difficulty that makes it impossible to just choose to do some of the questions, I felt I needed to (try) to solve them all to be sure to pass at least 6.

Unfortunately, that means my other class became severely neglected as there are just so many hours in a day. Although I really liked this class, the impression is tainted by the unreasonable work load. Especially, when reading the evaluations from previous years and every year people say the same thing. In my opinion there are a systematic error in how this class is carried out. Yes, it is a complex topic and a difficult course which requires time to learn. Nonetheless, at 7.5 credits, it is too much if it is necessary to spend 3 times the credited time (20 hours) per week only to finish the assignments.

The course takes alot of time, although it takes alot of time you learn alot from during the course.



## LEARNING EXPERIENCE

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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

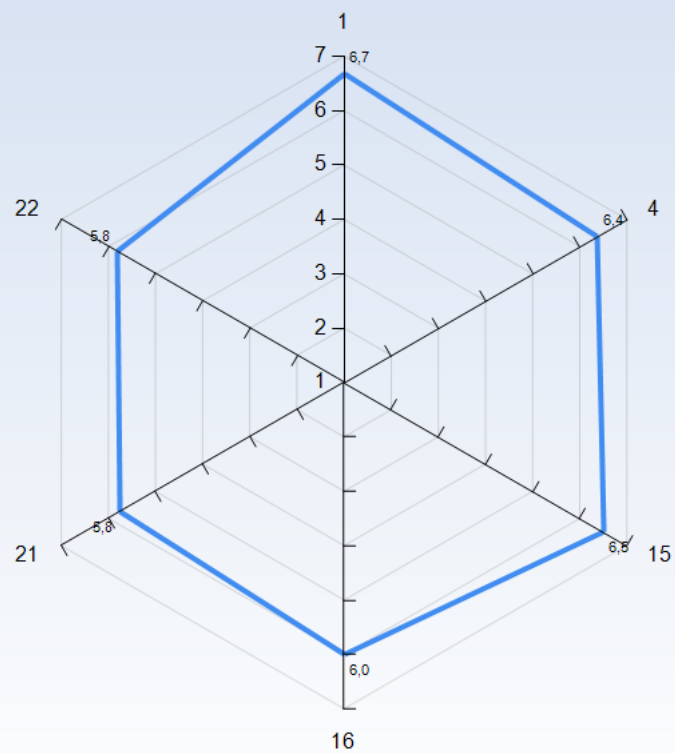
4 = I am neutral to the statement

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.

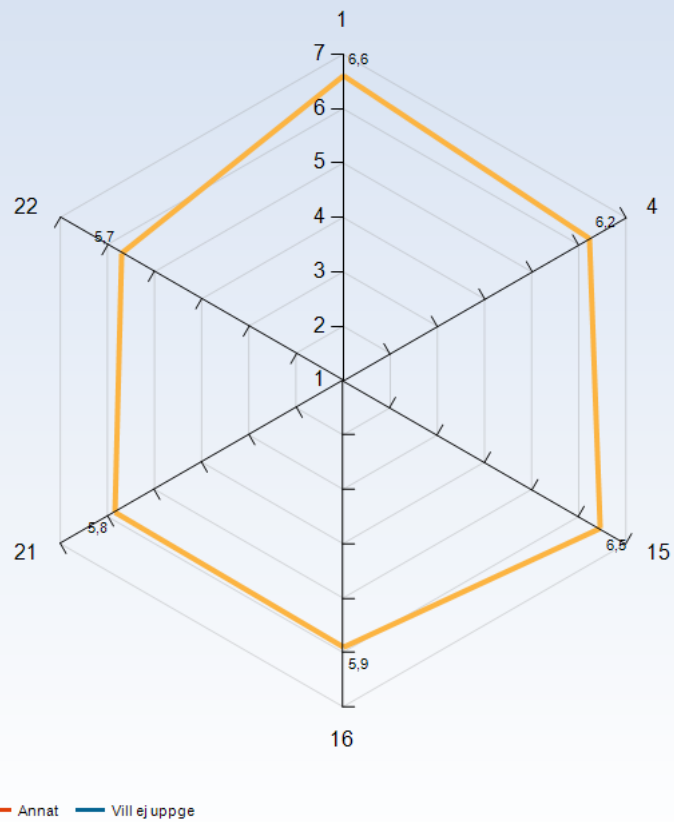
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

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.

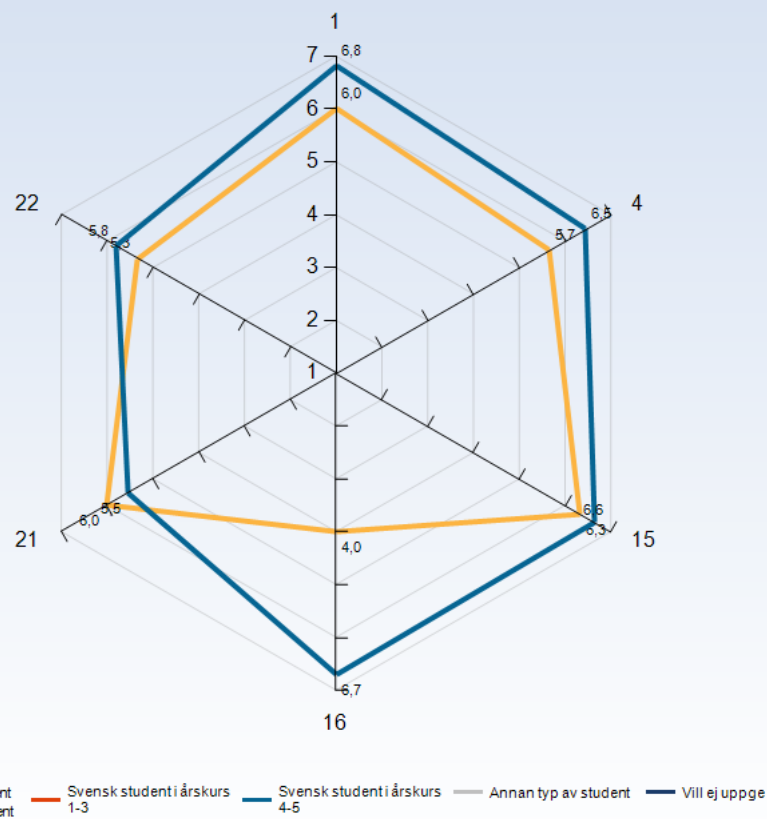
Ramsden, P. (2003). *Learning to Teach in Higher Education*, Chapter 6, pp. 84-105. New York: RoutledgeFalmer.

### Average response to LEQ statements - per gender



Comments

### Average response to LEQ statements - per type of student



### Comments

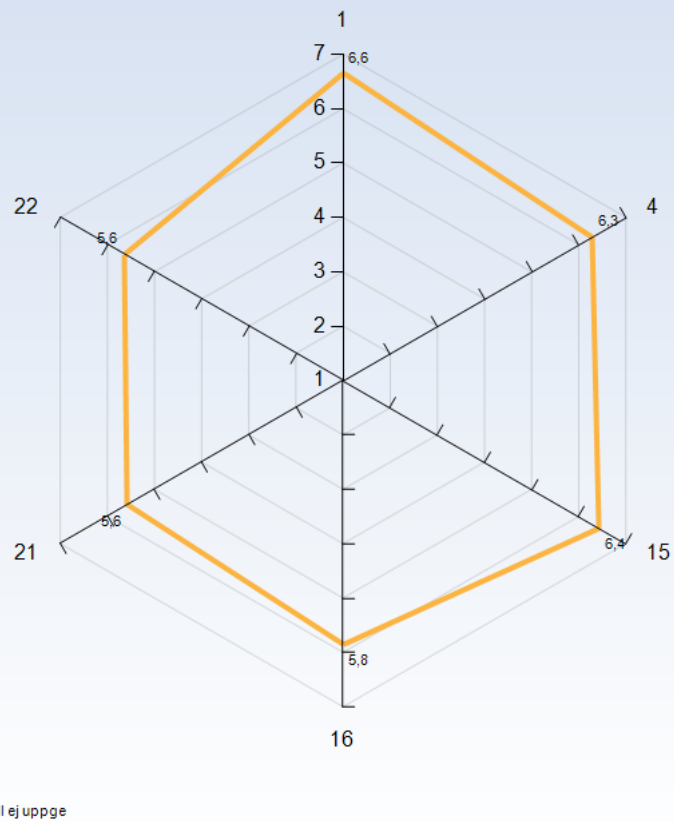
Comments (I am: Internationell utbytesstudent)

"Dynamics of solid – a primer" from Olsson, M., Kulachenko

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

This course was tougher than many other courses that I have encountered. However, I think this is what should be expected from a course in a master's programme in engineering.

### Average response to LEQ statements - per disability



### Comments

Comments (My response was: Ja)

Dyslexia.

I had a hard time reading all the recommended pages each week but I managed to follow along very well by just reading the compendium "Dynamics of Solids"





## GENERAL QUESTIONS

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### What was the best aspect of the course?

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

Homework for sure!

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

The issues addressed were interesting

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

That the homeworks were to be submitted twice, great way to learn och correct mistakes after the comments on the solution

Everything was very well related to real world application.

Overall, I would say that the way the course forces you to think critically and outside the box was the most memorable aspect for me. The homework assignments, in particular, have explored a myriad of interesting and relevant issues, which I found to be very challenging yet rewarding to solve.

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

The best aspect was that we were able to discuss really interesting topics and apply our knowledge to demanding home assignments. This course was perfect from a practical and theoretical standpoint.

Interesting content, good questions in the home assignments, good structure, interesting lab questions, nice addition of bonus content with the facebook group.

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

Being able to validate without attending the exam and the feedback given

Application to real life aspects and problems.

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What was the best aspect of the course? (I worked: 36-38 timmar/vecka)

I would have to say that the lectures, tutorials and the homework assignments were the best part of the course. The computer labs were also interesting. The lectures were very interactive which also incorporated some repetition of material from previous lectures. I really liked Artem's approach to teaching where the aim was to make sure that the students understand concepts. Bugra did a great job explaining the solutions to the problems on the tutorials. The homework assignments were hard but very stimulating. I feel that I got better at problem solving and I liked that the problems had a connection to reality where the answer is either right or wrong. The labs were fun and I enjoyed learning and understanding more about working with FE software.

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What was the best aspect of the course? (I worked: > 41 timmar/vecka)

The course content/subject, teaching, teachers and homeworks.

Att få lära mig ämnet och att jag fick riktigt bra och förklarande svar när jag frågade om hjälp. Att Artem svarade fort på mail var jättebra för då kände man att man kunde få hjälp i tid, annars brukar andra lärare vara dåliga på att svara på mail (inte alla, men många). Att ni markerade det som man skulle svara på i homeworksen med lila, fetstil text var väldigt bra, det var då tydligt vad man skulle svara på och det gjorde att man inte glömde något.

The homeworks were the most useful part of the course since they consisted of relevant, interesting, and challenging questions that helped improve critical thinking and (analytical and numerical) problem solving skills and reinforced theoretical concepts introduced during the lectures. Challenging topics and pushing me outside my comfort zone.

The homework assignments and the interactive lectures. I also like the idea with the facebook group even though I didn't have much time to join the discussion. The Facebook group makes the subject more interesting.

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### What would you suggest to improve?

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

I really think that having the course recorded is a plus because I personally know that certain key phrases of the course and certain details that are said in a certain way allow me to understand, and transcribing it on a sheet of paper does not always allow me to understand when I reread the course.

I know, however, that it could encourage people not to come to the course.

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

The grading method doesn't necessarily reflect the student's understanding/ability

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

One aspect that I would like to improve is that it would be nice to have well documented answers to the problems in the "primer"-book. I think that would help the students understand the different subjects encountered in this course even better.

Reconsider the number of credits in the course. Workload is not proportional.

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

I believe the binary notation is not fair but it has the merit of being challenging.

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

1. I would suggest encouraging the students to use the discussion forums on canvas when asking for help regarding the homework assignments. This way the professor and teaching assistant could answer the questions and all students will be able to receive the same amount of help. Another positive aspect of this would be to decrease the amount of emails the students send with similar questions to either the professor or the teaching assistant.

2. I would also suggest slightly modifying either the difficulty of some of the tasks or decrease the number of tasks. The tasks should still be hard but I would like the workload to decrease. Personally I did not feel that I had enough time to work with example problems before approaching the homework. Getting some practice to understand of some concepts better would have been helpful due to the difficulty of some tasks.

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

Figures in the homework problems, so that it is clearer how it constructed.

Referring to for instance homework 2, question 1. I spent much time, sometimes days solving the wrong problem, since I interpreted the Figure wrong.

The tutorials could improve, with more clear figures during the solution process. Also, when introducing a new solution method, for example the displacement/force method in tutorial 4, would be good with more general information about it. I don't feel like I understand that method and can apply it, and this refers to a few more solution methods introduced during the tutorials. So, some resources could be given so that one could practice this more.

Kursböckerna till kursen innehöll bra information, men jag saknade verkligen en kursbok med uppgifter OCH lösningar+svar. Skulle det ha funnits så skulle jag ha lärt mig minst 50% mer av kursen. När det bara finns svar och ingen lösning så vet man inte vart man gör fel och då är det svårt att lära sig. En lösning på detta problemet skulle kunna vara att du/ni löser ett visst antal uppgifter från Timoshenkoboken och lägger upp på canvas så att man har en möjlighet att få se hur lösningarna ska vara.

1. The individual feedback for the homeworks could be more personalized since it was usually the same as the general feedback. Sometimes, the comments in the general feedback would be too vague to properly understand where mistakes were made in the homework solution so getting them again in the individual feedback did not help any more.

2. A homework problem could be graded leniently if the entire procedure for the solution is correct but a calculation mistake led to an incorrect numerical value for the final result.

The workload is unreasonable. (see my first comment).

Sometimes it felt very arbitrary how much help you received when asking questions about the home assignments. Sometimes I would get very elaborate answers and sometimes not even a full sentence. This caused much frustration for me as I never felt like I received the same amount of help I probably would get in a face-to-face encounter. Further, sometimes it took way too long to receive help. This year obviously is special with the school being closed and I understand that you also have work to do, but if we have a deadline in 48 hours I think it is unreasonable that I had to wait up towards 32 hours to get an answer to my email as I was stuck on my assignment. And this was during the week, so not even on a weekend (which I could have accepted.).

Everyone should receive the same amount of information. Sometimes I got barely no feedback, and sometimes I was given the correct form of the solution in my personal comments. Meanwhile, my classmate that I had collaborated with, and had the same solution, did not receive that information. That is unfair. If you are giving out the correct form of the solution, i.e. the expression for the stiffness of the structure or something, it should be in the general comments and not in a select few's personal comments. Sure we are allowed to work together, but no one is in contact with everyone in the class.

When discussing the feedback from the homework assignments with fellow course mates the feedback quality differed a lot depending on who was correcting the work from my understanding.



### 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)

Homeworks are really worth it.

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

Start the homeworks early as they can be quite long and difficult

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

Start with hws directly. They take alot of time

Do not postpone the homework assignments. They are the most time-consuming part of the course, and solving them successfully was never straightforward. Discuss the solution procedure with your peers and make sure you are on the same page in understanding what is required from the problems.

What advice would you like to give to future participants? (I worked: 24-26 timmar/vecka)

Work hard and continously and always ask questions if something is unclear. I would suggest that future participants should take a less demanding course together with this one because the home assignments consume a lot of time.

This course is a lot more work than the credits imply. I spent multiple workdays on each question in the home assignments. Read the course book before the lectures, cooperate with other students and take help from the people running the course when you get stuck.

What advice would you like to give to future participants? (I worked: 27-29 timmar/vecka)

Give everything on the homework and collaborate with the other students.

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

Attend the lectures, tutorials and read the books.

What advice would you like to give to future participants? (I worked: > 41 timmar/vecka)

Put the effort into the homeworks. It is worth it.

Ask for advice early, especially if is related to just understanding the problem correctly.

Strunta inte i att köpa Timoshenkoboken bara för att den är dyr, fjärrlåna den från något bibliotek i Sverige istället. Införskaffa både Timoshenkoboken OCH substitutboken (av Douglas Thorby), de böckerna kompletterar verkligen varandra.

The course is really difficult, challenging, and time-consuming but it is absolutely worth it because it significantly improves knowledge in the field of structural dynamics (as well as your overall ability to solve problems through critical thinking). It is probably a good idea to take an easier and less demanding course alongside it so that an appropriate amount of time is spent on this course instead (where at least some time is spent every single day working on the homeworks).

Start immediatly with the home assignments, and start writing the report early too. Input as much information as possible, figures, headings etc. as you solve them to save time when the deadline is approaching.

Prepare yourself, for a lot of time studying this course. Maybe considering only taking one easy course in parallel. Ideally this should be your only course as it is so time-consuming.

Don't be afraid to ask questions.



### Is there anything else you would like to add?

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

No

Is there anything else you would like to add? (I worked: 12-14 timmar/vecka)

Tobias Hammer have been a great support for many during this course.

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

Nope

Is there anything else you would like to add? (I worked: 27-29 timmar/vecka)

I would like to nominate Tobias Hammer who have helped me a lot during the course and have shown a great understanding for it's contents.

Is there anything else you would like to add? (I worked: > 41 timmar/vecka)

Through chatting with other students, I became aware of that different students get different hints to the problems from Bugra and Artem, asking the same question.

Sometimes Artem gives much more detailed answer, and sometimes Bugra. So by emailing the right person, could give more or less information.

I think it would be better if it would be more strict, and everyone gets the same information. This is especially referring to hints that involve equations, deformation diagrams and figures.

Det är SUPERBRA med 2 veckor mellan deadline för inlämningarna av homeworksen, vissa kurser har 1 vecka och då hinner man inte göra en lösning som man är nöjd med. 2 veckor är jättebra!

Best course in Solid Mechanics (so far).

I liked the lectures and the lecture style. It kept it interesting.

## SPECIFIC QUESTIONS



### Vilken bok har du använt i kursen?

Vilken bok har du använt i kursen?

Dynamics of solids, Structural dynamics and vibration in practice, and numerous online resources (nptel.ac.in, youtube, pdf from MIT about mode superposition, etc)

Alla 3 böckerna. Bäst förståelse fick jag av boken av Douglas Thorby, men den innehöll inte allt som Timoshenko innehöll, så därför behöve jag införskaffa båda. Timoshenko innehöll inte heller allt som Douglas Thorby innehöll, så de båda tillsammans har varit till stor hjälp.

"Dynamics of solids - A primer" and the recommended Timoshenko book.

1. Olsson, M. & Kulachenko, A. (2014). "Dynamics of solids: A primer."
2. Thorby, D. (2008). "Structural dynamics and vibration in practice."
3. Sundström, B. (2010). "Handbook of solid mechanics."

The Dynamics of Solids compendium and the Timoshenko book.

The compendium was okay, it worked as a nice introduction to each topic. On its own I think it is too brief though.

I really liked Timoshenko's Vibration Problems in Engineering. At first it was difficult to understand as it is very technical, but as time went on I liked it more and more. Very helpful to get deeper coverage of the topics and helpful for several of the home assignments. I would recommend it to future students, but do the research online and find a cheap copy. I bought mine online for about 400 SEK but I don't think it is worth the paying the full price of 1800 SEK.

Snippets from the Timoshenko book and the primer.

All recommended books

I used the "primer" book and the PDF version of "Structural dynamics and vibrations in practice". Unfortunately, the Timoshenko book was way too expensive.

Olsson, M., Kulachenko, A. "Dynamics of solid – a primer"  
Solid Mechanics Handbook

Timoshenko, S., Young, D., Weaver, W., "Vibration Problems in Engineering"

Timoshenko and the compendium

Compendium

Course book, solid mechanics handbook, Formler och tabeller för mekanisk konstruktion

## RESPONSE DATA

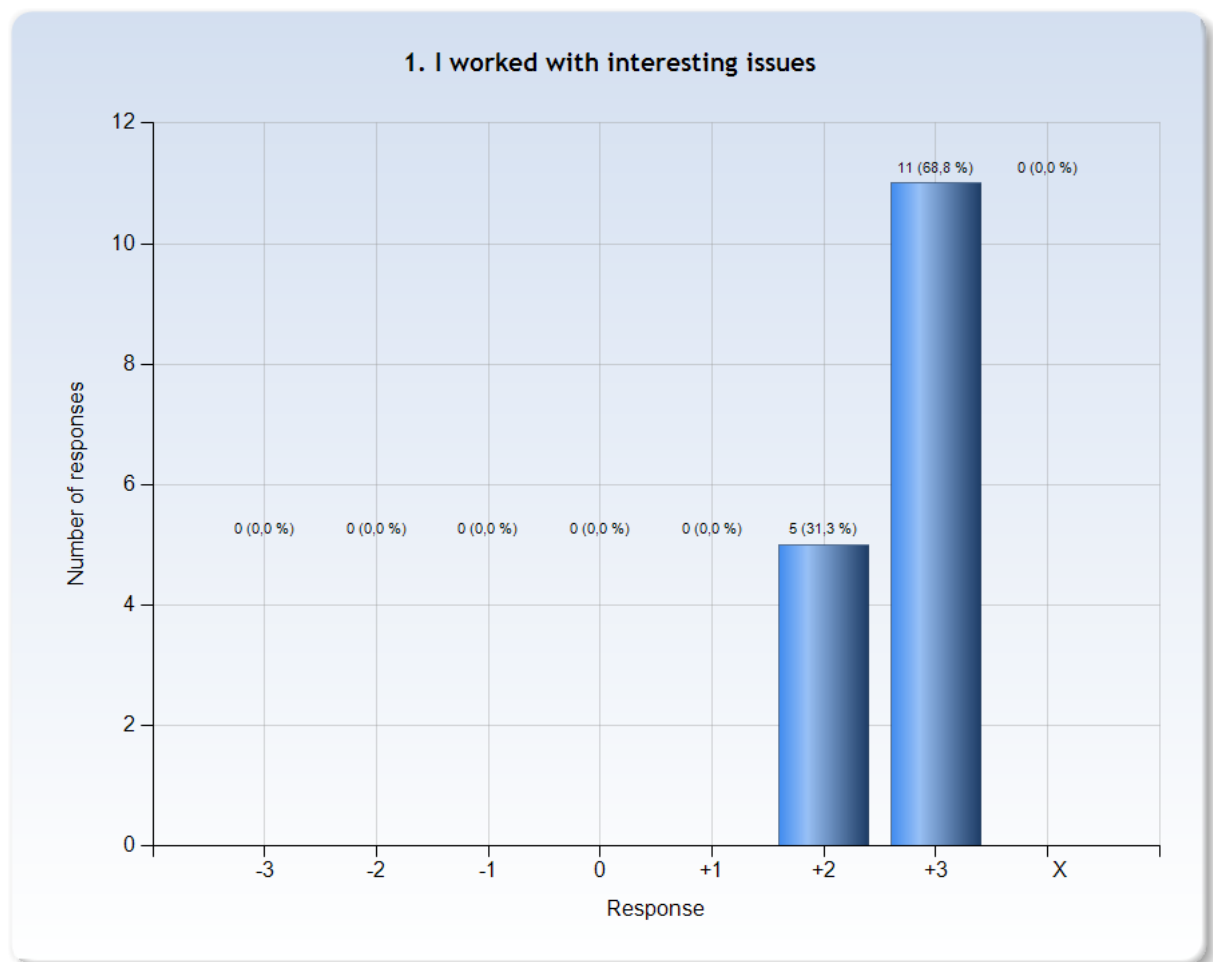
The diagrams below show the detailed response to the LEQ statements. The response scale is defined by:

-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

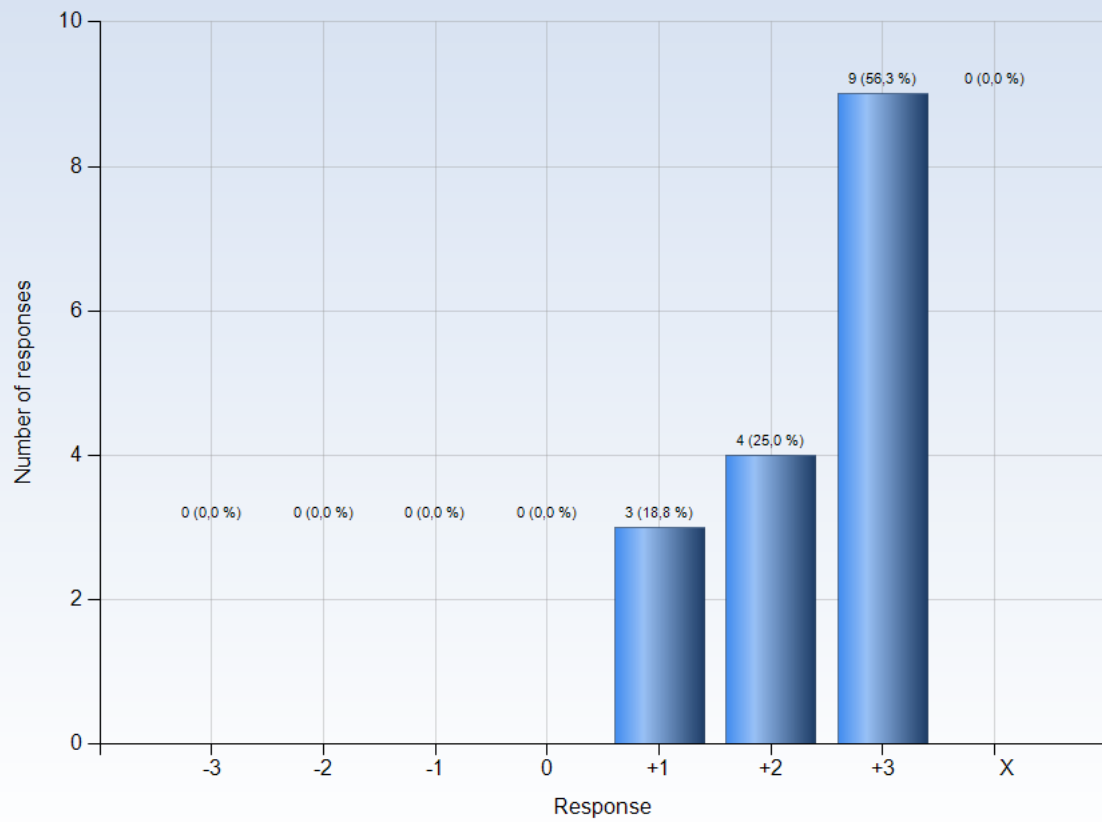


### Comments

Comments (My response was: +3)

Very interesting topics are discussed.

#### 4. The course was challenging in a stimulating way



#### Comments

Comments (My response was: +2)

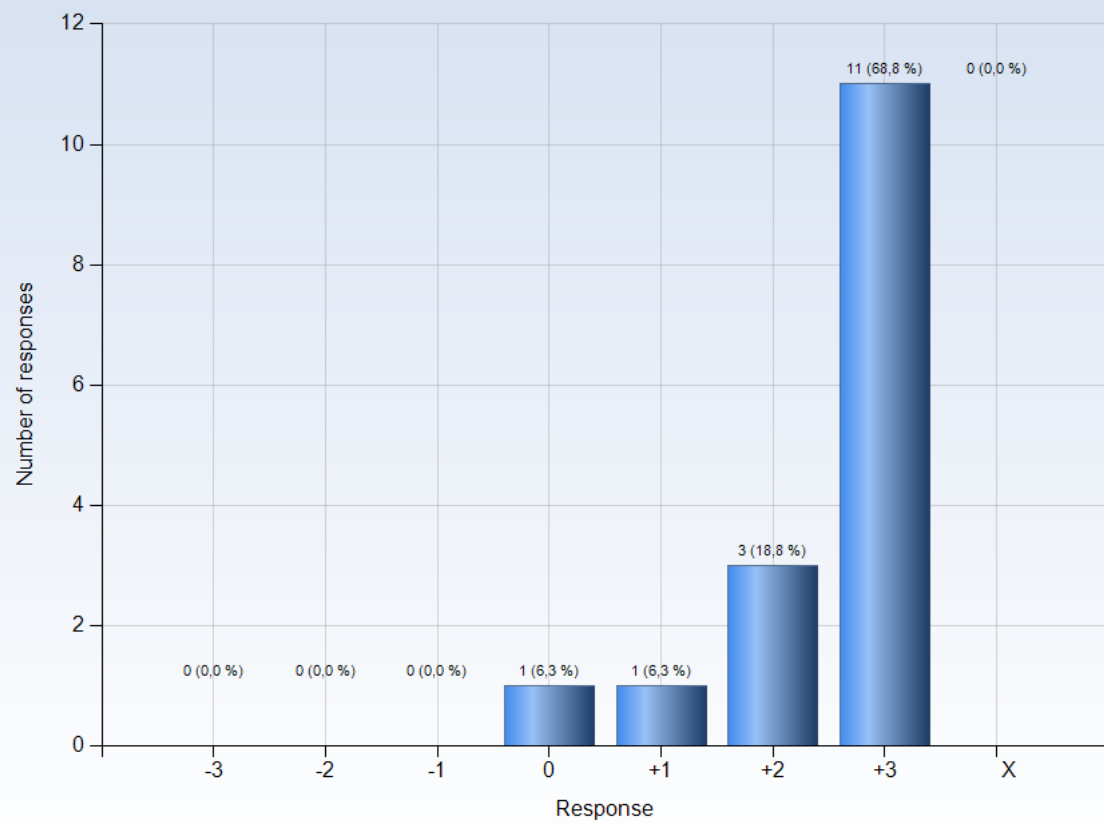
Not enough time to do example problems in the books

Comments (My response was: +3)

Men jag hade inte tid för övriga kurser som jag samtidigt hade

I felt that I had to rethink how I approach problems, which was very difficult in the beginning but I really believe I learnt a lot from that.

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



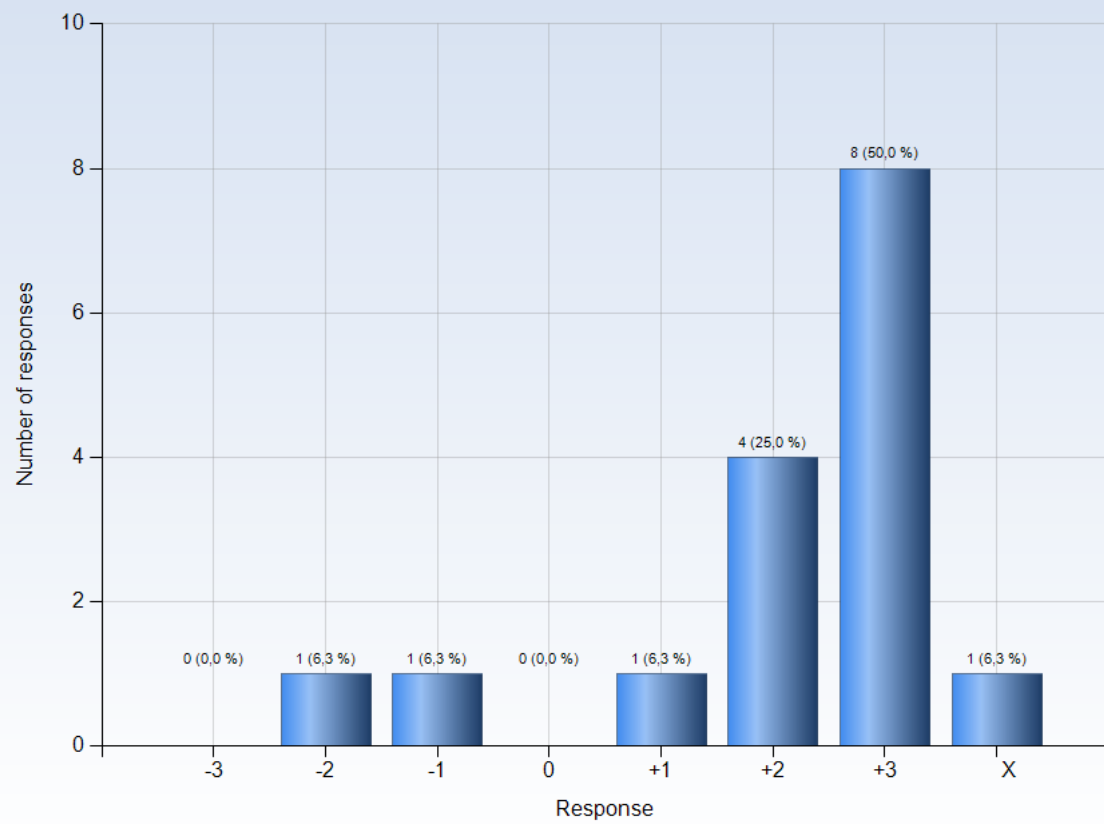
Comments

Comments (My response was: +3)

First submission of assignments were good.



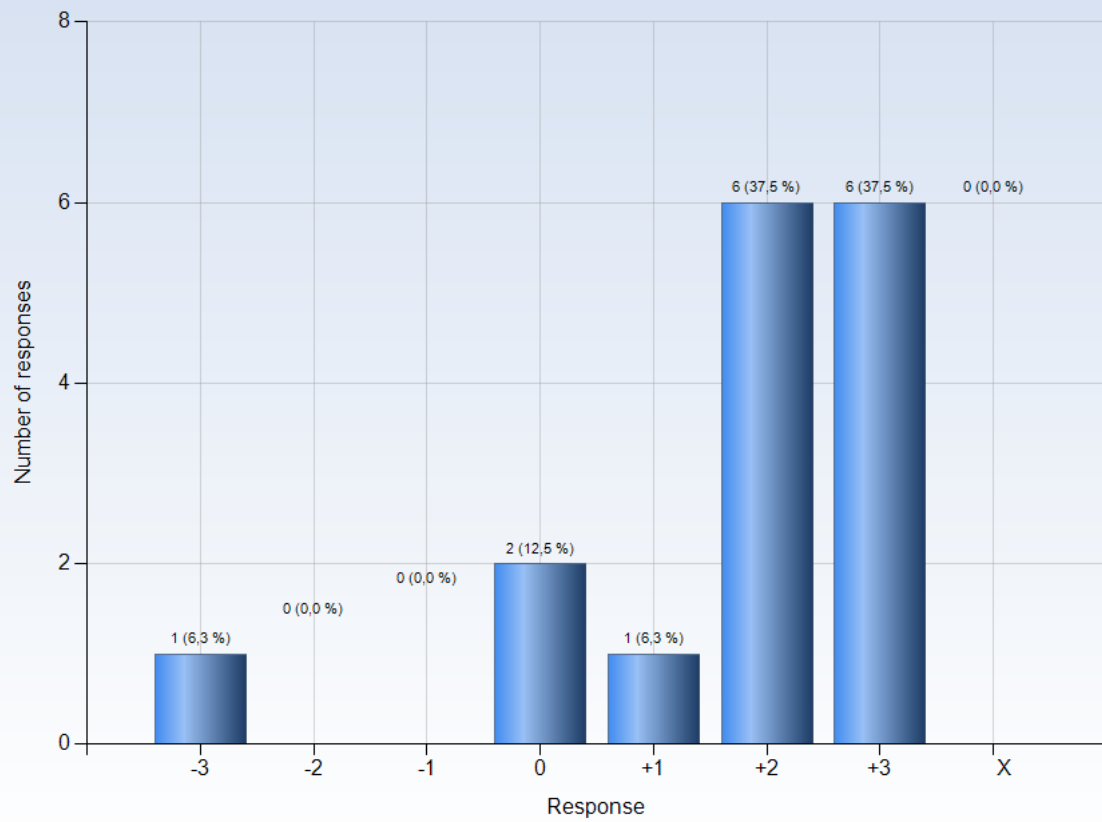
### 16. The assessment on the course was fair and honest



#### Comments

Comments (My response was: +3)  
Svar avser rättningen av homeworks

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



### Comments

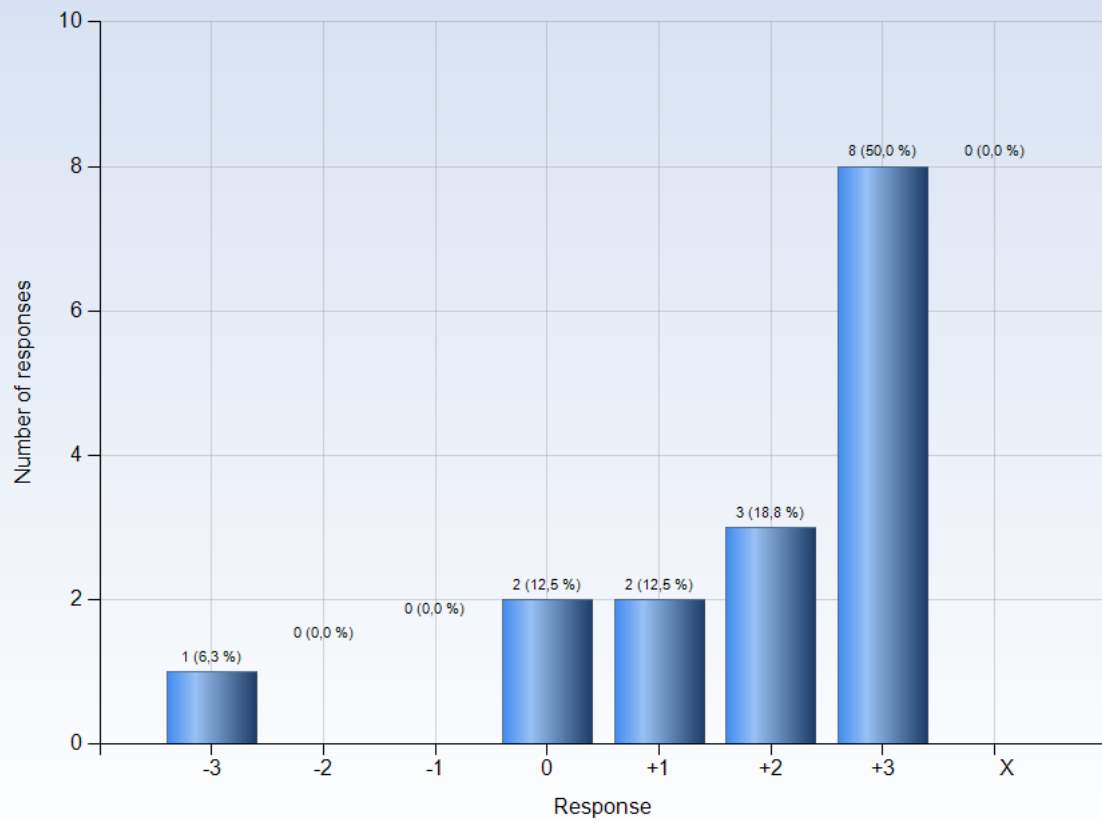
Comments (My response was: 0)

Jag valde frivilligt att inte samarbeta med någon

Comments (My response was: +2)

Difficult due to the extreme circumstances

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



### Comments

Comments (My response was: +2)

Receiving and asking for help through email did not work that well in my opinion. I would have liked to have the option to have a Q&A session in zoom sometimes.