LUNDS UNIVERSITET

Matematikcentrum
Matematik NF

Course Analysis for Linear Algebra 1 (MATA22, ÄMAD01) Autumn 2020

Lecturer: Anna-Maria Persson

Teaching assistants: Henrik Ekström, Frej Weiström Dahlin, Adem Limani

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 92 registered students and 36 re-registered students on the course code MATA22 as well as 22 registered students and 9 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:

91 students participated in the ordinary written examination (6 credits) and 52 of them passed.

38 students participated in the resit examination and 25 passed.

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

74 of the new students have passed all examination parts, 26 of them with the grade *pass with distinction*.

Course code ÄMAD01:

26 students participated in the ordinary written examination (6 credits) and 55 of them passed.

11 students participated in the resit examination and 5 passed.

Course evaluation

Summary of students answers: 49 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 and discussed with 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).
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 due to the reduced

number of study places. On the other hand, the group of students admitted to the course ÄMAD01 within the Teacher Education Programme has increased in comparison to the previous year.

As in the previous autumn semester, 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 was highly 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 clearly 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 3.3, standard deviation 1.3) and also by the answers to some of the questions regarding the workload or the level of difficulty of the exercises and assignments. While some students find the level of detail used in the lectures more difficult than useful others express the wish to use even more stringent formal mathematical language and emphasis on proofs.

As usual, we attempt to find common ground in the lectures and seminars to support the entire student group, but is has become more clear in this course realisation that the students with a previous knowledge of the subject would benefit from more stimulation such as extra material while at the other side of the spectrum, the students with no previous knowledge of the subject would need more dedicated support.

Owing to the ongoing pandemic situation during this autumn semester, 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. 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.

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 little interaction they could have in person with teachers and other students.

The two written examinations in October and November have been held via Zoom. A few students who could not participate via Zoom for various reasons have been granted the possibility of sitting the examination on campus in small groups.

The examination results are slightly lower compared to the previous autumn semester, and many students brought up the negative impact that the ongoing pandemic situation have had on their learning and motivation. The most problematic aspect related to the online teaching format is that it does not provide a natural environment for interaction, especially for new students. As interaction and the ability to communicate the subject orally is crucial especially for the students enrolled in the teacher education programme, one could infer that this student group was most affected by the current circumstances. This should be kept in mind and compensated in the following courses within the teacher education programme.

Changes from the previous course realisation:

The biggest change from the previous course realisation was obviously the unintended switch to the online teaching format due to the pandemic. As the teaching and examination forms are stipulated in the official course syllabus, we tried to keep the online teaching format as similar to the usual one as much as possible. In the previous course evaluation it was suggested to provide an additional

literature list for the more interested students with previous knowledge of the subject and also use certain exercise classes for extra support. A list of alternative books was suggested this semester but maybe a more structured setting for in-depth discussions should be provided in the future. Online exercise classes have been scheduled and re-scheduled during the course in an attempt to better match students' needs, but the participation in these activities has been very low.

Suggestions for the next course realisation:

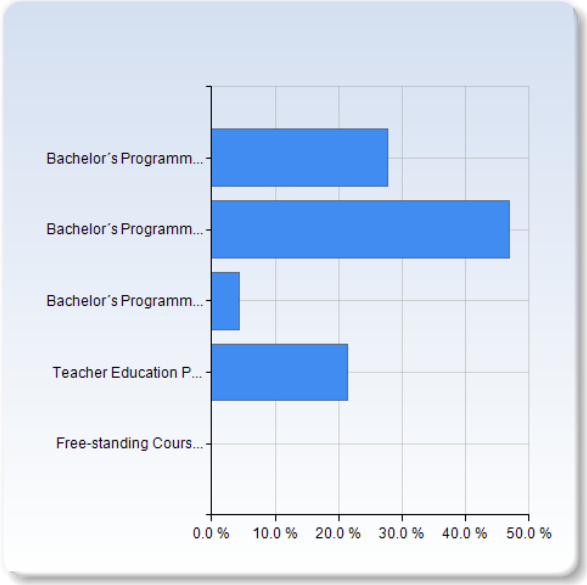
Clearly, the mixed lecture format was not optimal and proved to be more time consuming compared to regular lectures on campus. Presentation slides were provided during the lectures on campus and made available before the lectures for the students attending online, but as these were not intended to contain all presented material, detailed notes and arguments were presented on the blackboard. This has been pointed out as time-consuming by some students and can be optimized in future course realisations. If the course will be given online in the upcoming autumn semester other technical solutions should be considered. The Lecture Notes should be further expanded to include both more basic examples and challenging ones to better adress the students' need of support or stimulation.

Linear Algebra 1, Autumn 2020

Answer Count: 49

I have studied this course as part of

I have studied this course as part of	Number of Responses
Bachelor´s Programme in Mathematics	13 (27.7%)
Bachelor´s Programme in Physics, Theoretical Physics, Astronomy	22 (46.8%)
Bachelor´s Programme, other specialization	2 (4.3%)
Teacher Education Programme	10 (21.3%)
Free-standing Course	0 (0.0%)
Total	47 (100.0%)

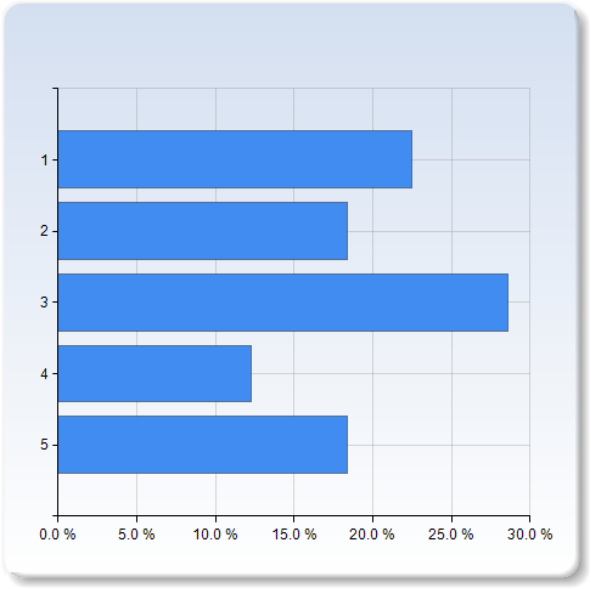


	Mean	Standard Deviation
I have studied this course as part of	2.8	2.2

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.

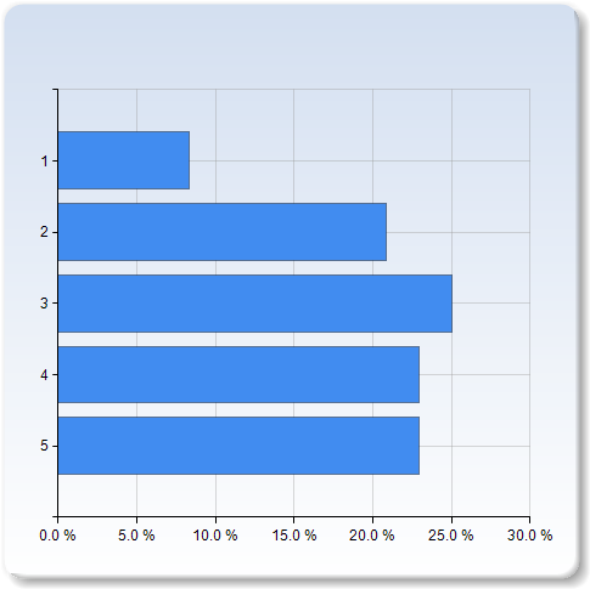
I had studied Linear Algebra and Geometry prior to this course.	Number of Responses
1	11 (22.4%)
2	9 (18.4%)
3	14 (28.6%)
4	6 (12.2%)
5	9 (18.4%)
Total	49 (100.0%)



	Mean	Standard Deviation
I had studied Linear Algebra and Geometry prior to this course.	2.9	1.4

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

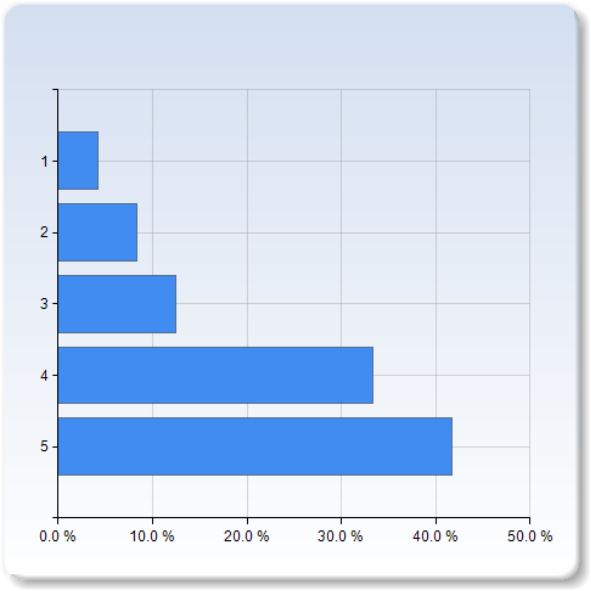
My prior knowledge has been sufficient to assimilate the contents of this course.	Number of Responses
1	4 (8.3%)
2	10 (20.8%)
3	12 (25.0%)
4	11 (22.9%)
5	11 (22.9%)
Total	48 (100.0%)



	Mean	Standard Deviation
My prior knowledge has been sufficient to assimilate the contents of this course.	3.3	1.3

I have participated actively in the course.

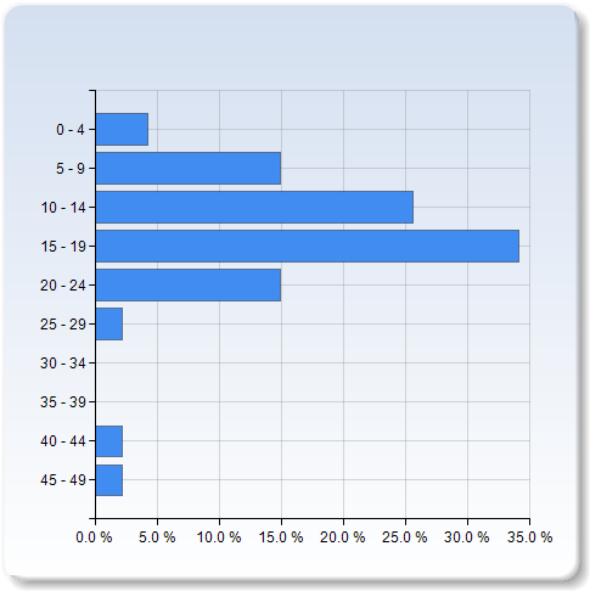
I have participated actively in the course.	Number of Responses
1	2 (4.2%)
2	4 (8.3%)
3	6 (12.5%)
4	16 (33.3%)
5	20 (41.7%)
Total	48 (100.0%)



	Mean	Standard Deviation
I have participated actively in the course.	4.0	1.1

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 - 4	2 (4.3%)
5 - 9	7 (14.9%)
10 - 14	12 (25.5%)
15 - 19	16 (34.0%)
20 - 24	7 (14.9%)
25 - 29	1 (2.1%)
30 - 34	0 (0.0%)
35 - 39	0 (0.0%)
40 - 44	1 (2.1%)
45 - 49	1 (2.1%)
Total	47 (100.0%)



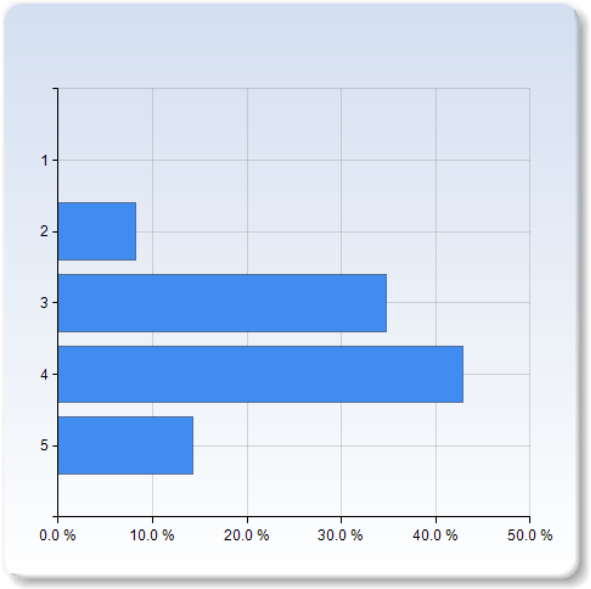
	Mean	Standard Deviation
Average number of hours spent in total on the course per week (including scheduled activities):	14.9	7.9

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.

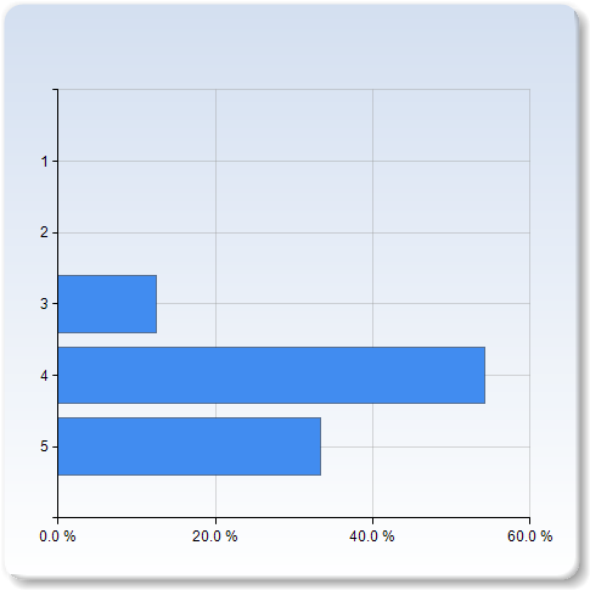
The way the course was taught and organised has been satisfactory.	Number of Responses
1	0 (0.0%)
2	4 (8.2%)
3	17 (34.7%)
4	21 (42.9%)
5	7 (14.3%)
Total	49 (100.0%)



	Mean	Standard Deviation
The way the course was taught and organised has been satisfactory.	3.6	0.8

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

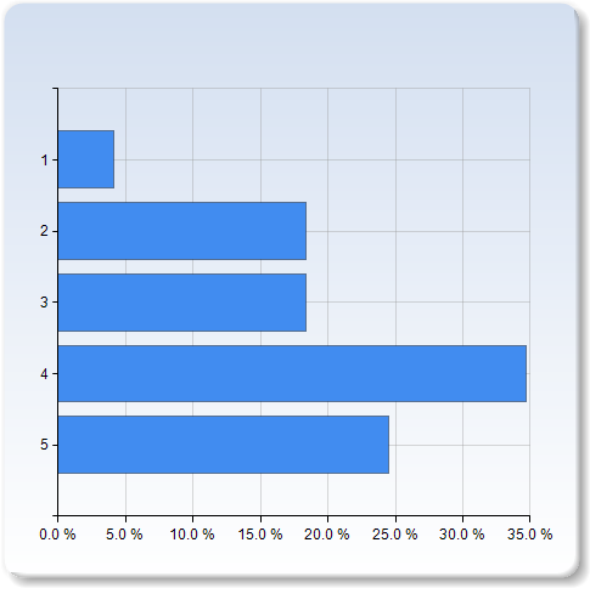
The number of teacher lead activities (lectures, seminars etc.) has been satisfactory.	Number of Responses
1	0 (0.0%)
2	0 (0.0%)
3	6 (12.5%)
4	26 (54.2%)
5	16 (33.3%)
Total	48 (100.0%)



	Mean	Standard Deviation
The number of teacher lead activities (lectures, seminars etc.) has been satisfactory.	4.2	0.7

The lectures were valuable for my learning.

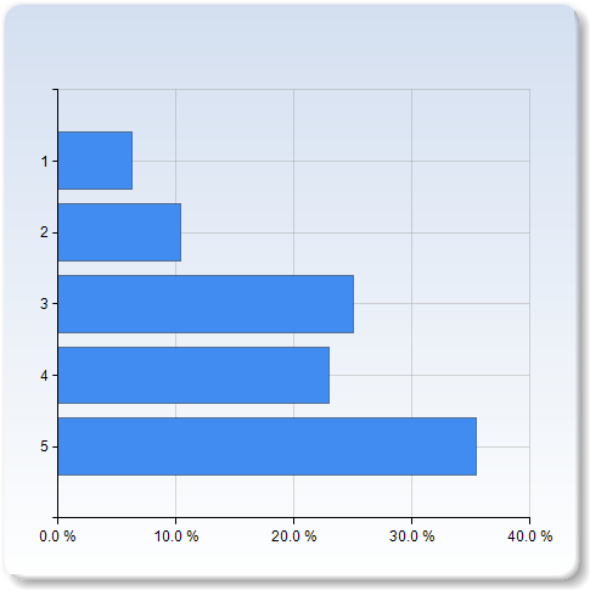
The lectures were valuable for my learning.	Number of Responses
1	2 (4.1%)
2	9 (18.4%)
3	9 (18.4%)
4	17 (34.7%)
5	12 (24.5%)
Total	49 (100.0%)



	Mean	Standard Deviation
The lectures were valuable for my learning.	3.6	1.2

The seminars were valuable for my learning.

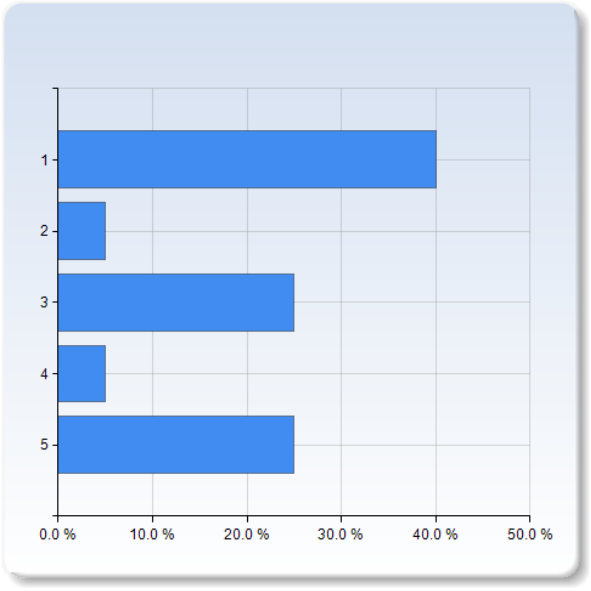
The seminars were valuable for my learning.	Number of Responses
1	3 (6.3%)
2	5 (10.4%)
3	12 (25.0%)
4	11 (22.9%)
5	17 (35.4%)
Total	48 (100.0%)



	Mean	Standard Deviation
The seminars were valuable for my learning.	3.7	1.2

The SI-meetings were valuable for my learning.

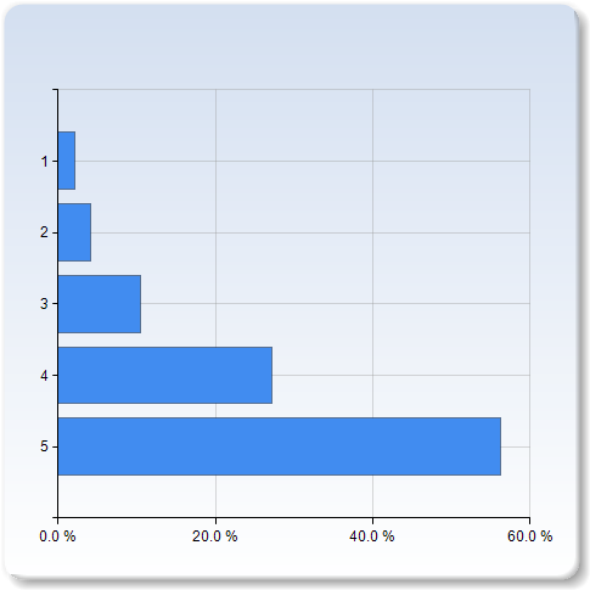
The SI-meetings were valuable for my learning.	Number of Responses
1	16 (40.0%)
2	2 (5.0%)
3	10 (25.0%)
4	2 (5.0%)
5	10 (25.0%)
Total	40 (100.0%)



	Mean	Standard Deviation
The SI-meetings were valuable for my learning.	2.7	1.6

Studying on my own was valuable for my learning.

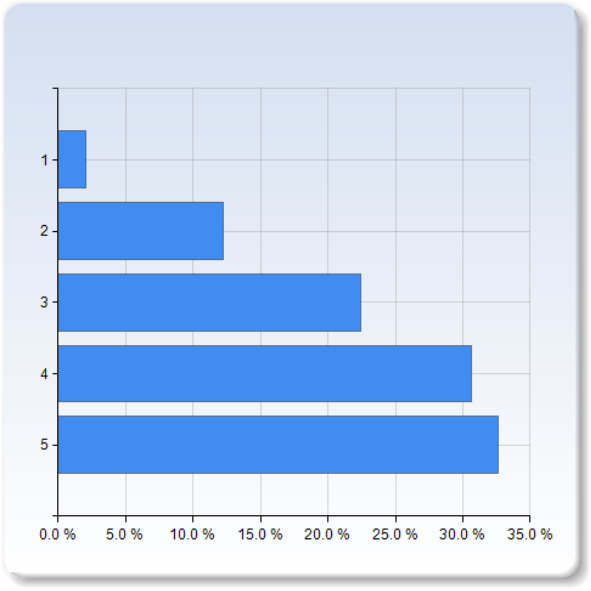
Studying on my own was valuable for my learning.	Number of Responses
1	1 (2.1%)
2	2 (4.2%)
3	5 (10.4%)
4	13 (27.1%)
5	27 (56.3%)
Total	48 (100.0%)



	Mean	Standard Deviation
Studying on my own was valuable for my learning.	4.3	1.0

The course literature/material was a valuable learning resource.

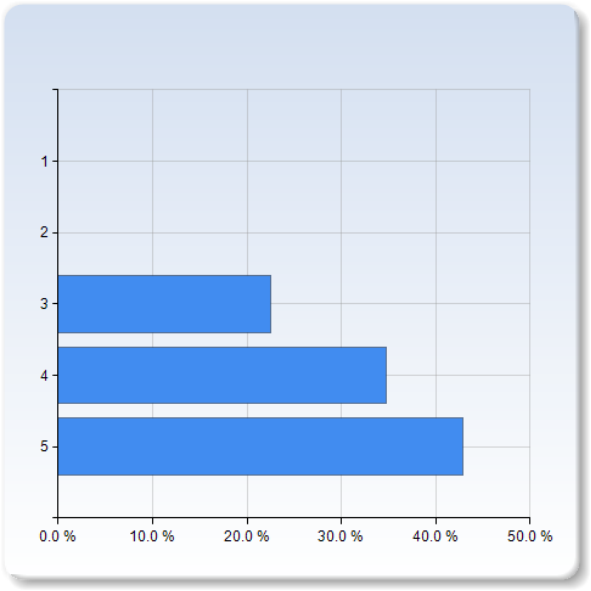
The course literature/material was a valuable learning resource.	Number of Responses
1	1 (2.0%)
2	6 (12.2%)
3	11 (22.4%)
4	15 (30.6%)
5	16 (32.7%)
Total	49 (100.0%)



	Mean	Standard Deviation
The course literature/material was a valuable learning resource.	3.8	1.1

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

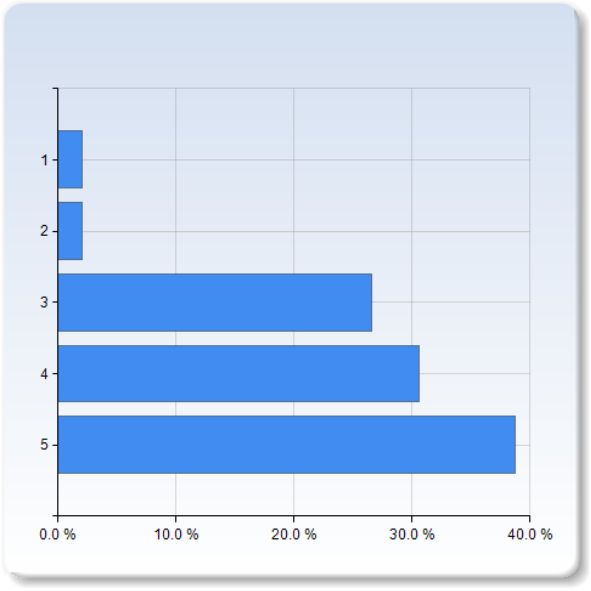
The course website in Canvas worked well as a learning platform.	Number of Responses
1	0 (0.0%)
2	0 (0.0%)
3	11 (22.4%)
4	17 (34.7%)
5	21 (42.9%)
Total	49 (100.0%)



	Mean	Standard Deviation
The course website in Canvas worked well as a learning platform.	4.2	0.8

The information I received before the course start was satisfactory.

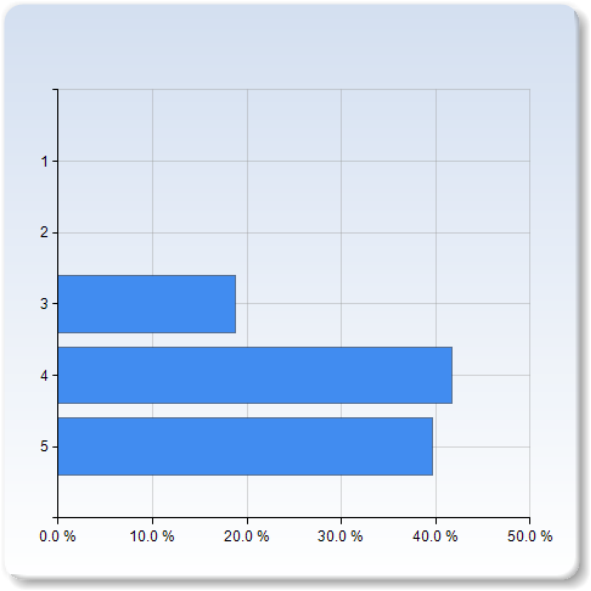
The information I received before the course start was satisfactory.	Number of Responses
1	1 (2.0%)
2	1 (2.0%)
3	13 (26.5%)
4	15 (30.6%)
5	19 (38.8%)
Total	49 (100.0%)



	Mean	Standard Deviation
The information I received before the course start was satisfactory.	4.0	1.0

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

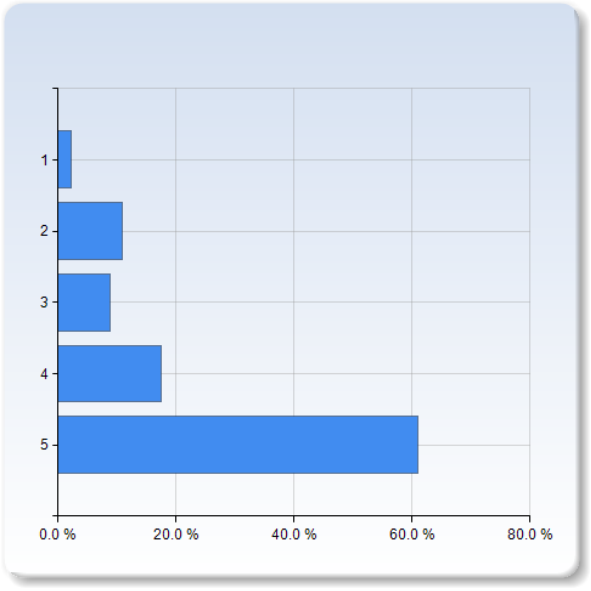
The communication with the teaching staff during the course was satisfactory.	Number of Responses
1	0 (0.0%)
2	0 (0.0%)
3	9 (18.8%)
4	20 (41.7%)
5	19 (39.6%)
Total	48 (100.0%)



	Mean	Standard Deviation
The communication with the teaching staff during the course was satisfactory.	4.2	0.7

The assignments have been valuable for my learning.

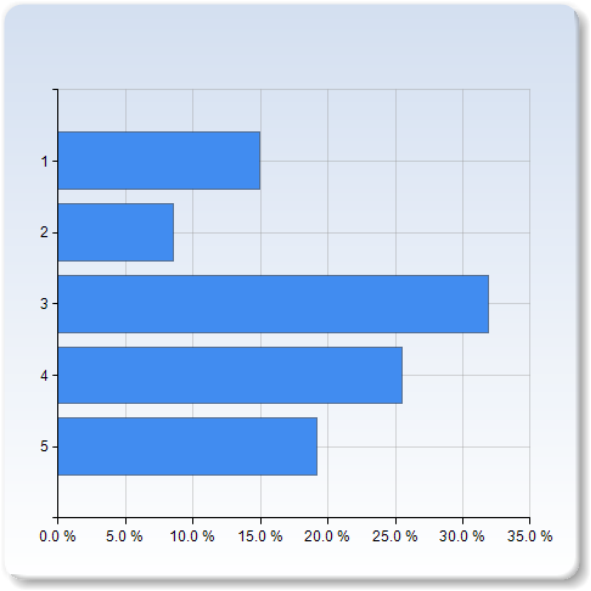
The assignments have been valuable for my learning.	Number of Responses
1	1 (2.2%)
2	5 (10.9%)
3	4 (8.7%)
4	8 (17.4%)
5	28 (60.9%)
Total	46 (100.0%)



	Mean	Standard Deviation
The assignments have been valuable for my learning.	4.2	1.1

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

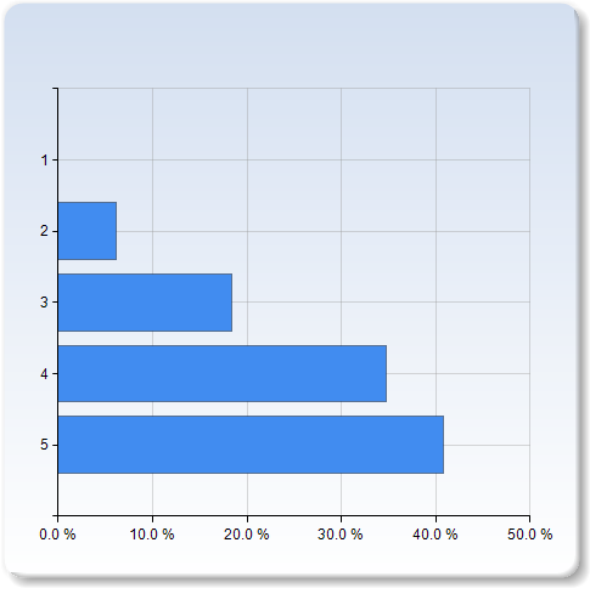
I have received valuable feedback from my teacher /teachers during the course.	Number of Responses
1	7 (14.9%)
2	4 (8.5%)
3	15 (31.9%)
4	12 (25.5%)
5	9 (19.1%)
Total	47 (100.0%)



	Mean	Standard Deviation
I have received valuable feedback from my teacher/teachers during the course.	3.3	1.3

The course had a reasonable workload.

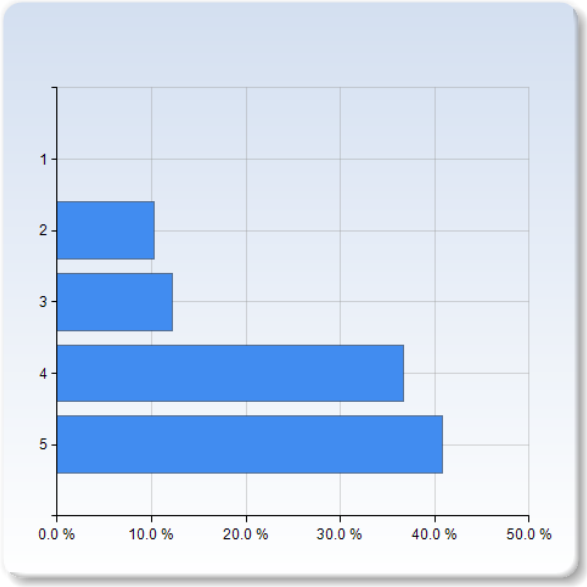
The course had a reasonable workload.	Number of Responses
1	0 (0.0%)
2	3 (6.1%)
3	9 (18.4%)
4	17 (34.7%)
5	20 (40.8%)
Total	49 (100.0%)



	Mean	Standard Deviation
The course had a reasonable workload.	4.1	0.9

The workload was evenly distributed throughout the course.

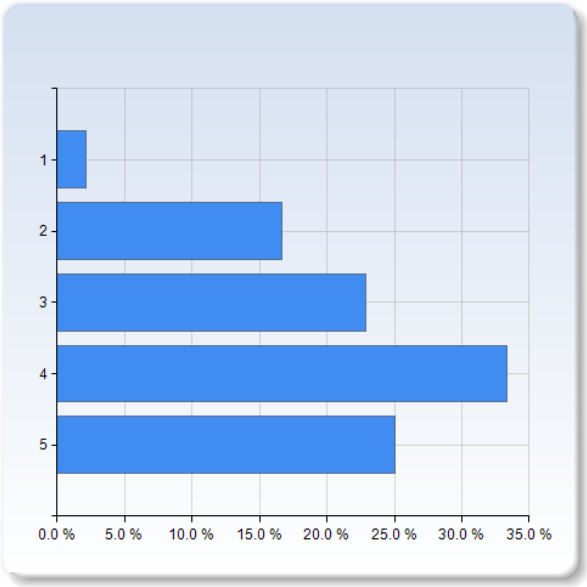
The workload was evenly distributed throughout the course.	Number of Responses
1	0 (0.0%)
2	5 (10.2%)
3	6 (12.2%)
4	18 (36.7%)
5	20 (40.8%)
Total	49 (100.0%)



	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.

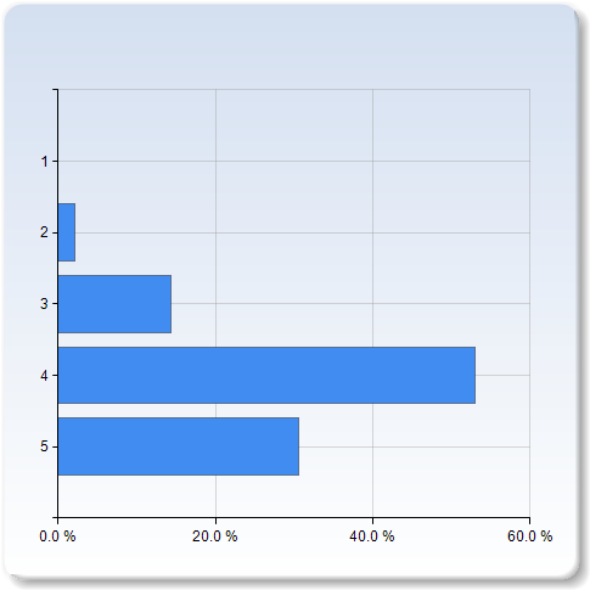
The examination matched the contents and level of the course.	Number of Responses
1	1 (2.1%)
2	8 (16.7%)
3	11 (22.9%)
4	16 (33.3%)
5	12 (25.0%)
Total	48 (100.0%)



	Mean	Standard Deviation
The examination matched the contents and level of the course.	3.6	1.1

Overall, I am satisfied with the course.

Overall, I am satisfied with the course.	Number of Responses
1	0 (0.0%)
2	1 (2.0%)
3	7 (14.3%)
4	26 (53.1%)
5	15 (30.6%)
Total	49 (100.0%)



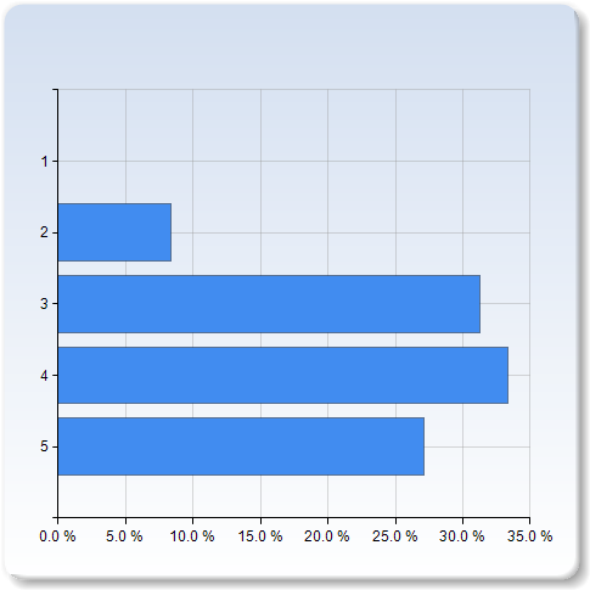
	Mean	Standard Deviation
Overall, I am satisfied with the course.	4.1	0.7

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.

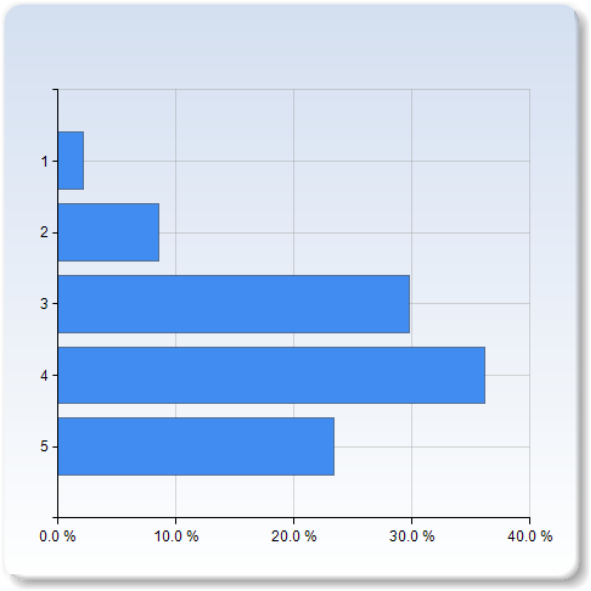
The course has increased my ability to read a mathematical text.	Number of Responses
1	0 (0.0%)
2	4 (8.3%)
3	15 (31.3%)
4	16 (33.3%)
5	13 (27.1%)
Total	48 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to read a mathematical text.	3.8	0.9

The course has increased my ability to communicate the subject in writing.

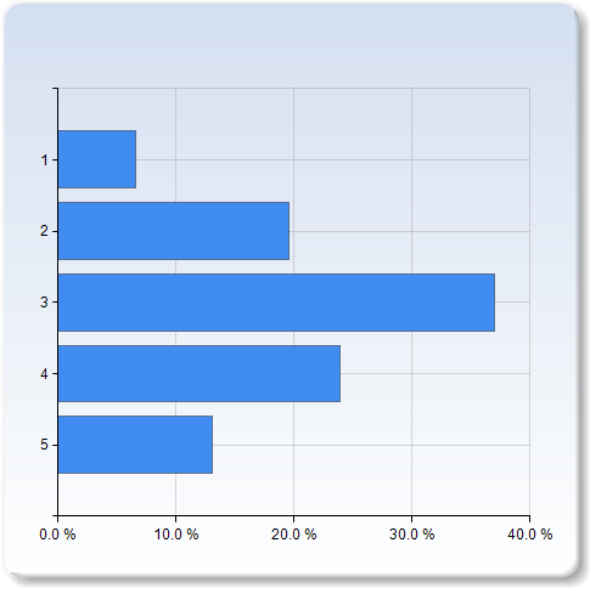
The course has increased my ability to communicate the subject in writing.	Number of Responses
1	1 (2.1%)
2	4 (8.5%)
3	14 (29.8%)
4	17 (36.2%)
5	11 (23.4%)
Total	47 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to communicate the subject in writing.	3.7	1.0

The course has increased my ability to cooperate.

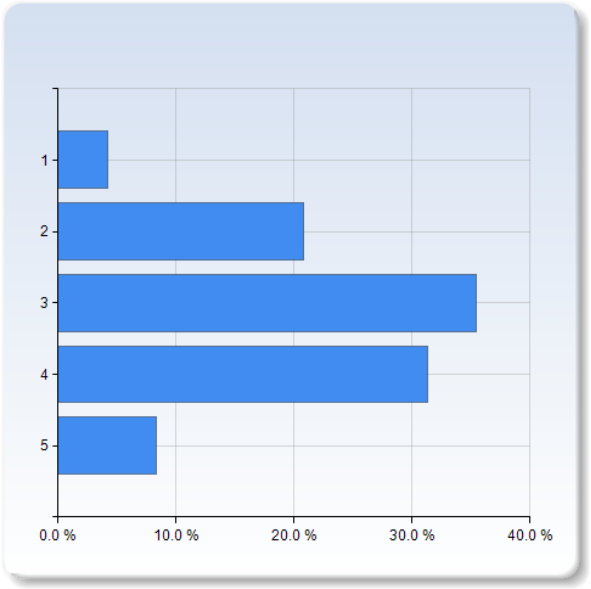
The course has increased my ability to cooperate.	Number of Responses
1	3 (6.5%)
2	9 (19.6%)
3	17 (37.0%)
4	11 (23.9%)
5	6 (13.0%)
Total	46 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to cooperate.	3.2	1.1

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

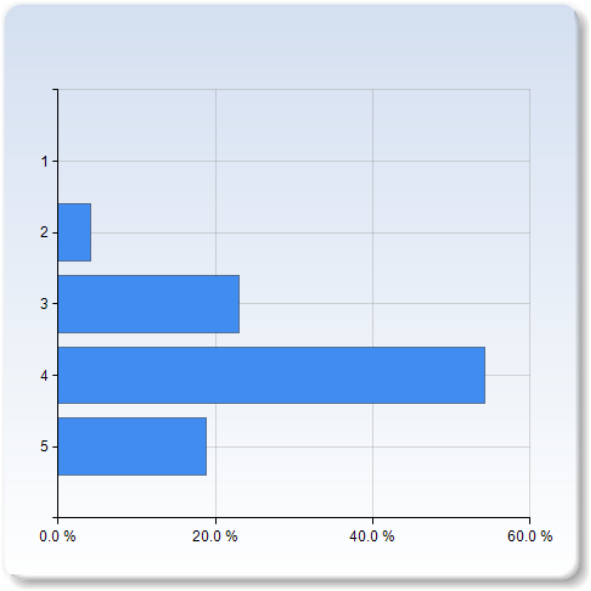
The course has increased my ability to search and process information.	Number of Responses
1	2 (4.2%)
2	10 (20.8%)
3	17 (35.4%)
4	15 (31.3%)
5	4 (8.3%)
Total	48 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to search and process information.	3.2	1.0

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

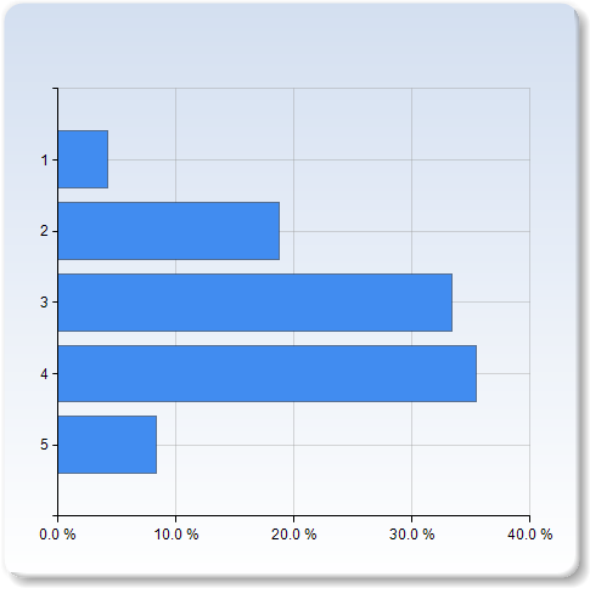
The course has increased my ability to analyze and solve problems.	Number of Responses
1	0 (0.0%)
2	2 (4.2%)
3	11 (22.9%)
4	26 (54.2%)
5	9 (18.8%)
Total	48 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to analyze and solve problems.	3.9	0.8

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	2 (4.2%)
2	9 (18.8%)
3	16 (33.3%)
4	17 (35.4%)
5	4 (8.3%)
Total	48 (100.0%)



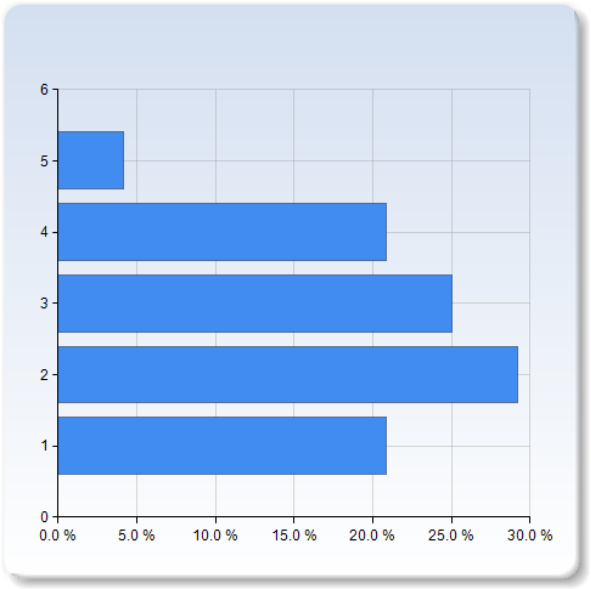
	Mean	Standard Deviation
As a result of this course, I feel confident about tackling unfamiliar problems.	3.3	1.0

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 via Zoom worked fine for me.

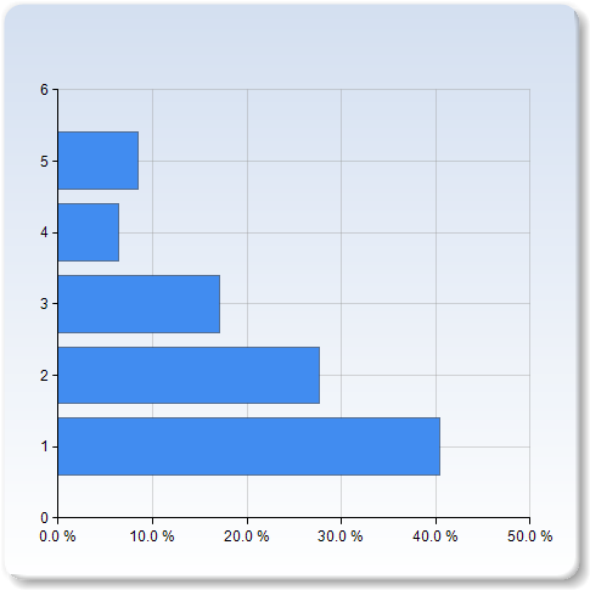
Following the lectures via Zoom worked fine for me.	Number of Responses
	2 (4.2%)
	10 (20.8%)
	12 (25.0%)
	14 (29.2%)
	10 (20.8%)
Total	48 (100.0%)



	Mean	Standard Deviation
Following the lectures via Zoom worked fine for me.	3.4	1.2

Following the seminars via Zoom worked fine for me.

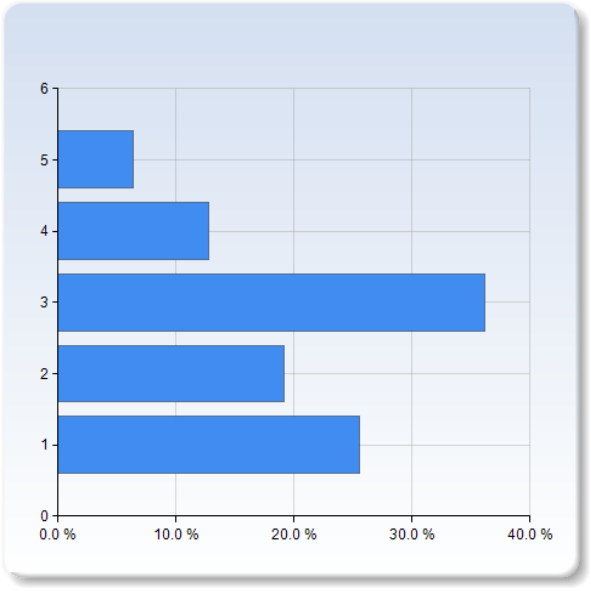
Following the seminars via Zoom worked fine for me.	Number of Responses
	4 (8.5%)
	3 (6.4%)
	8 (17.0%)
	13 (27.7%)
	19 (40.4%)
Total	47 (100.0%)



	Mean	Standard Deviation
Following the seminars via Zoom worked fine for me.	3.9	1.3

Participating in the written examination via Zoom worked fine for me.

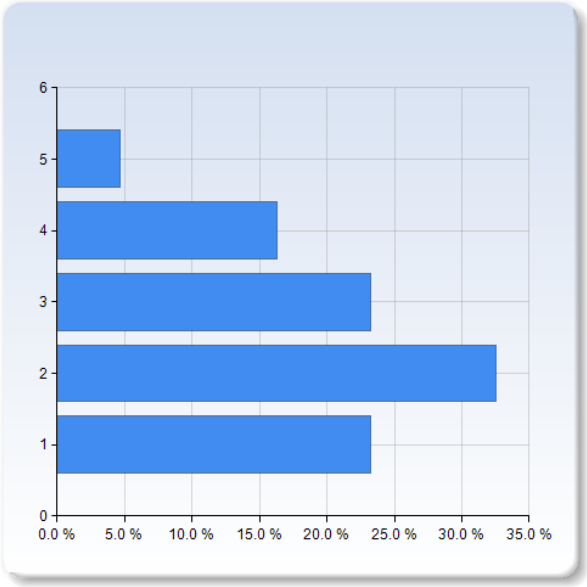
Participating in the written examination via Zoom worked fine for me.	Number of Responses
	3 (6.4%)
	6 (12.8%)
	17 (36.2%)
	9 (19.1%)
	12 (25.5%)
Total	47 (100.0%)



	Mean	Standard Deviation
Participating in the written examination via Zoom worked fine for me.	3.4	1.2

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

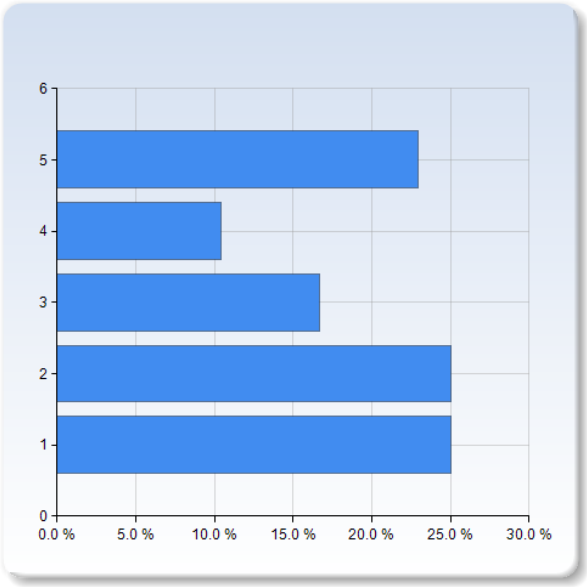
Collaborating with the other students in my assignment group worked well.	Number of Responses
	2 (4.7%)
	7 (16.3%)
	10 (23.3%)
	14 (32.6%)
	10 (23.3%)
Total	43 (100.0%)



	Mean	Standard Deviation
Collaborating with the other students in my assignment group worked well.	3.5	1.2

Online teaching has had a negative impact on my studies.

Online teaching has had a negative impact on my studies.	Number of Responses
	11 (22.9%)
	5 (10.4%)
	8 (16.7%)
	12 (25.0%)
	12 (25.0%)
Total	48 (100.0%)



	Mean	Standard Deviation
Online teaching has had a negative impact on my studies.	3.2	1.5

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.)

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.)
I think the lectures were a bit too complex. Too long proofs and I didn't really understand them, and too much writing the same thing as the powerpoints. Since the proofs weren't important for our exam, i didn't quite understand why we spend so much time on them while we could have them as our own exercises and focus on computational stuff on the lectures. The seminars were nice, but we didn't really have to do anything, they just solved exercises. It would've been better if they were like the Problem sessions in analysis where students present solutions etc..
I feel less motivated with online learning, as the line between free time and studying is blurred.
I attended every lecture on campus (as long as there were spots free which there always was). I tried once to follow the lecture via zoom but it didnt work for me at all due to having a hard time focusing. I perceived some issues when i watched it on zoom, it was hard to see what was written on the blackboard and also hard time to keep up. The keeping up part was not a problem when i was at lectures on campus. I stopped attending lectures a while ago and the issues might have gotten better over time but since i didnt watch them i dont know.
People the talk during the exam in Zoom disturbed my concentration several times. Becues my fear not beeing able to turn in on time I mistok what time it were and lost 30min trying to turn in. Teacher-students did not have any collabroation assignments at all.
I do have to say that it was sometimes hard to find structure in studying. We get a lot of freedom and we have to manage our time pretty much on our own. Especially because this was the first time at a university for me (and for many others), it was hard to know when/how to study and when it was enough.
The hybrid variant was very nice, to be able to go to campus some days. It is harder to find the structure of studying when sitting at home all the time. I also really missed meeting my fellow course mates.
I had problems knowing when to study. Normally when I get up in the morning and go to school it is clear that from the moment I arrive in school to the moment that I leave, it is time dedicated to studies. However, when I simply stay at home all day that clear distinction disappears.
It was hard in the beginning to concentrate and follow every step that teacher was explaining but later I got used to it. Both lectures and seminars worked good for me.
Personally I have more focus if I attend the lectures on campus
Zoom lectures I do not like in general, however we had no choice. It worked ok but I would choose a normal lecture everyday if I were to choose. It is sometimes hard to concentrate during online education, especially during the exam. Eventually find a better way to do ID-checks. I am aware that this is new for everyone so I understand it is hard to satisfy everyone.
I would have prefered campus seminars with more interactions. I am aware of the limitations because of covid.
Ability to concentrate was proportional to my motivation which entails the drive functioned solely to energize responding, drive was not responsible for initiating, or maintaining the direction of action to consist of both a goal-directed, directional component and an arousal, activational component. This is the framework of motivation still in my use, such that if motivation were a vector (i can relate to that)—its length would represent the amplitude, or intensity of pursuit, and the angle of the vector would represent its focus on a specific goal. In this analogy, a motivation vector affected by apathy might have a reduced length in all directions and a motivation vector affected by addiction might have an increased length and a less flexible direction. and addiction is bad but maths is fun just like the vector space oohhh HAMILTON calling!
Following the lectures online is very difficult, not only because of the technical issues but also because i struggle to keep my concentration and focus, and also I feel that it is difficult to ask questions via zoom
No comments.
Online teaching hugely affects the education of the student, and in a strictly negative way, with regards to motivation, concentration, learning outcomes and generally enjoying one's time at the university. This is unavoidable and unfortunate. We should hope that Covid-19 can be handled differently soon and try to offer as many on-campus and in-class activities for students as possible until then.
Online examination was a struggle in terms of concentration and submission.
Due to my living environment, it's difficult for at times to focus completely during the online lectures, seminars.
It's extremely hard to concentrate on a two hour lecture from home. It's much more hard to understand and self-learn difficult stuff when you're no able to be on campus and communicate with classmates. It's very hard to stay motivated when you know everything is recorded and your able to procrastinate, although it was appreciated. (det finns två sidor av varje mynt)
Could concentrate fine but it was noticeably harder to find motivation compared to on campus
A bit harder to concentrate. But the ability to be able to re-view lectures was very helpful! Group-assignments during online-learning was inconvenient.
I felt very lonely and had trouble getting up in the morning. My motivation was hard to keep up
Motivation was lower overall of course...
Due to online teaching, but also in general the pandemic, its been harder to find structure, evne though ive attended all classes and seminars both online and on campus. I think its difficult to know what to expect, because you never know if youre supposed to be in school or at home (when we had the revolving schedule). I think i would have prefered one week in school, and one week at home, just for the consistency of knowing where to be. Also I feel like havent talked to anyone in the class. The poeple in my assignment group ive talked to, but it has not been possible to socialize naturally. I know that is what you cannot do due to covid, but i just started a bachelors programme and i know no one. Also this means, that I have basically done this whole course without help from classmates, and Im sure this is true for a lot of people.
I enjoy inline teaching as I can be a bit more flexible but I do miss the human interaction. Also, I had some troubles with technology during the online exam, I had to tilt my laptop screen to show what I was writing but couldn't see the screen (with the exam questions) that well as a result. I also struggled to convert my pictures into PDF.
I have found it very hard to focus when not on campus. It did however feel much easier to ask questions in the chat instead of speaking up during a lecture.
I don't know to what extent you can actually change this, but I definitely struggled with online teaching. I find it harder to focus during lectures and seminars, and I retain significantly less information. It also takes more energy to motivate myself to get my work done, especially since I work better in an environment that isn't my room. Overall I don't have any major complains about how the online teaching was conducted, this is more to say that it still has a pretty big impact on my learning.
The worse impact is the lack of the concentration that we can have during lectures and seminars. And also it reduces the collaboration between students.
I think online learning is future especially when as I study mathematics. On need to be better in doing the online format. But it is first time and everybody har to learn. Would be nice if there could be a open hours discussion forum set ex. every day as have been tried but been cancelled I think.
My ability to concentrate during these weeks has been difficult. Especially the lectures were hard to follow because of lack of time writing down the calculations from the black boards before the teacher switched to the next black board (if you are on campus you are able to see three boards at the same time, compared to online when you only were able to see one board at the time)
Because of online learning I feel that I have had a negative experience that has been outside of your control. Regardless, the one thing that I think would have helped with the online learning is more homework.

What did you appreciate most with the course?

What did you appreciate most with the course?
The assignments were really good, i learned a lot.
I appreciated the assignments as a way to test my knowledge every once in a while.
I LOVED that it was so much problem solving. The way I learn is through solving problems over and over until i get it and i really felt like i got that possibility, both through the lecture notes and thanks to old exams. The seminars when the phd students went trough all problems really helped me to understand and i could always go back and get help from that when i got stuck.
Understanding the fundamentally work with vectors in a 3d space.
The SI-meetings were very helpful. It is a good idea to attack problems with other students under supervision so we can ask questions when one is stuck.
I had allready done quite some linear algebra, but I enjoyed the deep dive into some of the proofs, as well as the second degree curves and how quite often topics was aluded to the connection to linear spaces and such.
I think that Anna-Maria has a very clear teaching method and I appreciate the efficiency during lectures.
The general structure of the course makes it easy to follow and study.
The maths itself
Recordings, i had some doctors apointments and i couldnt attend the lectures, but the recordings helped me afterwards.
I appreciate everything especially seminars because in the exam we had to do a lot of calculations so it prepared me to do them faster and get used to every kind of problem.
Matrices
The material was interesting.
I hope that online education will become a normal part of university education. I listened to all the lectures on 1.5 speed and was able to skip the boring parts. Not being forced to interact with other students was also a huge plus.
I really do like the way our seminar teacher worked with us on understanding the problems and the way our SI teachers had "games" to make us remember the basics before each SI class. I would still have prefered the seminars to be on campus tho.
time. i appreciate time.
Seminars and SI-meetings were extremely beneficial to me!
Good assignments.
We had a great lecturer!
The quality of the seminars.
Seminars.
The course could be followed entirely online.
Seminars in two different language and the solutions being posted. Clear information and planning.
How hard the teachers worked to try and make the online thing work
Very good lecture-notes! (The book)
I honestly didn't like it very much. But I wouldn't have liked any course. I feel burnt out
Henrik was really great in the seminars!
The seminars. They were great when trying to really understand why we did everything we did when solving a problem. Frei especially was really pedagogical and really took the time to explain everything whenever someone had a question. The lecture notes where great, very clear and structured. The exercises were also good. The assignments were great, evne though it is a lot of work, i think it was very important to see examination-problems and practice. Because i wouldnt have done that by myself. When the time came for the exam I felt pretty comfortable thanks to the assignments.
I appreciated that there were a lot of exercises with solutions which I could use to understand the topics further.
I think the online seminars worked pretty well, and I also really enjoyed the group work.
The knowledge of the teacher and teacher assistants and they really tried to help students as quickly as possible during the course.
The good TA and teacher way of teaching
I appreciated the seminars and SI-meeting a lot. The seminar teachers were very good at explaining and adjusted incredibly well to all the online sessions. There were almost never any technical issues. The only thing I would like to bring up is the lack of interaction between the students, but that's of course due to the pandemic, so I think it all were handled in a very good way. The SI-meetings were also very good, especially since they were held on campus. I only attended them in the later part of the course, but when I did, I really enjoyed it and felt more confident after being able to discuss problems with fellow students.
N/A

What do you think should be improved?

What do you think should be improved?
The lecture notes. They weren't that good. It would've been better if we had better linear algebra books.
I think the zoom lectures could be improved, as it is easy to miss things written on the board. Most often, this is due to poor video quality over zoom, which can perhaps be fixed by using a digital writing pad, like the one Jan-Fredrik uses.
I feel like the lecture notes/the swedish books (they're just the translation of each other) didn't have everything i needed. I always had to look up stuff on google to be able to solve the different exercises. For example, sometimes the lecture notes went through something and then the exercises came and there was no information on how to approach the problem. Of course the lecture notes is not supposed to have all methods and you're supposed to figure things out yourself, but some exercises I can't solve with the information in the lecturenotes even if i go back to old chapters now after the exam.
More specific information that is easy to access. The rutins for online exams.
I feel lecture notes are unstructured and I have a bad overview of the course material As a introduction I feel there is lack of mention about vector spaces, general solutions, particular and homogenous I am just not sure what the aim of the course was, it feels like algorithmic pattern learning
The lectures where very helpful, but sometimes the focus was more on the proves than on really saying how we can apply the material on problems. It is very interesting to see where a theorem comes from but proof notation looked a bit abstract to me in the beginning and therefore I was not concentrated when we would discuss prolem solving (what we actually have to do on the exam). Maybe find a compromise between that.
Maybe give the projection formula a bit more room? I know it is a fairly easy consequence, but many of the people I studied with did not know how to handle projections.
Sometimes the lecture pace seemed a little problematic. While I think that we generally covered a good amount of theory per week, it sometimes felt like zoning out for a very short amount of time during lectures led to feeling completely lost due to the sheer amount of information that could be written on the board in the meantime, which in turn could lead to just giving up on following the rest of the lecture at all.
The participation of the students in the problem seminars.
To not be so abstract when introducing new content
Interaction with the online students and clear writing on the boards as sometimes we cannot see on the screens what has been written and cherry on the cake is when we have bad wifi once in a while. Then the writing looks like dancing ants. The seminars were perfect on that end.
I think that we had very easy exercises in the lecture notes compared with those in exam. But those in assignments were similar to exam's problems. In my opinion it will be better if we had more long exercises just to get used with the style of problems that will appear in the exam. Otherwise, everything worked fine.
The things that can improve is what the course would be without corona restrictions (more lectures on campus).
The course literature! Grammar mistakes and unclear sentences more often than I thought.
Stop copying things from the slides to the board during the lecture. Instead, focus on solving more problems during the lectures.
I dont really know how to improve since first of this is the first time i study in 15years basically and for onlineteaching.... well im unexperienced in that aswell.
everything. cause in a world complicated, meaning can only be improved by improving everything or anything for that matter.
I feel that a lot of energy was put on proving this and that, and while I understand why we are shown this, I still feel that it did not contribute much to my learning, but rather confused me
Exam questions to match the level of the exercises, or the other way around.
There should be more material for advanced students. Non-obligatory and outside of the lectures (which should remain accessable for everyone as they are, of course). The SI-sessions were not valuable for advanced students this year, which is ok (they were great for other students!), but there should at least be some further reading material offered for ambitious students.
It would be appreciated if the lectures are organized a little bit more.
The examination method is primitive. Students should be evaluated through individual/group assignments throughout the course. Exams, although common, are primitive. Trying to make exams online in the old-fashion way is even worse. I recommend increasing take-home assignments and eliminating the exam.
I think for online lectures and seminars tools like geogebra could have been used more, to help visualize concepts, especially when involving planes, spheres and lines.
The course should be more focused on the process and methods of solving problems rather than proving statements. because thats what we are getting examinated on.
Group-assignment in this course felt a bit unnecessary, they are already a part of the other course. Maybe just the exam for this would be better, with a minor exam in the middle of the course instead. Would help to be up to date with the course material.
More emphasis on applying the theory in the lectures. Instead of applying it a couple of days later which made it harder to understand and apply.
I need more face to face discussions about the topics to keep me motivated. For my learning I would have liked more assignments
The lectures never ended on time. The topics were always relevant and interesting and all. But when you never get a break nor end on time it is hard to keep the focus since you dont know for how long youll have to. I feel like this could have been planned before, and also the actual teaching usually never started until 5-10min after the lecture started. We should have begun at 10:15 but usually started at 10:20 ish. And then we finished at like 12:15-12:30 and everywhere it says that we are supposed to finish at 12. If that wasnt the case, then I feel like someone should have told us.
The only thing I can think of is that it would be helpful if the past exam solutions could all be uploaded in english. I know that they are conducted in Swedish every two semesters, but since it is the main way to study for the exam and check if you actually understand the courseload it would have been nice not having to translate some of the solutions. Especially since my Swedish isn't that good yet.
The textbook and lecture notes can be improved definitely if they contain more solved examples and exercises as hard as the exam questions.
Group work could be better
I think the lectures could be held in a slightly different way. I felt that we always were short on time and had to save powerpoint slides for the next lecture and so on. I think this mostly were because of a lot of handwriting on the black board. Throughout the whole course I felt that the teacher wrote a lot of things on the board that already were said in the powerpoint. I mean it is good to clarify things, but then maybe by referring to the powerpoint verbally instead of writing it all on the board once again.
I think the order the topics were presented in was confusing. Consider another order.

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

Have you during this course experienced course literature, staff or teaching methods to be discriminatory in any way (gender, ethnicity, etc.)?
No.
No, I felt that all teachers and teaching methods were fair.
Nope, I really felt like Anna-Maria (which was the only staff I actually talked to) was really understanding of my situation and i really felt like she wanted to help me in every way she could when i reached out to her for something regarding material/personal issues.
No.
No, the universtity has been a very good environment for me.
No direct discrimination, but the usual, that guys take up much more space in the classroom when asking or answering questions than girls.
Not at all.
No, never
No
No, I did not experience anything like that
No.
This gender blah blah blah thing is one of the reasons you are falling behind in world ranking and why Sweden is becoming a joke among international students. Stop focusing on crybabies and focus on learning people math.
No
nope. just Swedish way of treating everyone equal and of course hierarchal in the unconscious sampling of adequacies.
No, if anything I feel the opposite! Really encouraging to have a female professor when it can be somewhat intimidating to be one of few girls in the class!
No.
No.
N/A
No
No
NO
Not at all
No
no
No!
No.
Not that I can think of
No not at all
No not at all. I am tired of hearing this all the time. Clearly NO.
No.
No