Course Analysis for Linear Algebra 1 (MATA22, ÄMAD01) Autumn 2021

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Number of students: The course is given jointly for students enrolled in the Bachelor's Programme at the Faculty of Science (course code MATA22) and for students enrolled in the Teacher Education Programme (course code ÄMAD01).

There were 76 first-time registered students and 13 re-registered students on the course code MATA22 as well as 28 registered students and 4 re-registered students on the course code ÄMAD01.

Examination

The written examination (6 credits) is given jointly for all students enrolled on both course codes. A project consisting of several group and individual assignments is part of the examination on MATA22.

Course code MATA22:

   74 students participated in the ordinary written examination (6 credits) and 46 of them passed.

   25 students participated in the resit examination and 12 passed.

   74 students completed all the assignments included in the project work, 1.5 credits.

   55 of students (of which 1 re-registered) have passed all examination parts, 23 of them with the grade *pass with distinction*.

Course code ÄMAD01:

   23 students participated in the ordinary written examination (6 credits) and 6 of them passed.

   13 students participated in the resit examination and 2 passed.

Course evaluation

Summary of students answers: 38 students including 10 students enrolled in the teachers education programme answered the course evaluation questionnaire that was open during four weeks, from the ordinary written examination until the day after the resit examination. A preliminary report of the results of the questionnaire was presented to the students in connection to the ordinary exam-viewing meeting. The students answers are summarized in the following pages. The majority of the students seem to be satisfied with the course in general (contents, teaching, organisation and assessment).

Certain issues were raised by the students enrolled in the teachers education programme, which will be addressed below.

Teacher's comments: The group of students admitted to the Bachelor's programme in both mathematics and physics was slightly smaller compared to the previous autumn semester. This is owing to the department's efforts to align the number of registered students to the reduced number of study places allocated by the Faculty of Science. On the other hand, the group of students admitted to the course ÄMAD01 within the Teacher Education Programme has increased considerably in comparison to the previous year.

Owing to the ongoing pandemic situation, the course was given in a mixed format both on campus, for smaller groups of students, and at the same time online for the rest of the student population. Before the course started, the students have been asked to inform us about their preference regarding on-campus versus online participation. Based on their answers, they have been invited to opt for one of three groups, one group following the teaching activities online while the others attending the lectures on campus on a rotating schedule. The lectures have been held on campus for a group consisting of maximum 49 students and streamed via Zoom for the rest of the student group. The seminars, usually conducted on campus in several smaller groups of students, have been entirely given online due to the restrictions enforced to prevent the spread of the Corona virus. The seminars were conducted in parallel sessions, one in English and one in Swedish, where the latter was primarily for the teacher students so that they learn both the English and the Swedish terminology. Other teaching activities such as online exercise classes and SI-meetings have been held mainly online, with some exceptions for small groups on students on campus.

As in the previous autumn semesters, half of the mathematics students and all physics students enrolled have been admitted in the international admission round, and thus the students' background and previous knowledge of the subject is still quite heterogeneous. Many of the international students have studied parts of Linear algebra in high-school while only a few of the national students have a background in the subject since it is not included in the Swedish national curriculum. This is somewhat reflected in the distribution of the students' answers to the question My prior knowledge has been sufficient to assimilate the contents of this course"in the evaluation questionnaire (mean 3.8, standard deviation 1.4) and also by the distribution of the answers to some of the questions regarding the workload, the level of difficulty of the exercises and assignments and the overall satisfaction with the course.

Students with a more thorough background have expressed the wish for more in depth discussions while other students perceived the stringent formal mathematical language and emphasis on proofs in the lectures and lecture notes harder to follow. What stood out in this course realisation was the big discrepancy in both expectation and results between the students enrolled in the teacher education programme and the rest of the student population. One issue that has been raised by the teacher students was the fact that the language of instruction for the lectures was English, which was pointed out as one of the main reasons for which the lectures were perceived as hard to understand. Some comments in the survey indicate that the some students weren't aware of this fact when they applied for the Teacher Education Programme and found it even discriminatory that we assume a certain level of knowledge in the English language. Of course, the information regarding the fact that the mathematics sub-courses included in the teacher education programme are taught in English has been publicly available, but it must be made even more clear and harder to overlook since this seems to be a issue for some students. We strongly believe in the benefits of a joint education for the Bachelor's and teacher students and our courses aim to provide an international environment that should be highly beneficial for future teacher students. We always attempt to tailor the teaching activities to support the needs of the entire student group, but clearly the teacher students need extra support to achieve the desired academic performance level.

The participation on the campus lectures has decreased during the course, as more students seemed

to feel more safe studying from home. At the same time, the students who preferred to attend the teaching activities on campus were appreciative of the interaction with teachers and other students. One aspect that the students enrolled in MATA22 brought up was the group assignments, which the majority found rewarding and valuable for their learning.

The two written examinations in October and November have been on campus and special arrangements and measures were taken to conduct these safely. The examination results for the students enrolled in MATA22 have improved compared to the previous autumn semester, while the opposite is true for the teacher students. Many students brought up the negative impact that the ongoing pandemic situation have had on their learning and motivation. As before, the most problematic aspect related to the online teaching format is that it does not provide a natural space for new students to interact with each other. As interaction and the ability to communicate the subject orally is vital for the students enrolled in the teacher education programme, this student group was perhaps more negatively affected by the pandemic.

Changes from the previous course realisation: In the previous course evaluation it was suggested to try to improve the organisation of the teaching activities held both online and on campus and to provide a better platform for student interaction. The lectures this semester have been organised a bit differently to made the information transfer more efficient and encourage student involvement. The course material has also been expanded according to the suggestions from the previous course.

Suggestions for the next course realisation: The main issue that needs to be addressed is the discrepancy between the different student groups and their need of support and further stimulation. This should be discussed in a more general setting taking into account the structures of the two programmes.

Linear Algebra 1, Autumn 2021

Answer Count: 38

I have studied this course as part of

| I have studied this course as part of	Number of responses
Bachelor´s Programme in Mathematics	20 (52.6%)
Bachelor´s Programme in Physics, Theoretical Physics, Astronomy	7 (18.4%)
Bachelor´s Programme, other specialization	1 (2.6%)
Teacher Education Programme	10 (26.3%)
Free-standing Course	0 (0.0%)
Total	38 (100.0%)
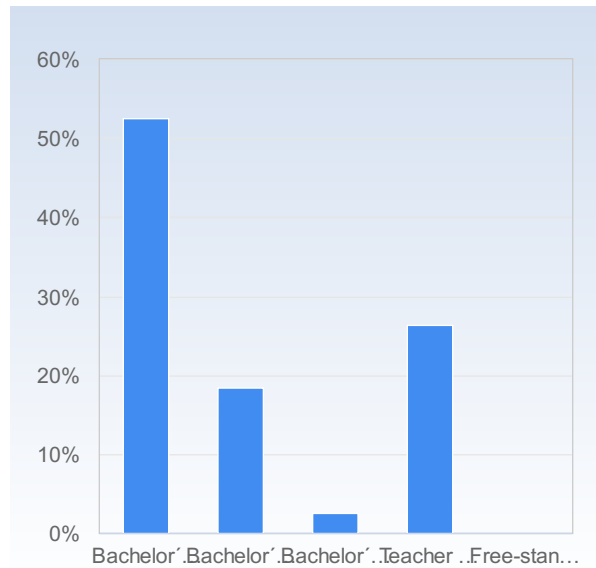
	Mean	Standard Deviation
I have studied this course as part of	2.8	2.6

On the scale 1-5 select the option that best matches your opinion: 1= disagree completely → 3= partly agree → 5= agree completely

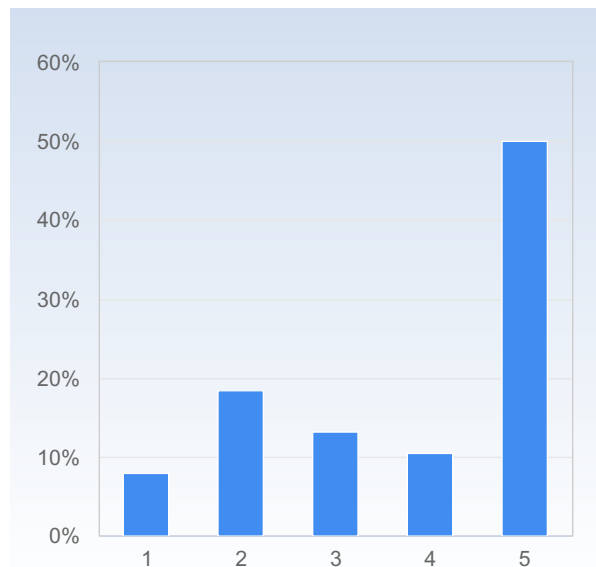## I had studied Linear Algebra and Geometry prior to this course.

I had studied Linear Algebra and Geometry prior to this course.	Number of responses
1	5 (13.2%)
2	7 (18.4%)
3	6 (15.8%)
4	7 (18.4%)
5	13 (34.2%)
Total	38 (100.0%)
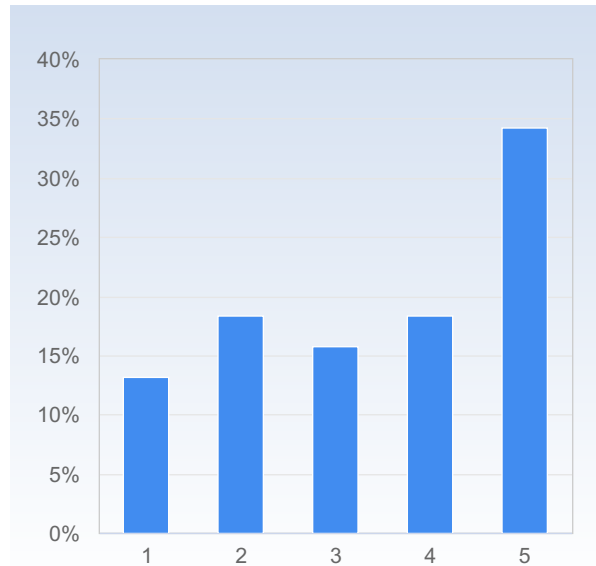
	Mean	Standard Deviation
I had studied Linear Algebra and Geometry prior to this course.	3.4	1.5

My prior knowledge has been sufficient to assimilate the contents of this course.

My prior knowledge has been sufficient to assimilate the contents of this course.	Number of responses
1	3 (7.9%)
2	7 (18.4%)
3	5 (13.2%)
4	4 (10.5%)
5	19 (50.0%)
Total	38 (100.0%)

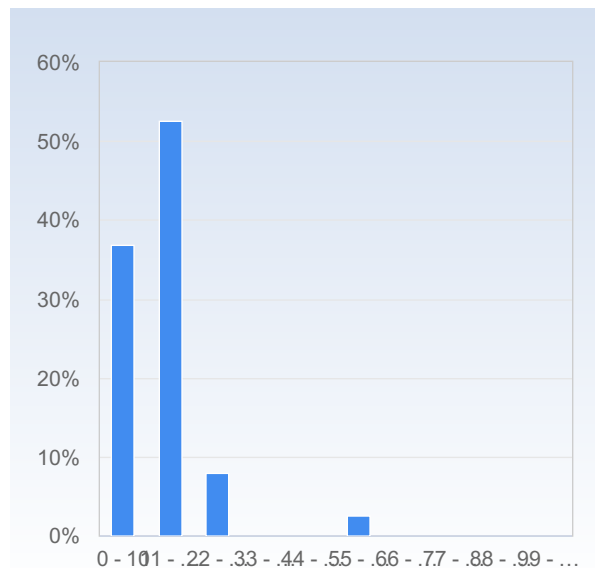|	Mean	Standard Deviation
My prior knowledge has been sufficient to assimilate the contents of this course.	3.8	1.4

I have participated actively in the course.

I have participated actively in the course.	Number of responses
1	1 (2.7%)
2	4 (10.8%)
3	3 (8.1%)
4	7 (18.9%)
5	22 (59.5%)
Total	37 (100.0%)
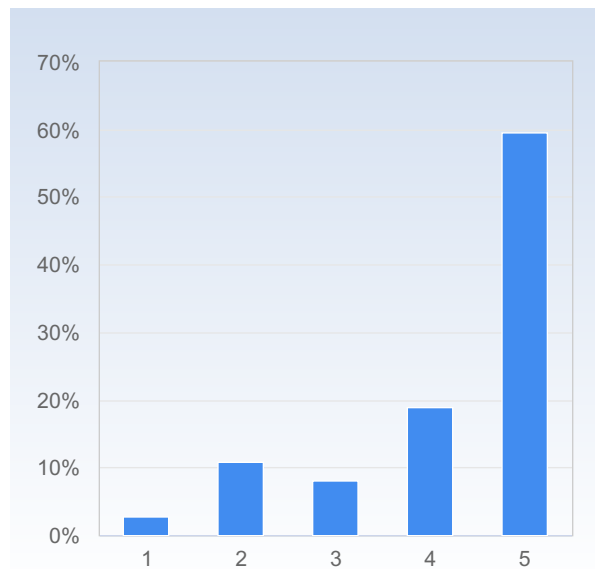
	Mean	Standard Deviation
I have participated actively in the course.	4.2	1.2

Average number of hours spent in total on the course per week (including scheduled activities):

Average number of hours spent in total on the course per week (including scheduled activities):	Number of responses
0 - 10	14 (36.8%)
11 - 21	20 (52.6%)
22 - 32	3 (7.9%)
33 - 43	0 (0.0%)
44 - 54	0 (0.0%)
55 - 65	1 (2.6%)
66 - 76	0 (0.0%)
77 - 87	0 (0.0%)
88 - 98	0 (0.0%)
99 - 109	0 (0.0%)
Total	38 (100.0%)

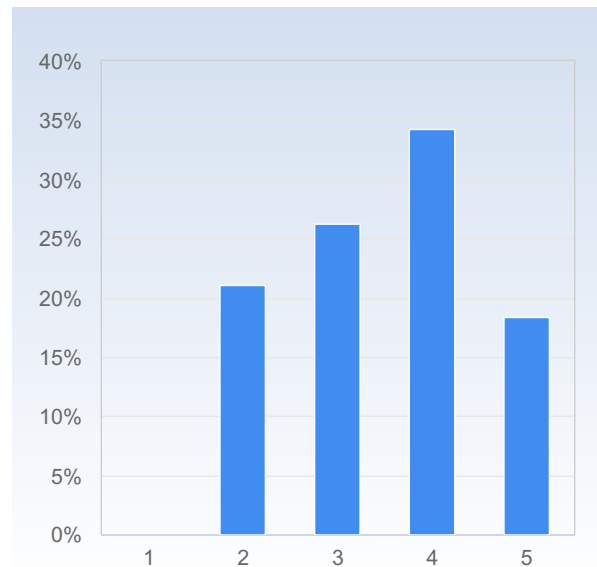|	Mean	Standard Deviation
Average number of hours spent in total on the course per week (including scheduled activities):	14.6	9.2

The course in general

On the scale 1-5 select the option that best matches your opinion: 1= disagree completely → 3= partly agree → 5= agree completely

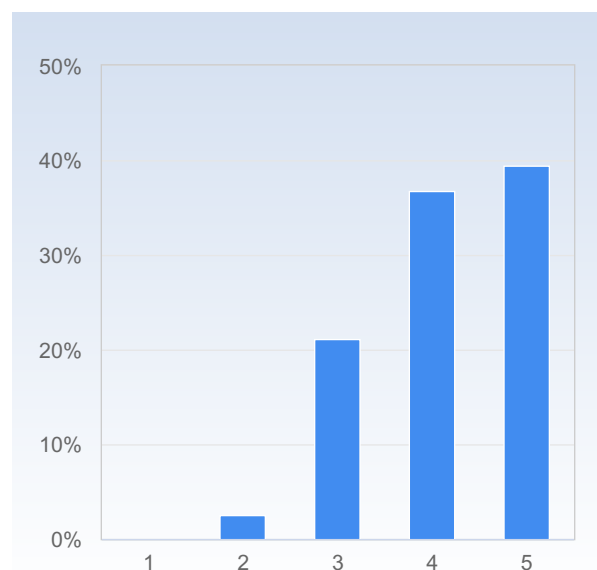## The way the course was taught and organised has been satisfactory.

The way the course was taught and organised has been satisfactory.	Number of responses
1	0 (0.0%)
2	8 (21.1%)
3	10 (26.3%)
4	13 (34.2%)
5	7 (18.4%)
Total	38 (100.0%)

	Mean	Standard Deviation
The way the course was taught and organised has been satisfactory.	3.5	1.0

## The number of teacher lead activities (lectures, seminars etc.) has been satisfactory.

The number of teacher lead activities (lectures, seminars etc.) has been satisfactory.	Number of responses
1	0 (0.0%)
2	1 (2.6%)
3	8 (21.1%)
4	14 (36.8%)
5	15 (39.5%)
Total	38 (100.0%)

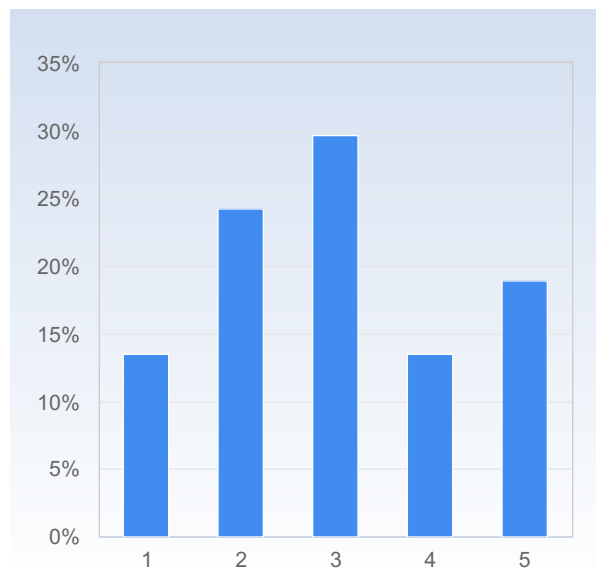|	Mean	Standard Deviation
The number of teacher lead activities (lectures, seminars etc.) has been satisfactory.	4.1	0.8

The lectures were valuable for my learning.

The lectures were valuable for my learning.	Number of responses
1	0 (0.0%)
2	7 (18.4%)
3	13 (34.2%)
4	8 (21.1%)
5	10 (26.3%)
Total	38 (100.0%)
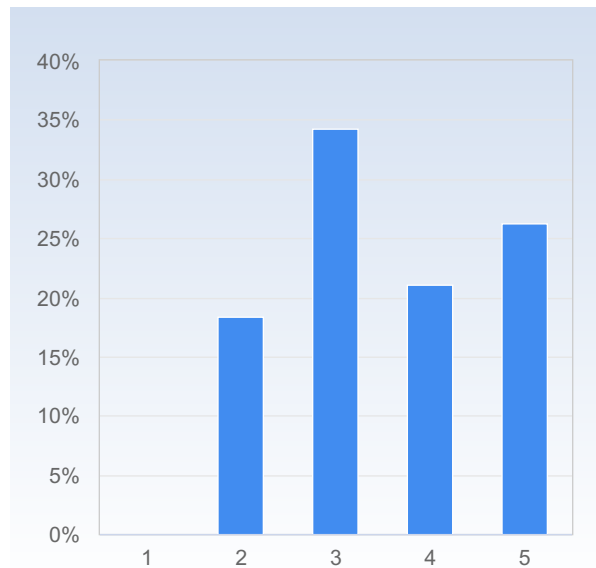
	Mean	Standard Deviation
The lectures were valuable for my learning.	3.6	1.1

The seminars were valuable for my learning.

The seminars were valuable for my learning.	Number of responses
1	5 (13.5%)
2	9 (24.3%)
3	11 (29.7%)
4	5 (13.5%)
5	7 (18.9%)
Total	37 (100.0%)

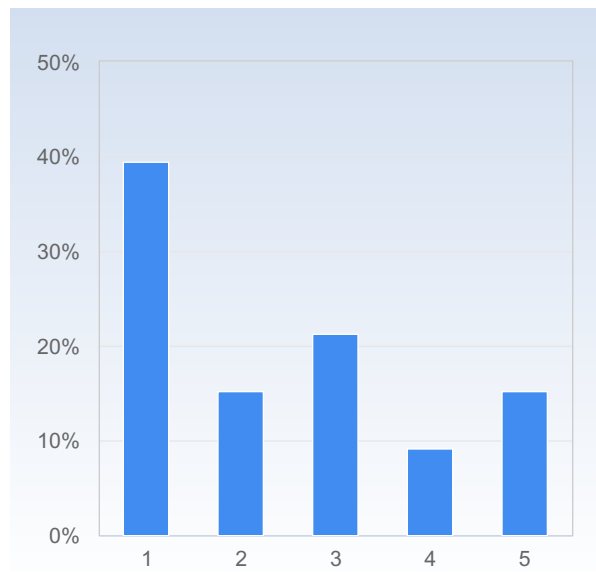|	Mean	Standard Deviation
The seminars were valuable for my learning.	3.0	1.3

The SI-meetings were valuable for my learning.

The SI-meetings were valuable for my learning.	Number of responses
1	13 (39.4%)
2	5 (15.2%)
3	7 (21.2%)
4	3 (9.1%)
5	5 (15.2%)
Total	33 (100.0%)

	Mean	Standard Deviation
The SI-meetings were valuable for my learning.	2.5	1.5

Studying on my own was valuable for my learning.

Studying on my own was valuable for my learning.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	4 (10.5%)
4	11 (28.9%)
5	23 (60.5%)
Total	38 (100.0%)
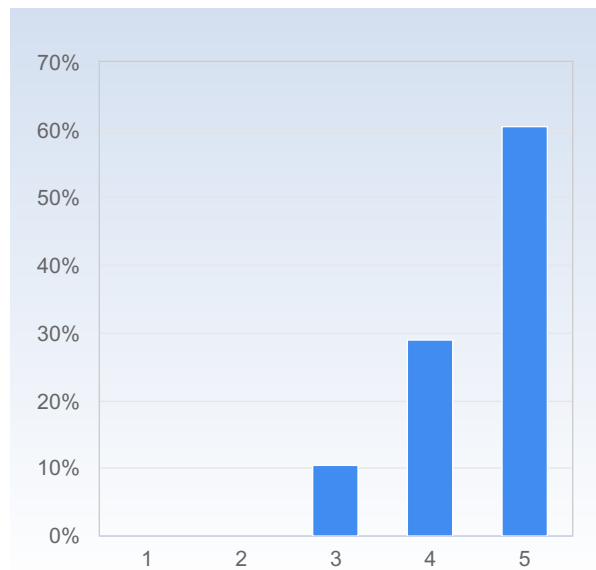
	Mean	Standard Deviation
Studying on my own was valuable for my learning.	4.5	0.7

The course literature/material was a valuable learning resource.

| The course literature/material was a valuable learning resource.	Number of responses
1	2 (5.3%)
2	8 (21.1%)
3	5 (13.2%)
4	15 (39.5%)
5	8 (21.1%)
Total	38 (100.0%)
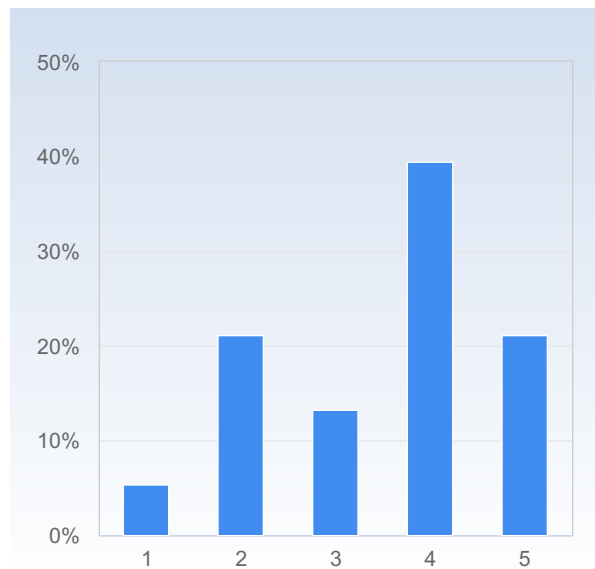
	Mean	Standard Deviation
The course literature/material was a valuable learning resource.	3.5	1.2

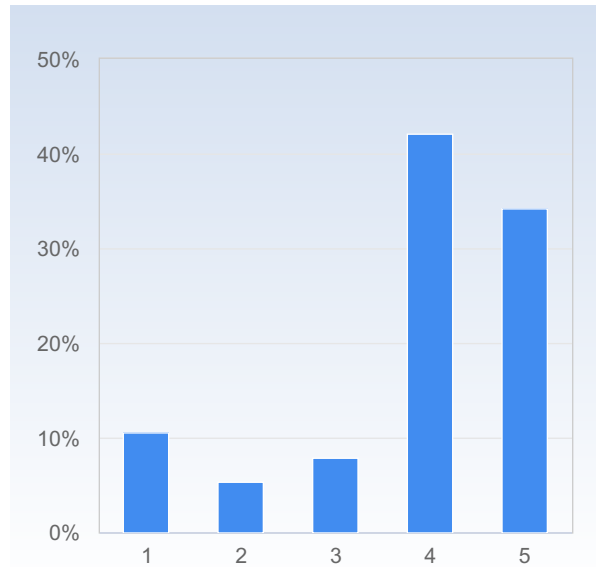# The course website in Canvas worked well as a learning platform.

The course website in Canvas worked well as a learning platform.	Number of responses
1	2 (5.3%)
2	3 (7.9%)
3	4 (10.5%)
4	14 (36.8%)
5	15 (39.5%)
Total	38 (100.0%)
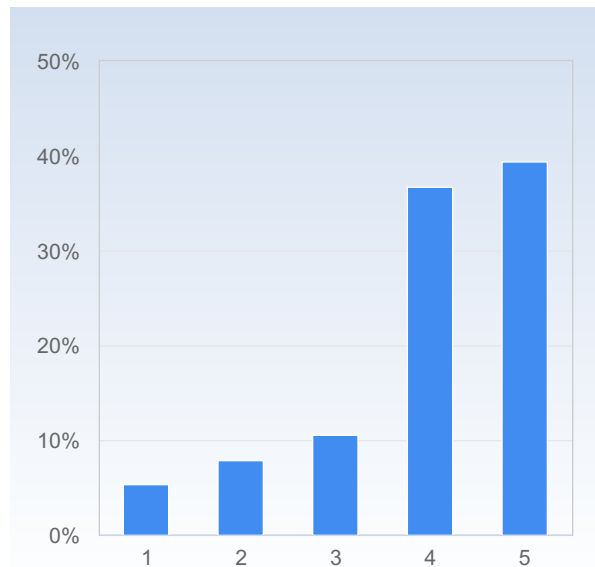
	Mean	Standard Deviation
The course website in Canvas worked well as a learning platform.	4.0	1.2

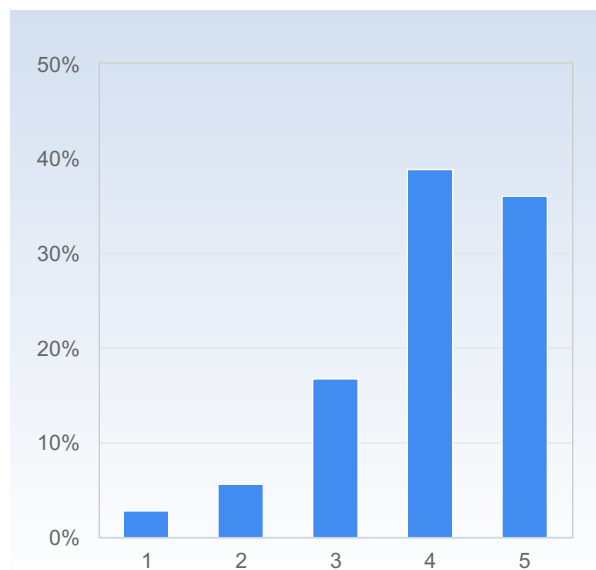# The information I received before the course start was satisfactory.

The information I received before the course start was satisfactory.	Number of responses
1	4 (10.5%)
2	2 (5.3%)
3	3 (7.9%)
4	16 (42.1%)
5	13 (34.2%)
Total	38 (100.0%)

	Mean	Standard Deviation
The information I received before the course start was satisfactory.	3.8	1.3

# The communication with the teaching staff during the course was satisfactory.

The communication with the teaching staff during the course was satisfactory.	Number of responses
1	1 (2.8%)
2	2 (5.6%)
3	6 (16.7%)
4	14 (38.9%)
5	13 (36.1%)
Total	36 (100.0%)

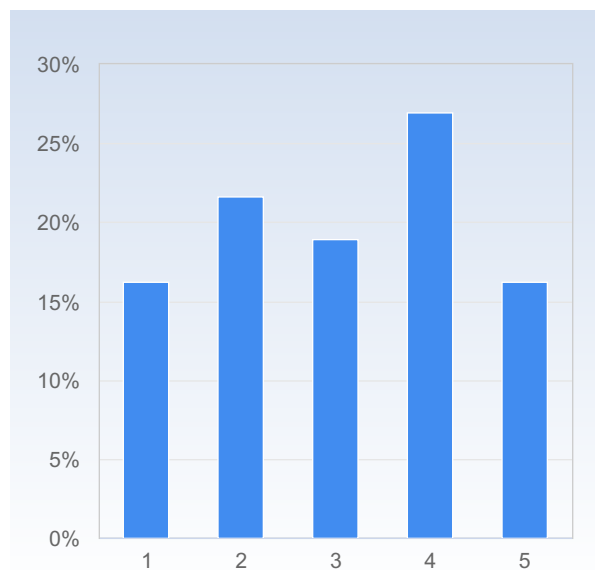|	Mean	Standard Deviation
The communication with the teaching staff during the course was satisfactory.	4.0	1.0

The assignments have been valuable for my learning.

The assignments have been valuable for my learning.	Number of responses
1	2 (5.6%)
2	1 (2.8%)
3	7 (19.4%)
4	8 (22.2%)
5	18 (50.0%)
Total	36 (100.0%)
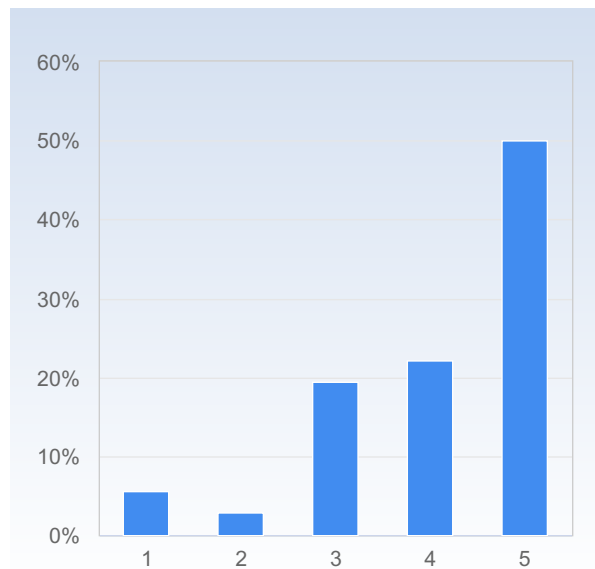
	Mean	Standard Deviation
The assignments have been valuable for my learning.	4.1	1.2

# I have received valuable feedback from my teacher/teachers during the course.

I have received valuable feedback from my teacher/teachers during the course.	Number of responses
1	6 (16.2%)
2	8 (21.6%)
3	7 (18.9%)
4	10 (27.0%)
5	6 (16.2%)
Total	37 (100.0%)

	Mean	Standard Deviation
I have received valuable feedback from my teacher/teachers during the course.	3.1	1.4

The course had a reasonable workload.

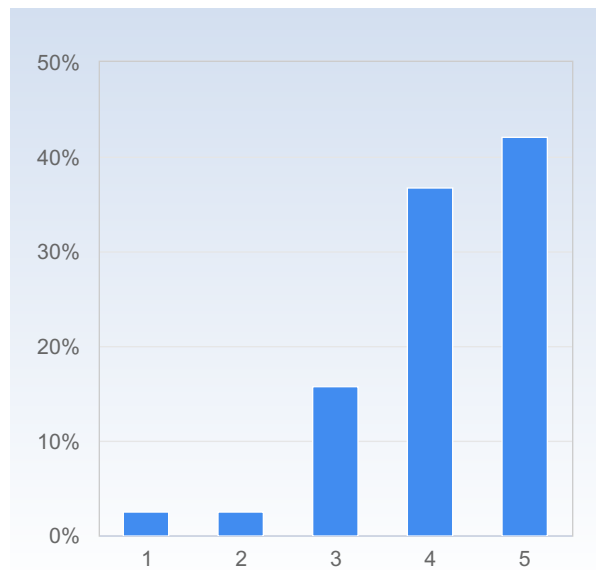| The course had a reasonable workload.	Number of responses
1	1 (2.6%)
2	4 (10.5%)
3	4 (10.5%)
4	14 (36.8%)
5	15 (39.5%)
Total	38 (100.0%)
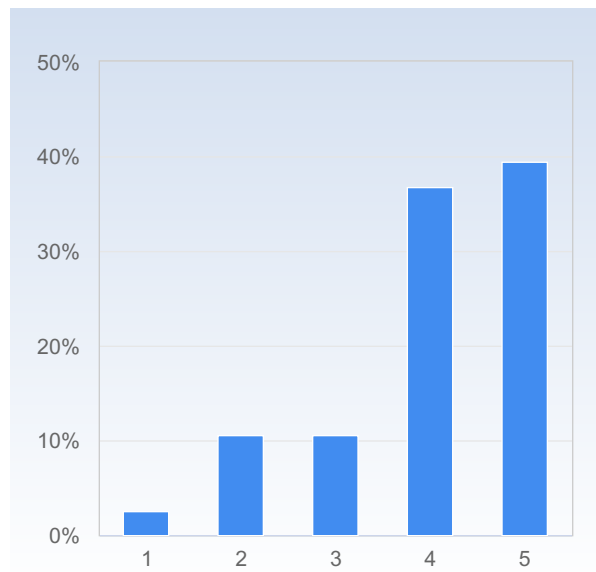
	Mean	Standard Deviation
The course had a reasonable workload.	4.0	1.1

The workload was evenly distributed throughout the course.

The workload was evenly distributed throughout the course.	Number of responses
1	1 (2.6%)
2	1 (2.6%)
3	6 (15.8%)
4	14 (36.8%)
5	16 (42.1%)
Total	38 (100.0%)

	Mean	Standard Deviation
The workload was evenly distributed throughout the course.	4.1	1.0

The examination matched the contents and level of the course.

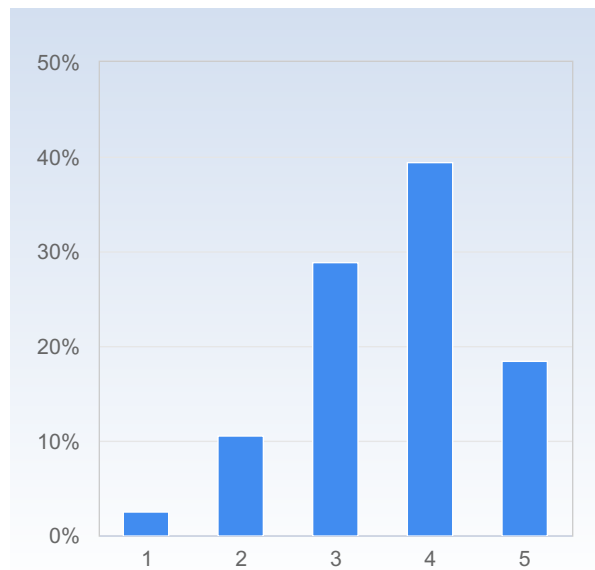| The examination matched the contents and level of the course.	Number of responses
1	1 (2.7%)
2	2 (5.4%)
3	6 (16.2%)
4	17 (45.9%)
5	11 (29.7%)
Total	37 (100.0%)
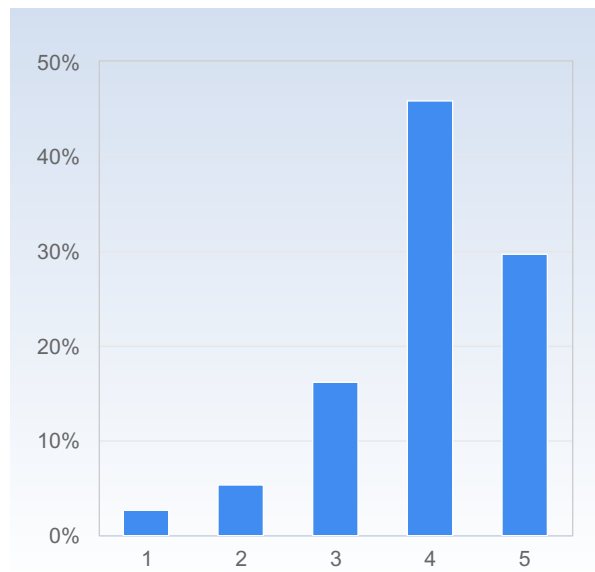
	Mean	Standard Deviation
The examination matched the contents and level of the course.	3.9	1.0

Overall, I am satisfied with the course.

| Overall, I am satisfied with the course.	Number of responses
1	1 (2.6%)
2	4 (10.5%)
3	11 (28.9%)
4	15 (39.5%)
5	7 (18.4%)
Total	38 (100.0%)

	Mean	Standard Deviation
Overall, I am satisfied with the course.	3.6	1.0

On the development of generic skills

On a scale 1-5 select the option that best matches your opinion: 1= disagree completely → 3= partly agree → 5= agree completely

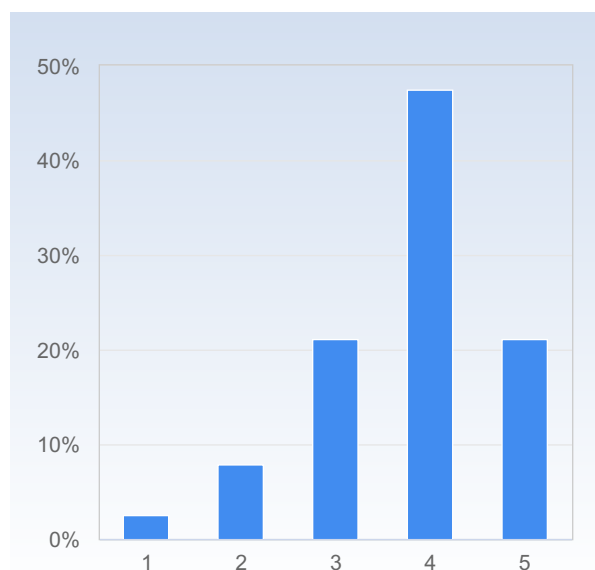## The course has increased my ability to read a mathematical text.

The course has increased my ability to read a mathematical text.	Number of responses
1	1 (2.6%)
2	5 (13.2%)
3	10 (26.3%)
4	13 (34.2%)
5	9 (23.7%)
Total	38 (100.0%)
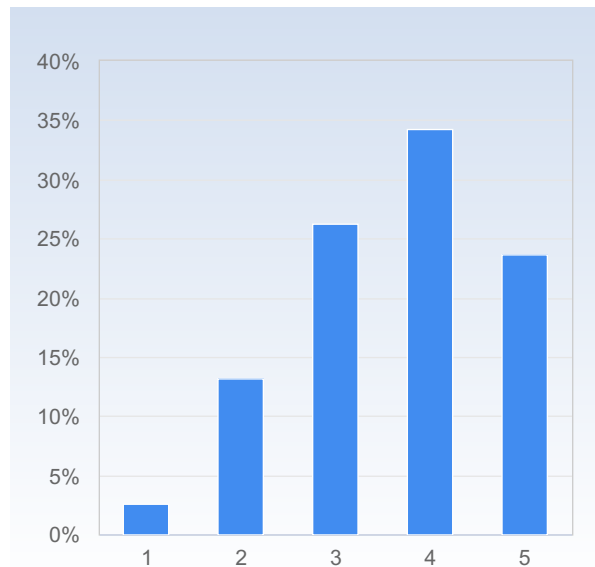
	Mean	Standard Deviation
The course has increased my ability to read a mathematical text.	3.6	1.1

The course has increased my ability to communicate the subject in writing.
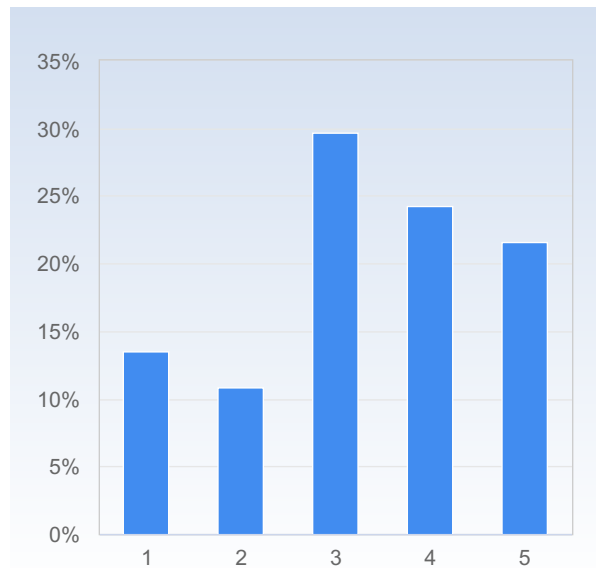
The course has increased my ability to communicate the subject in writing.	Number of responses
1	1 (2.6%)
2	3 (7.9%)
3	8 (21.1%)
4	18 (47.4%)
5	8 (21.1%)
Total	38 (100.0%)

	Mean	Standard Deviation
The course has increased my ability to communicate the subject in writing.	3.8	1.0

The course has increased my ability to cooperate.

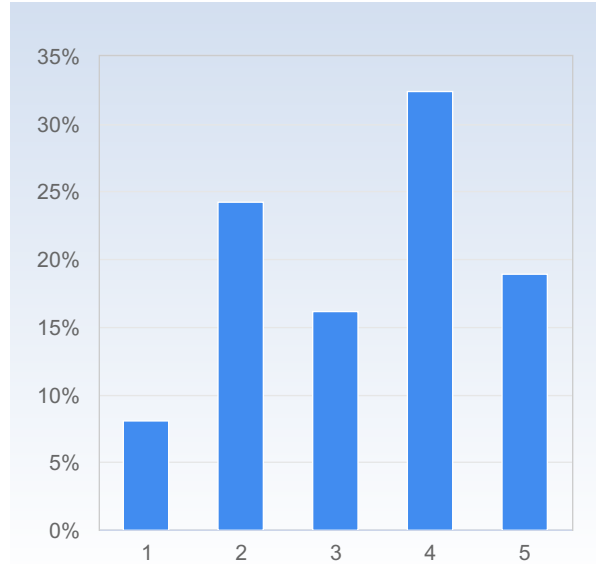| The course has increased my ability to cooperate.	Number of responses
1	5 (13.5%)
2	4 (10.8%)
3	11 (29.7%)
4	9 (24.3%)
5	8 (21.6%)
Total	37 (100.0%)

	Mean	Standard Deviation
The course has increased my ability to cooperate.	3.3	1.3

The course has increased my ability to search and process information.

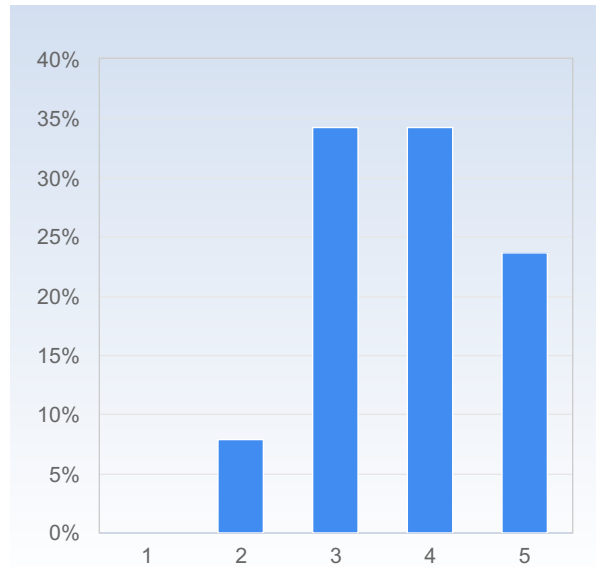| The course has increased my ability to search and process information.	Number of responses
1	3 (8.1%)
2	9 (24.3%)
3	6 (16.2%)
4	12 (32.4%)
5	7 (18.9%)
Total	37 (100.0%)

	Mean	Standard Deviation
The course has increased my ability to search and process information.	3.3	1.3

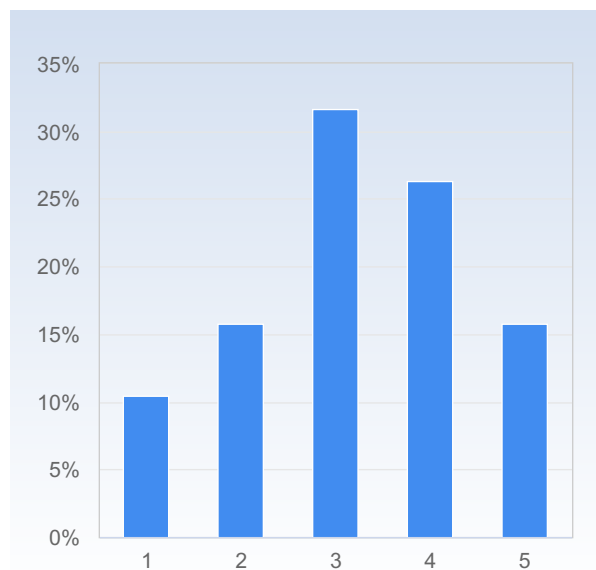# The course has increased my ability to analyze and solve problems.

The course has increased my ability to analyze and solve problems.	Number of responses
1	0 (0.0%)
2	3 (7.9%)
3	13 (34.2%)
4	13 (34.2%)
5	9 (23.7%)
Total	38 (100.0%)

	Mean	Standard Deviation
The course has increased my ability to analyze and solve problems.	3.7	0.9

As a result of this course, I feel confident about tackling unfamiliar problems.

As a result of this course, I feel confident about tackling unfamiliar problems.	Number of responses
1	4 (10.5%)
2	6 (15.8%)
3	12 (31.6%)
4	10 (26.3%)
5	6 (15.8%)
Total	38 (100.0%)

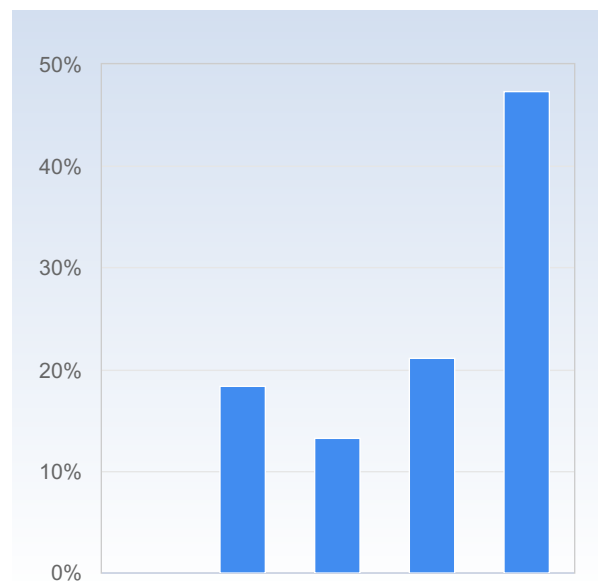|	Mean	Standard Deviation
As a result of this course, I feel confident about tackling unfamiliar problems.	3.2	1.2

Online study environment
To avoid the spread of Covid-19 certain teaching activities have been held online. On a scale 1-5 select the option that best matches your opinion: 1= disagree completely → 3= partly agree → 5= agree completely

Following the lectures online worked fine for me.

Following the lectures online worked fine for me.	Number of responses
	0 (0.0%)
	7 (18.4%)
	5 (13.2%)
	8 (21.1%)
	18 (47.4%)
Total	38 (100.0%)

	Mean	Standard Deviation
Following the lectures online worked fine for me.	4.0	1.2

Following the seminars online worked fine for me.

Following the seminars online worked fine for me.	Number of responses
	3 (7.9%)
	5 (13.2%)
	7 (18.4%)
	8 (21.1%)
	15 (39.5%)
Total	38 (100.0%)
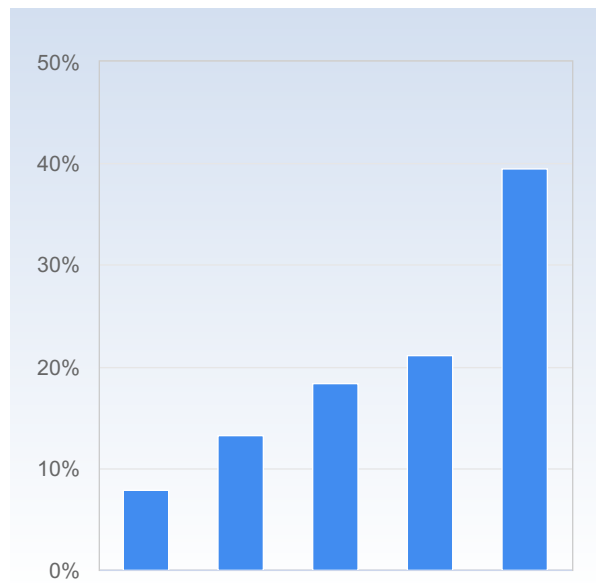
	Mean	Standard Deviation
Following the seminars online worked fine for me.	3.7	1.3

Following the exercise classes online worked fine for me.

Following the exercise classes online worked fine for me.	Number of responses
	7 (23.3%)
	1 (3.3%)
	15 (50.0%)
	3 (10.0%)
	4 (13.3%)
Total	30 (100.0%)
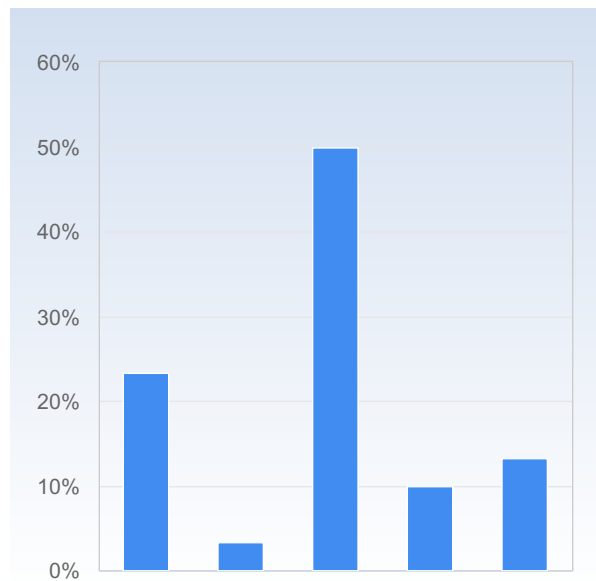
	Mean	Standard Deviation
Following the exercise classes online worked fine for me.	2.9	1.3

Collaborating with the other students in my assignment group worked well.

Collaborating with the other students in my assignment group worked well.	Number of responses
	4 (11.4%)
	4 (11.4%)
	8 (22.9%)
	7 (20.0%)
	12 (34.3%)
Total	35 (100.0%)
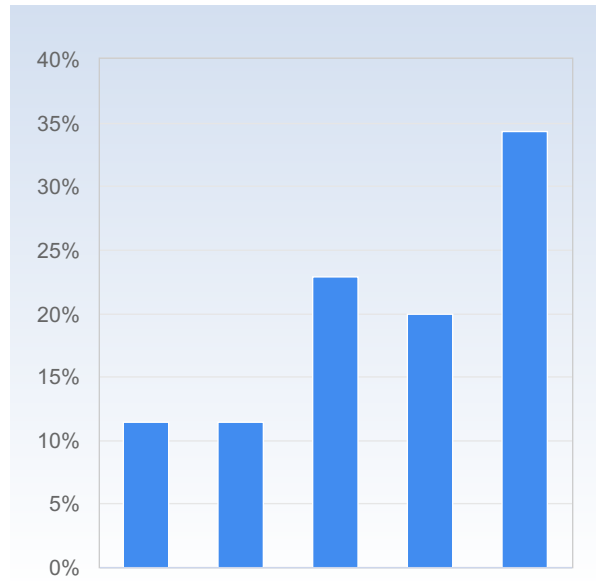
	Mean	Standard Deviation
Collaborating with the other students in my assignment group worked well.	3.5	1.4

Online teaching has had a negative impact on my studies.

Online teaching has had a negative impact on my studies.	Number of responses
	13 (34.2%)
	12 (31.6%)
	6 (15.8%)
	4 (10.5%)
	3 (7.9%)
Total	38 (100.0%)
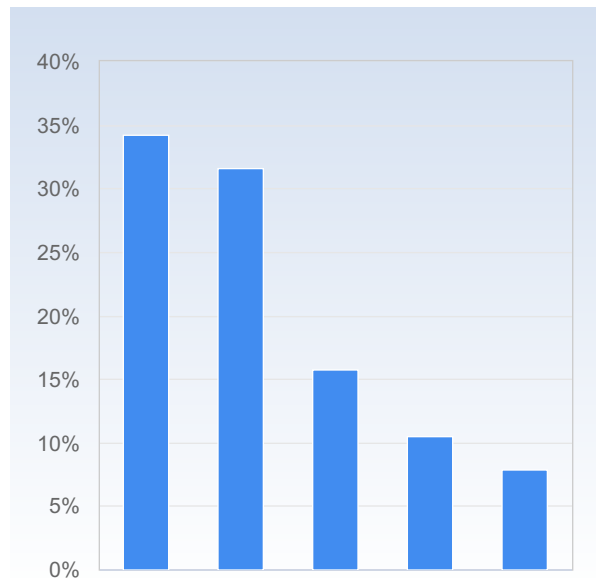
	Mean	Standard Deviation
Online teaching has had a negative impact on my studies.	2.3	1.3

Please comment below if there are other aspects related to the impact of online teaching on your learning that you want to bring to our attention (for example regarding your ability to concentrate, your motivation, etc.)

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Not me directly, but it probably made the group project collaboration harder, others in the group were late to meetings/didn't show up, in general lacking participation

I've found that I have a really hard time concentrating on online teaching, so I made sure to come to the lectures in person as often as I could

Decreased my motivation and energy

N/A

Having seminars online was a major disadvantage in this course. The teacher was amazing, but doing exercises on Zoom was far from ideal. It was tiring to sit in long online seminars and concentrate properly.

The seminars were not good.
The TA was not very prepared for the exercises.
For example, you don't want a 40 minute exercise, for the TA to say "I knew it was wrong from the beginning" and then continue with it.
The online learning definitely impacted the quality of the seminars.

I really can't concentrate when we are online which is bad because I had low motivation because of this. Also there were almost no time to get home from the lectures on campus to the seminars online on the lunch-break and this resulted in me making my meal during the seminars (and of course, I couldn't concentrate on the seminar when I was cooking...)

It was extremely hard to focus on following what seminar teachers discussed and how they solved to problems which led to me skipping the seminars quite often. However, I really appreciate that they would publish the well-explained solutions to the problems which helped focus when I was studying by myself.

It's very easy to lose focus during the seminars, I feel like that in every course.

I can not concentrate on online classes

I thought that some exam questions were much harder than previous exams.

It is a very nice alternative not having to go to campus on days that you feel like shit. Being able to attend online makes the difference from actually going to the lecture or not going at all.

I couldn't´t concentrate as the same way

What did you appreciate most with the course?

What did you appreciate most with the course?

The lectures were excellent

I think the way the lecture notes prepare you before the lecture was particularly helpful

I thought that the lecture notes were well written for the most part

That fact that everything, including the seminar solutions, were available online and easily accessible.

Going through old exam questions in seminars.

The assignments were essential to my learning ability. I had studied linear algebra during high school (basically the same content as in this course), and being forced to do exercises each week suited the more revision-oriented attitude I had.

the exam, i love exams, should be extended to 10 hours :D

How we were forced to see beyond the equations, to understand the 3D space and.
Professor Ana-Maria is very good and easy to talk to. She really cares we understand.

I really appreciated that the seminars were in swedish because my biggest problem was probably that the course was in English... I aledy knew a few things about vectors, but I didn't realise what the teacher was talking about until I heard it in Swedish on the seminar..

How useful the assignements. They helped me to understand what types of problems I could get on. the final exam.

I found the assignments to be the best part, since it encouraged group work, was very beneficial for exam questions and gave a reason to learn how to use Latex.

The assignments was very good to have because then you are forced to learn things for real instead of procrastinating away all the time you have to study on your free time. Having the assignments be challenging was very good for my learning experience.

learning about matrices

many past papers to practice on for the exam
assignments were well spaced out and useful to check my knowledge at different stages of the course

I enjoyed the visual aspect of linear algebra, I believe that constructing things with 3D shapes and at the same time analyzing them with the relevant math would make for more interesting assignments.

I think everything about the course was done well, but if i had to pick one thing i would say that the seminars in swedish led by Adem were excellent. It was nice to be able to do it in swedish because it makes some things easier to process in the moment, while some topics can be harder to understand during the lectures and has to be revisited after to fully take in because english just does not go in to the brain as good. ofcourse this is not critique of the lectures, i understand they have to be in english. Adem was also an excellent teacher and gave concise and concrete answers and explained things very well.

That everything is recorded so I can review the lessons again.

It was very well-structured

My prior knowledge of Linear Algebra proved to be adequate for me to fully understand and follow the course, and most of all, there were some parts and subjects which I had not fully understood back when I studied Linear Algebra in my home country. The lecture notes were clearly effective for filling the gaps of my knowledge about these specific subjects.

The Swedish seminars! And Adem was so great and did his best so we all could understand!

What do you think should be improved?

I don't feel completely sold on the (u|v) notation for scalar product. Maybe it's because I haven't seen it before (while I have seen dot and <,> notation before), but I feel like it takes longer to write and feels unintuitive for me. For example, it took me a while to realise that in expressions like (uxv|w) mean ((uxv)|w) and not (ux(v|w))

The structure of the lectures, in particular i thought that there was too much time and energy put in to writing down large general proofs when the proofs were allready written in the presentation slides and in the lecture notes.

N/A

Slow down the pace in lectures. Felt at times that the teacher was in a rush!
Start going through exam questions much earlier in the course! Learnt so much more by going through old exam questions.

I would highlight the fact that you need a solid geometric mindset when approaching a problem, as well as mastery of the more technical, algebraic methods. Since the technical methods are new, and most important, it is in my experience easy, as a student, to focus so much on them that you forget that, in order to actually solve challenging problems, you need to combine them with your intuition for now geometry works.

less geometry, more matrices, spaces etc
less blackboard writing, more freestyling

there should be a speeeeed matrix multiplication contest at the end of the course where the winner gets a pass with distinction immediately

It could go more in depth or even be merged with Linear Algebra 2 into a single course.

There were multiple notations in the lecture notes that I did not recognize despite already having taken a course on linear algebra. I can't find any other example online where (x|y) is the notation for scalar product, only x \cdot y or maybe <x|y> for inner product. Also the symbol for the identity matrix is inconsistent and varies between I (which I think is standard) and E (which I suspect is a mistake in translation, since Enhetsmatris starts with an E).

The quality of the seminars. Although, I am sure the on campus version is probably much better.

Maybe more evaluations before the exam, as in preparation, like quizzes.

We should have the opportunity to have the course in Swedish because a lot of the teacher-student do not know the specific words in English which makes it sooooo much more difficult for us than for the people in the "only math"-group were a lot of students only know english. And well, we soon-to-be teachers will probably have to teach this stuff in swedish but right now I couldn't because I only know it in English... Also I would like to note that I didn't like when the teacher and the teacher assistant said that some problems were too easy aand that we "should know how to do that by now" because I and at least a few of my friends always felt dumb when you said stuff like that. I hope thet my future students will never really feel dumb because of me, because as a teacher you want the student to understand the problems, so you can't tell them that this os easy and if you don't know how to solv it , you are dumb..

Thought the lectures were pretty hard to understand, didn't see the point in going through long proofs. Would have appreciated more focus on what we actually needed to learn, more examples and so on.

Seminars
Also, more problems in the assignments and more past exam questions in the lecture notes

Sometimes I found the lecture notes hard to understand.

the lectures consisted mostly of writing down the information given on the slides to the blackboard

pretty much half of the lecture time is spent proving the formulas that we will use in general cases. I understand that this is necessary given that it is a module in the maths department but personally some of the proofs confused me more than they helped me (as a physics student).=

More straight-to-the-point lectures, less writing on the board (maybe using the slides is enough)

I think the way that everything in the course is connected should be made more clear from the beginning.

Can't really think of anything actually... if i were to say something it would just be forcing something out. Everything has been very good, lectures, teachers, material and workload.

Overall teaching technique by the proffessor and TAs. Also the course litterature is messy and hard to follow. The lecture notes are very hard to grasp even after wathcing the lectures and the other book does not go well with the structure of this course..

If digital tools can be implemented in the lectures that will be great because the subjects involves many abstract concepts so I think explanations combined with more graphs and images are most efficient.

It would be nice with a bit more background info about/motivation for studying matrices. It is hard to get motivated to study something when one does not know why it is supposed to be interesting in the first place.

The Ph.D. students from Seminars were sometimes not well prepared. And as a result of this, a great amount of time would be wasted while the teacher (Ph.D. student) tried solving a question by trial and error. It was fine to see how the whole process of dealing with such challenging questions could be, but since time was limited, it would have been great if they all solved all the questions before presenting it to us students.

I also believe students need to know a bit more about the historical origins of the taught material. I think that if we could learn why and how such ideas and theorems were developed, we may have a better understanding of the goal of the course. For instance, Jan-Fredrik Olsen starts most of his chapters in his lecture notes "Don't Panic: Analysis in One Variable" with a very brief history of what has led to the development of such ideas.

I think that I didn't get as much from the lectures as I wish. It feels like I learn more from the seminars than the lectures. I don't know if its because it was in English or high tempo but I could not follow what happened on the lectures.

I think that it is really bad that the teacher students didnt know that all the math would be in english until we got there on the first day, so no one was prepered for it, and that results in an extra layer you have to process the math trough.

Have you during this course experienced course literature, staff or teaching methods to be discriminatory in any way (gender, ethnicity, etc.)?

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No
No
No
No
No.
no way
Absolutely not.
I did not experienced any sort of discrimination.
Well... the fact that you suppose that every swede understands English is quite discriminating I think towards the people who actually don't..
no
no
No
No
No
no
No
No, not at all.
No!