LUNDS
UNIVERSITET

Matematikcentrum
Matematik NF

Compilation report for Linear algebra 2, spring 2020

Module leader: Kjell Elfström
Other teachers: Peter Meisrimel, Arne Meurman, Lea Miko Versbach, Tien Truong.
Number of students: 106.
Grades in the original examination: 19 V, 46 G, 11 U

Evaluation

Compilation of the evaluation: See the following pages.
Teacher's comments: Judging from the diagrams, the students seem to be pleased with the module. More so than the last time. The students were a bit more pleased with the assignments and the ability they were given to communicate the subject orally, to cooperate and to analyse and solve problems. They were less pleased with the examination this time. I do not know if that has anything to do with the fact that it was a take-home examination owing to the Corona virus.

There were many positive free-text comments. The teachers were good, the literature was good, the lectures and the seminars were good and the programming project was good.

Among the negative comments we find one complaining about the programming project. That student expected to see more of the supervisors of the project and complained about the lack of information.

A lot of proofs, which is fine, but we were not prepared for that. I do not object to this. It can very well be so. Train the students to prove theorems at an earlier stage.

The course missed the geometric intuition behind matrix operations. I do not agree. The students are taught matrices in Linear algebra 1. We first mention matrices in this course for revision purposes. Then we see matrices again in connection with linear transformations such as e.g. projections, reflections and rotations. That is geometry.

Not enough time to write the take-home examination in LaTeX. They were not required to do that. They could write by hand and scan their scripts.

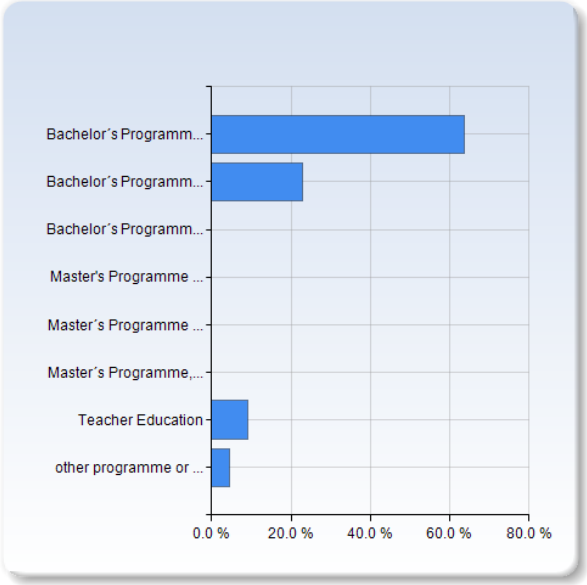
The examination was not related to the contents of the course. The course literature was not satisfactory. I do not know what to say about this. Many of the comments expressed the opposite opinion.
Evaluation of changes since the last time the module ran: The previous evaluation did not cause any changes.
Suggestions for changes prior to the next time the module will be offered: The result of the survey does not call for any change.
Compiler and date of compilation report: Kjell Elfström, 2 April 2020.

MATB22-vt20

Answer Count: 22

I have studied this course as part of

I have studied this course as part of	Number of Responses
Bachelor´s Programme in Mathematics	14 (63.6%)
Bachelor´s Programme in Physics, Theoretical Physics, Astronomy	5 (22.7%)
Bachelor´s Programme, other specialization	0 (0.0%)
Master's Programme in Mathematics	0 (0.0%)
Master´s Programme in Mathematical Statistics	0 (0.0%)
Master´s Programme, other specialization	0 (0.0%)
Teacher Education	2 (9.1%)
other programme or as stand alone course	1 (4.5%)
Total	22 (100.0%)

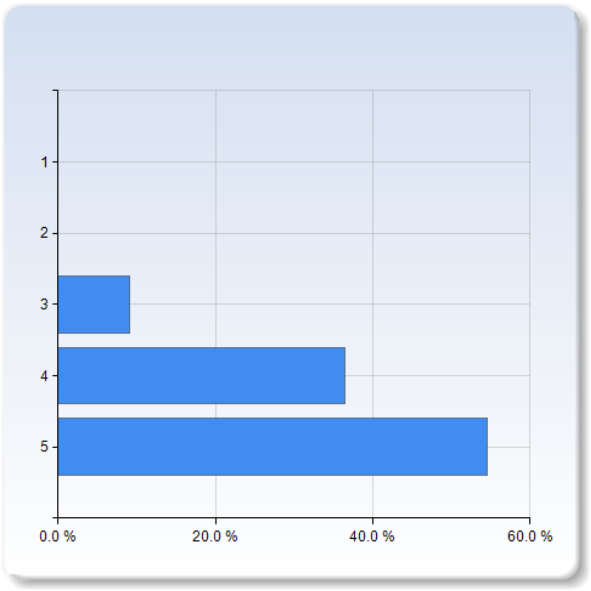


	Mean	Standard Deviation
I have studied this course as part of	2.1	2.2

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

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

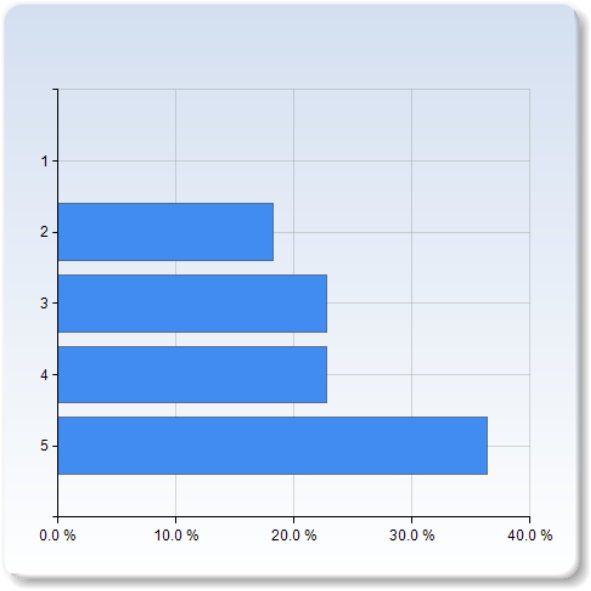
2. My prior knowledge has been sufficient to assimilate the contents of this course.	Number of Responses
1	0 (0.0%)
2	0 (0.0%)
3	2 (9.1%)
4	8 (36.4%)
5	12 (54.5%)
Total	22 (100.0%)



	Mean	Standard Deviation
2. My prior knowledge has been sufficient to assimilate the contents of this course.	4.5	0.7

3. I have participated actively in the course.

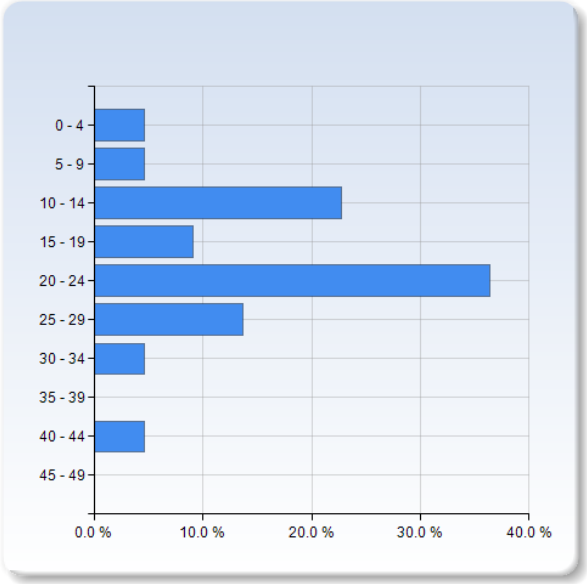
3. I have participated actively in the course.	Number of Responses
1	0 (0.0%)
2	4 (18.2%)
3	5 (22.7%)
4	5 (22.7%)
5	8 (36.4%)
Total	22 (100.0%)



	Mean	Standard Deviation
3. I have participated actively in the course.	3.8	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 - 4	1 (4.5%)
5 - 9	1 (4.5%)
10 - 14	5 (22.7%)
15 - 19	2 (9.1%)
20 - 24	8 (36.4%)
25 - 29	3 (13.6%)
30 - 34	1 (4.5%)
35 - 39	0 (0.0%)
40 - 44	1 (4.5%)
45 - 49	0 (0.0%)
Total	22 (100.0%)



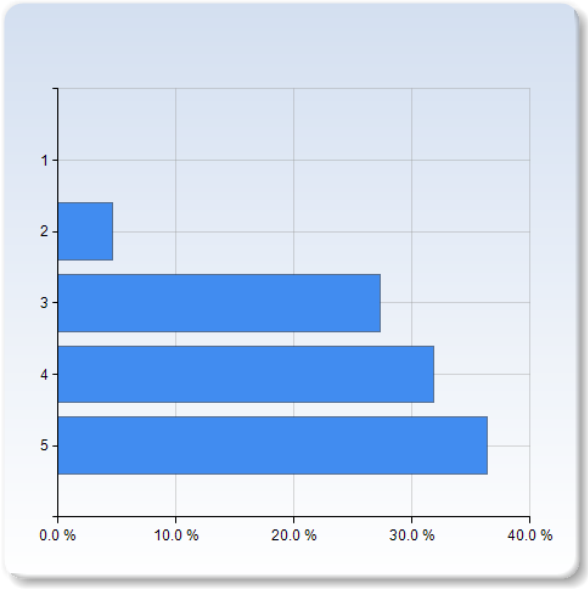
	Mean	Standard Deviation
Average number of hours spent in total on the course per week (including scheduled activities):	17.9	8.6

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 suited me.

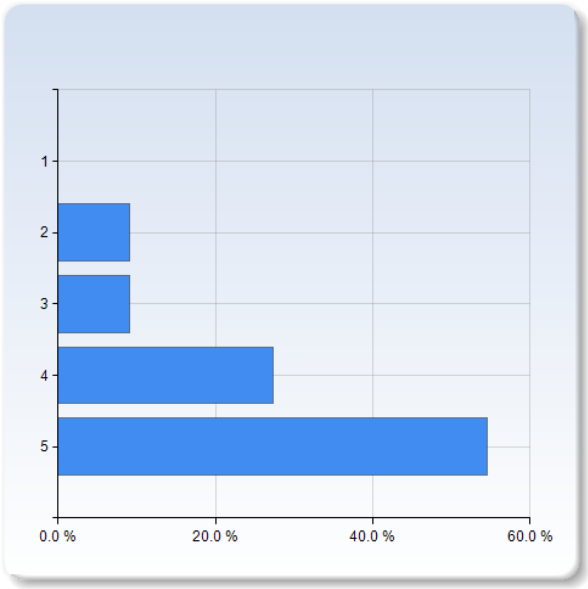
The way the course was taught and organised suited me.	Number of Responses
1	0 (0.0%)
2	1 (4.5%)
3	6 (27.3%)
4	7 (31.8%)
5	8 (36.4%)
Total	22 (100.0%)



	Mean	Standard Deviation
The way the course was taught and organised suited me.	4.0	0.9

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

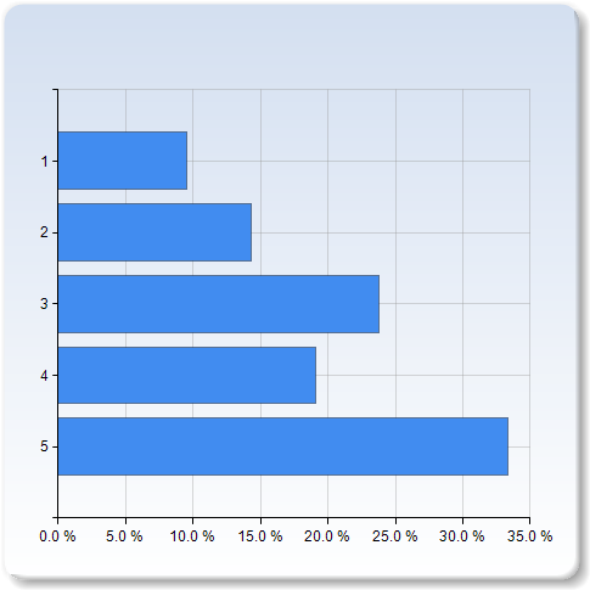
The number of teacher lead activities (lectures, seminars etc.) has been satisfactory.	Number of Responses
1	0 (0.0%)
2	2 (9.1%)
3	2 (9.1%)
4	6 (27.3%)
5	12 (54.5%)
Total	22 (100.0%)



	Mean	Standard Deviation
The number of teacher lead activities (lectures, seminars etc.) has been satisfactory.	4.3	1.0

The lectures were valuable for my learning.

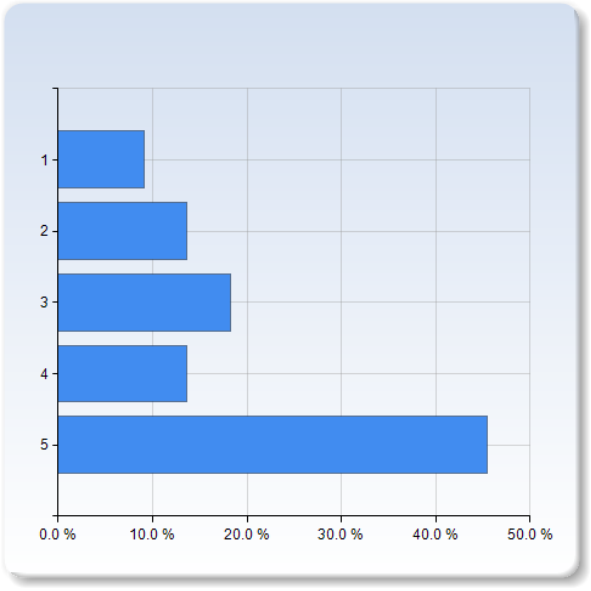
The lectures were valuable for my learning.	Number of Responses
1	2 (9.5%)
2	3 (14.3%)
3	5 (23.8%)
4	4 (19.0%)
5	7 (33.3%)
Total	21 (100.0%)



	Mean	Standard Deviation
The lectures were valuable for my learning.	3.5	1.4

The seminars were valuable for my learning.

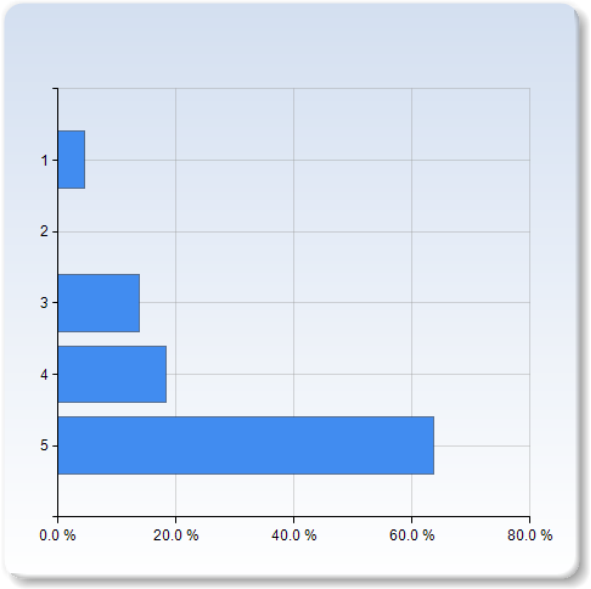
The seminars were valuable for my learning.	Number of Responses
1	2 (9.1%)
2	3 (13.6%)
3	4 (18.2%)
4	3 (13.6%)
5	10 (45.5%)
Total	22 (100.0%)



	Mean	Standard Deviation
The seminars were valuable for my learning.	3.7	1.4

Studying on my own was valuable for my learning.

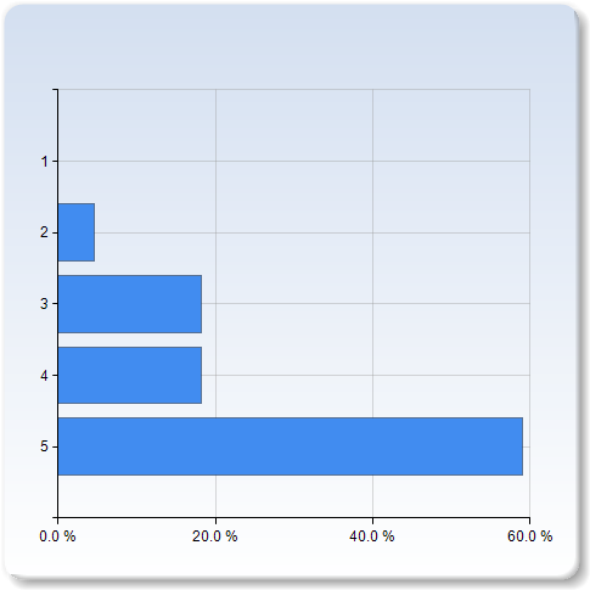
Studying on my own was valuable for my learning.	Number of Responses
1	1 (4.5%)
2	0 (0.0%)
3	3 (13.6%)
4	4 (18.2%)
5	14 (63.6%)
Total	22 (100.0%)



	Mean	Standard Deviation
Studying on my own was valuable for my learning.	4.4	1.0

The course literature/material was a valuable learning resource.

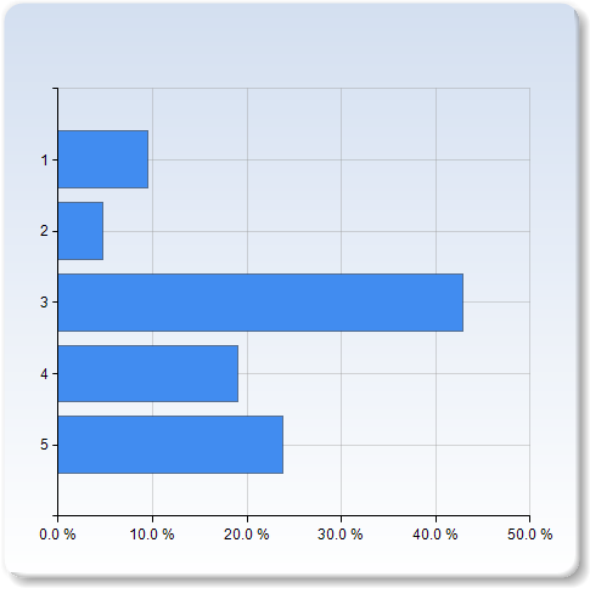
The course literature/material was a valuable learning resource.	Number of Responses
1	0 (0.0%)
2	1 (4.5%)
3	4 (18.2%)
4	4 (18.2%)
5	13 (59.1%)
Total	22 (100.0%)



	Mean	Standard Deviation
The course literature/material was a valuable learning resource.	4.3	0.9

The assignments were valuable for my learning.

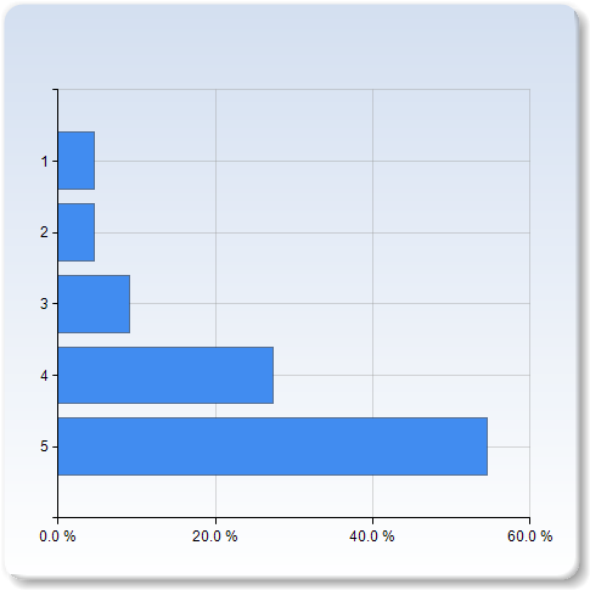
The assignments were valuable for my learning.	Number of Responses
1	2 (9.5%)
2	1 (4.8%)
3	9 (42.9%)
4	4 (19.0%)
5	5 (23.8%)
Total	21 (100.0%)



	Mean	Standard Deviation
The assignments were valuable for my learning.	3.4	1.2

The information I received before the course start was satisfactory.

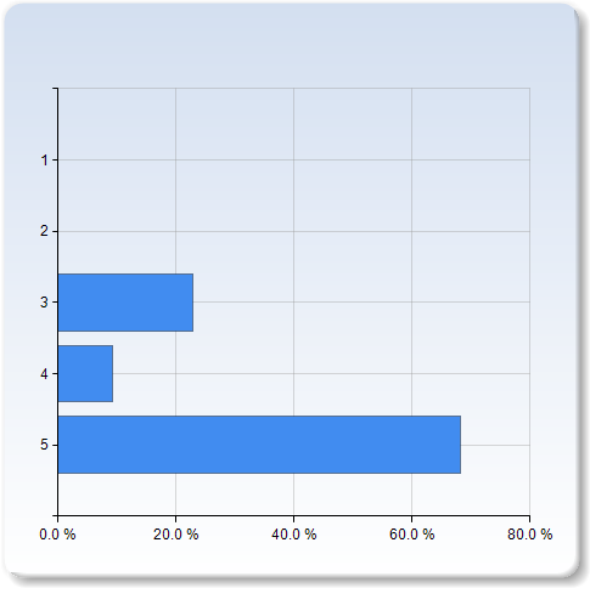
The information I received before the course start was satisfactory.	Number of Responses
1	1 (4.5%)
2	1 (4.5%)
3	2 (9.1%)
4	6 (27.3%)
5	12 (54.5%)
Total	22 (100.0%)



	Mean	Standard Deviation
The information I received before the course start was satisfactory.	4.2	1.1

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

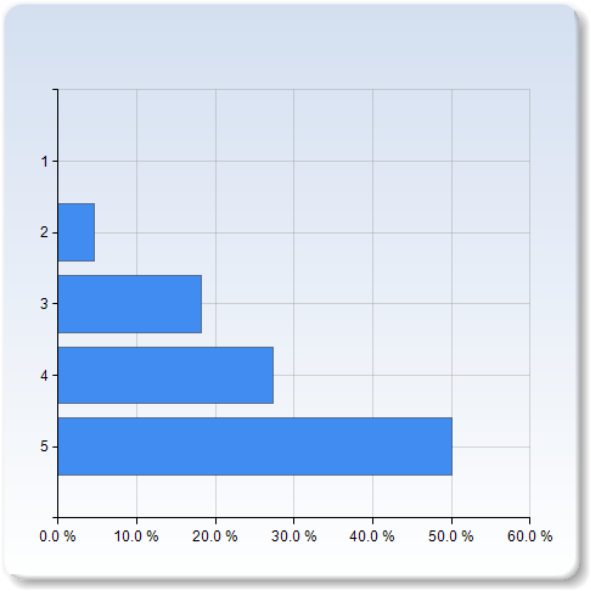
The communication with the teaching staff during the course was good.	Number of Responses
1	0 (0.0%)
2	0 (0.0%)
3	5 (22.7%)
4	2 (9.1%)
5	15 (68.2%)
Total	22 (100.0%)



	Mean	Standard Deviation
The communication with the teaching staff during the course was good.	4.5	0.9

It was clear throughout the course what was expected of me.

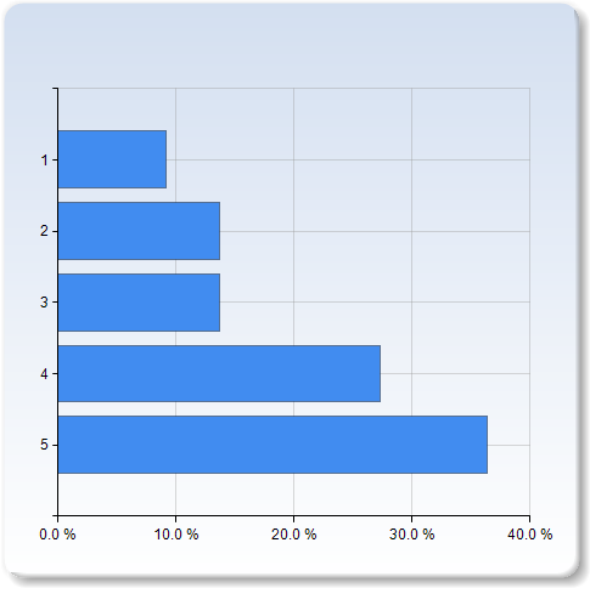
It was clear throughout the course what was expected of me.	Number of Responses
1	0 (0.0%)
2	1 (4.5%)
3	4 (18.2%)
4	6 (27.3%)
5	11 (50.0%)
Total	22 (100.0%)



	Mean	Standard Deviation
It was clear throughout the course what was expected of me.	4.2	0.9

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

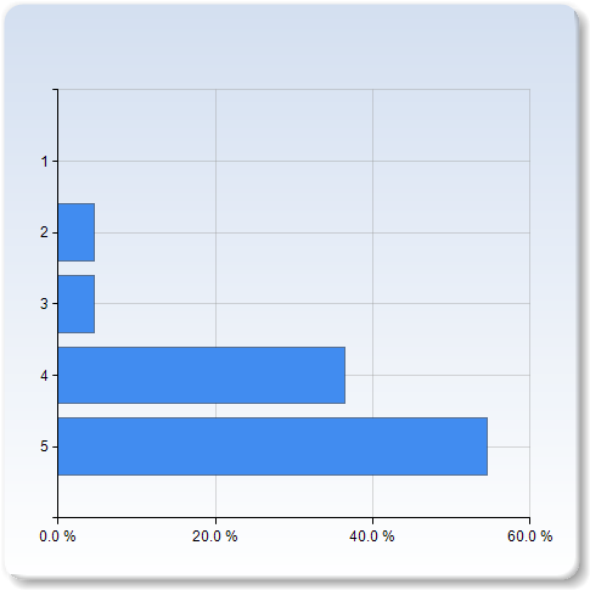
I have received valuable feedback from my teacher /teachers during the course.	Number of Responses
1	2 (9.1%)
2	3 (13.6%)
3	3 (13.6%)
4	6 (27.3%)
5	8 (36.4%)
Total	22 (100.0%)



	Mean	Standard Deviation
I have received valuable feedback from my teacher/teachers during the course.	3.7	1.4

The course had a reasonable workload.

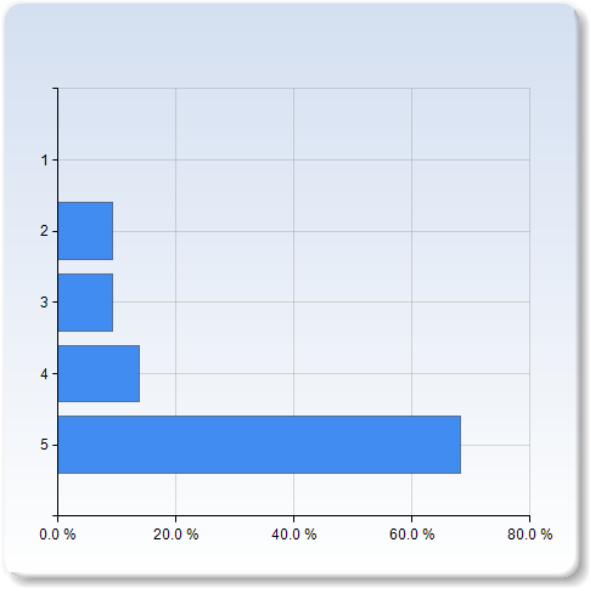
The course had a reasonable workload.	Number of Responses
1	0 (0.0%)
2	1 (4.5%)
3	1 (4.5%)
4	8 (36.4%)
5	12 (54.5%)
Total	22 (100.0%)



	Mean	Standard Deviation
The course had a reasonable workload.	4.4	0.8

The workload was evenly distributed throughout the course.

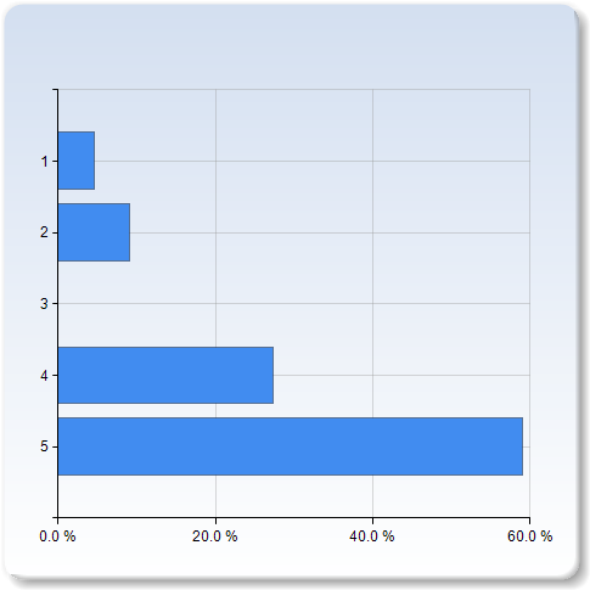
The workload was evenly distributed throughout the course.	Number of Responses
1	0 (0.0%)
2	2 (9.1%)
3	2 (9.1%)
4	3 (13.6%)
5	15 (68.2%)
Total	22 (100.0%)



	Mean	Standard Deviation
The workload was evenly distributed throughout the course.	4.4	1.0

The examination matched the contents and level of the course.

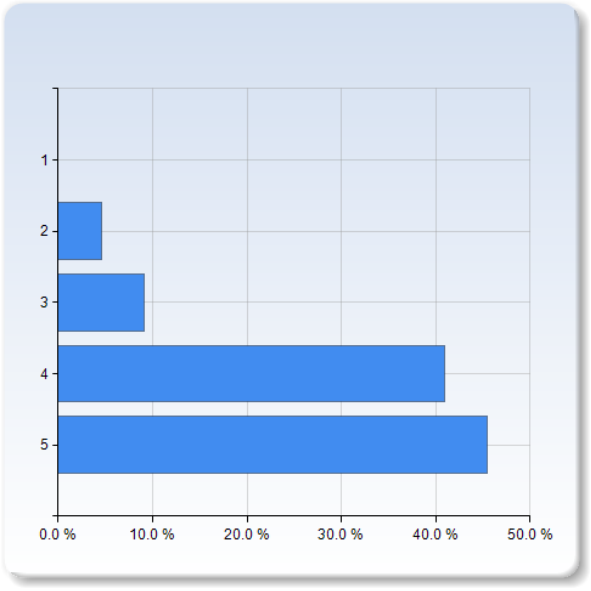
The examination matched the contents and level of the course.	Number of Responses
1	1 (4.5%)
2	2 (9.1%)
3	0 (0.0%)
4	6 (27.3%)
5	13 (59.1%)
Total	22 (100.0%)



	Mean	Standard Deviation
The examination matched the contents and level of the course.	4.3	1.2

Overall, I am satisfied with the course.

Overall, I am satisfied with the course.	Number of Responses
1	0 (0.0%)
2	1 (4.5%)
3	2 (9.1%)
4	9 (40.9%)
5	10 (45.5%)
Total	22 (100.0%)



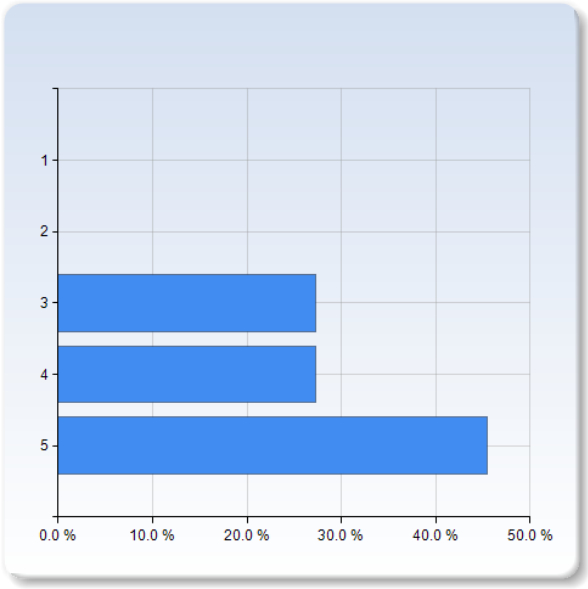
	Mean	Standard Deviation
Overall, I am satisfied with the course.	4.3	0.8

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.

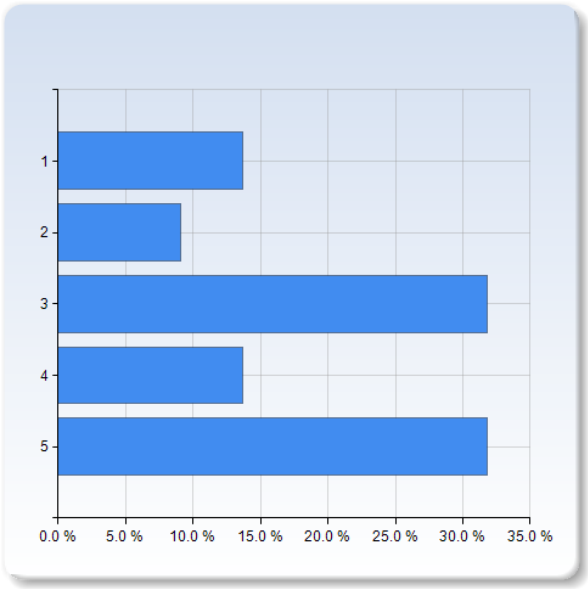
The course has increased my ability to read a mathematical text.	Number of Responses
1	0 (0.0%)
2	0 (0.0%)
3	6 (27.3%)
4	6 (27.3%)
5	10 (45.5%)
Total	22 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to read a mathematical text.	4.2	0.9

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

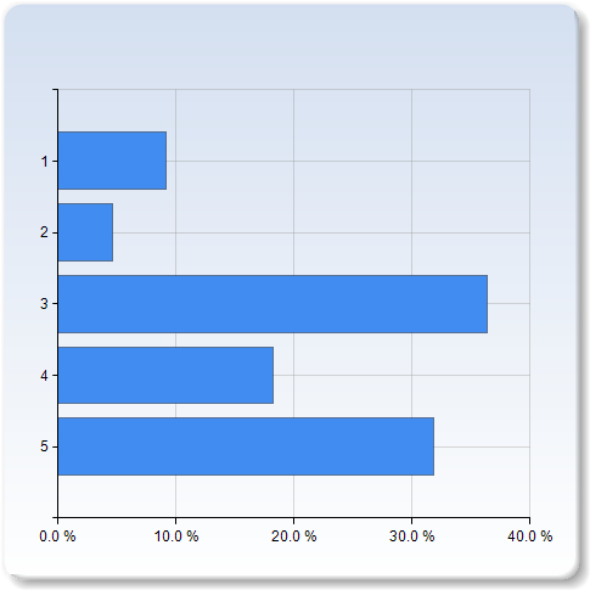
The course has increased my ability to communicate the subject in writing.	Number of Responses
1	3 (13.6%)
2	2 (9.1%)
3	7 (31.8%)
4	3 (13.6%)
5	7 (31.8%)
Total	22 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to communicate the subject in writing.	3.4	1.4

The course has increased my ability to communicate the subject orally.

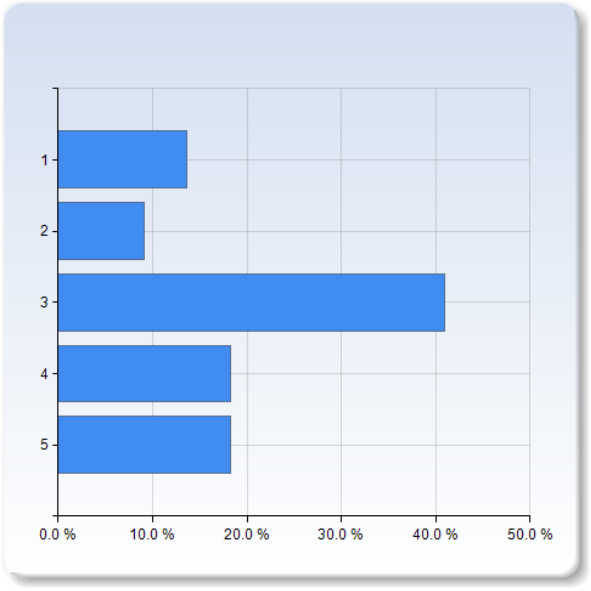
The course has increased my ability to communicate the subject orally.	Number of Responses
1	2 (9.1%)
2	1 (4.5%)
3	8 (36.4%)
4	4 (18.2%)
5	7 (31.8%)
Total	22 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to communicate the subject orally.	3.6	1.3

The course has increased my ability to cooperate.

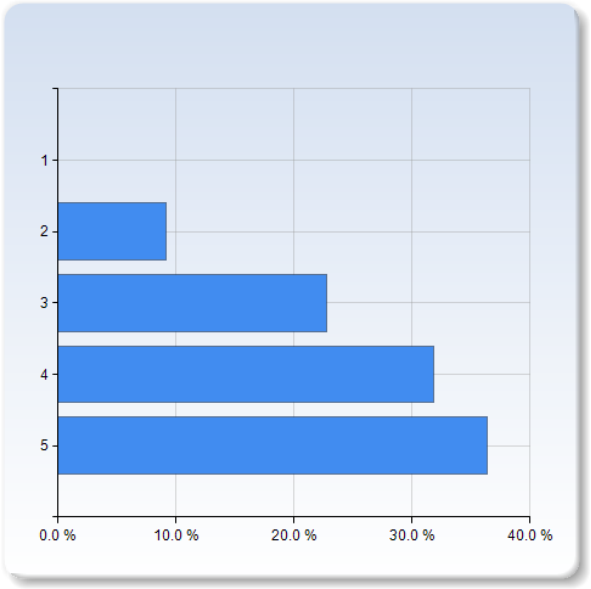
The course has increased my ability to cooperate.	Number of Responses
1	3 (13.6%)
2	2 (9.1%)
3	9 (40.9%)
4	4 (18.2%)
5	4 (18.2%)
Total	22 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to cooperate.	3.2	1.3

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

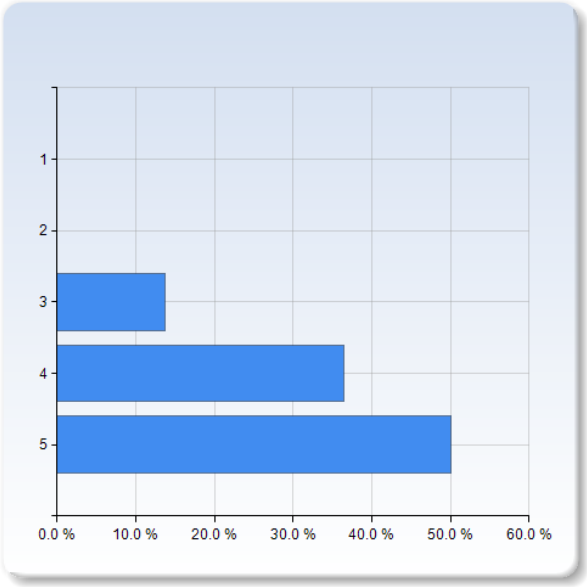
The course has increased my ability to search and process information.	Number of Responses
1	0 (0.0%)
2	2 (9.1%)
3	5 (22.7%)
4	7 (31.8%)
5	8 (36.4%)
Total	22 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to search and process information.	4.0	1.0

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

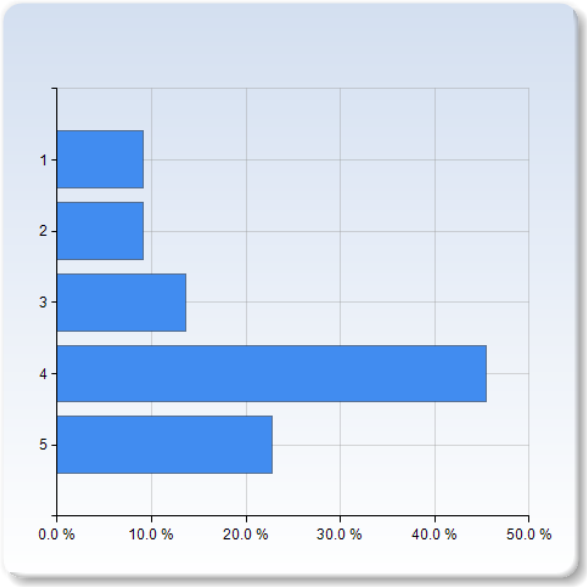
The course has increased my ability to analyze and solve problems.	Number of Responses
1	0 (0.0%)
2	0 (0.0%)
3	3 (13.6%)
4	8 (36.4%)
5	11 (50.0%)
Total	22 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to analyze and solve problems.	4.4	0.7

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 (9.1%)
2	2 (9.1%)
3	3 (13.6%)
4	10 (45.5%)
5	5 (22.7%)
Total	22 (100.0%)



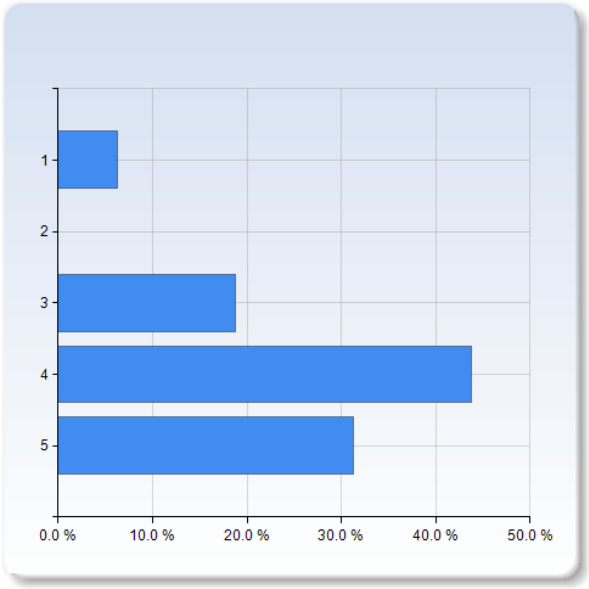
	Mean	Standard Deviation
As a result of this course, I feel confident about tackling unfamiliar problems.	3.6	1.2

On the programming project

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

The programming project is closely related to the course contents.

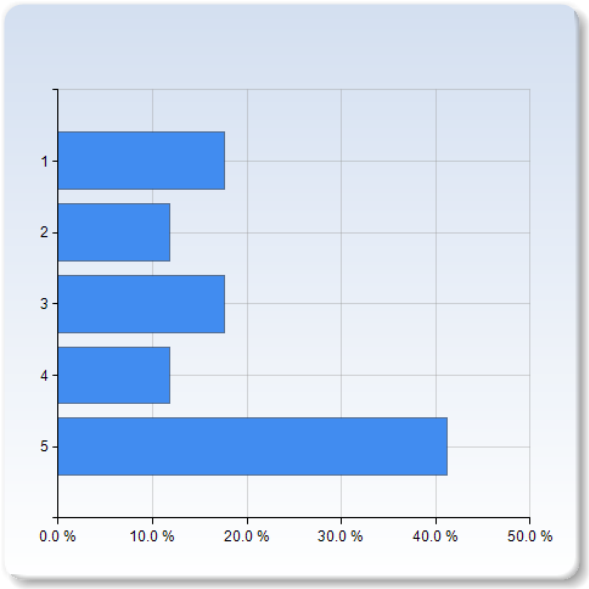
The programming project is closely related to the course contents.	Number of Responses
1	1 (6.3%)
2	0 (0.0%)
3	3 (18.8%)
4	7 (43.8%)
5	5 (31.3%)
Total	16 (100.0%)



	Mean	Standard Deviation
The programming project is closely related to the course contents.	3.9	1.1

Owing to the programming project, I have increased my programming skills in Python.

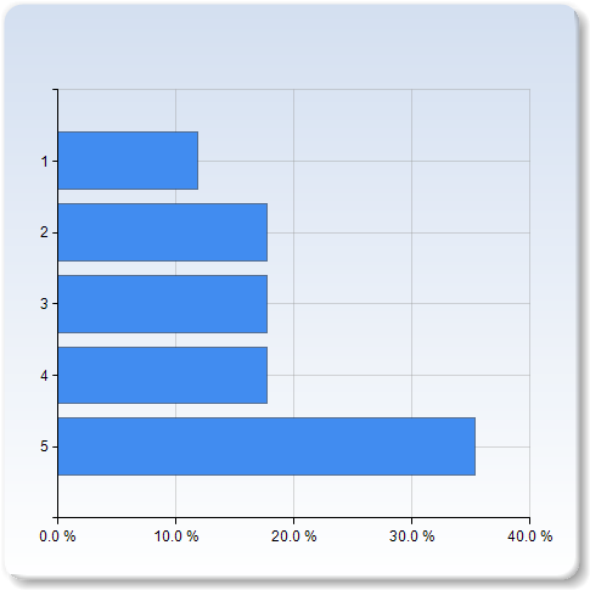
Owing to the programming project, I have increased my programming skills in Python.	Number of Responses
1	3 (17.6%)
2	2 (11.8%)
3	3 (17.6%)
4	2 (11.8%)
5	7 (41.2%)
Total	17 (100.0%)



	Mean	Standard Deviation
Owing to the programming project, I have increased my programming skills in Python.	3.5	1.6

I believe that the programming project has been valuable for my future learning.

I believe that the programming project has been valuable for my future learning.	Number of Responses
1	2 (11.8%)
2	3 (17.6%)
3	3 (17.6%)
4	3 (17.6%)
5	6 (35.3%)
Total	17 (100.0%)



	Mean	Standard Deviation
I believe that the programming project has been valuable for my future learning.	3.5	1.5

What did you appreciate most with the course?

What did you appreciate most with the course?
Kjell
Great lecture notes and helpful assignment staff (thank you Lea!)
I like the topic itself, and how immensely useful it is. I found it really satisfying how intuitive linear algebra is if you visualize it geometrically.
I appreciated the rigor of the course. It was very valuable to me to see how all of the mathematics fits together. I also really enjoyed the theoretical project. It was really valuable to me to work through the theory very closely to the point of being able to teach it, and it was very to good have the opportunity to actually teach it.
The lessons and seminars with Kjell were really great, as well as the textbook, and i enjoyed everything very much! I liked that there was a theoretical approach on the lectures and learned a lot by it. I also liked that the exercises were not only computation exercises but there were more theoretically based exercises involved in the class. I feel much more confident to read a mathematical text after taking this course and studying the textbook of this course.
Seminarierna var väldigt givande. Speciellt då Tien höll i dem.
Kjell. He is a great and patient teacher, and I wish students had been more respectful to him during lectures.
The lecture notes were very helpful and well structured. Also the exam was fair, given the current circumstances and the fact that we had to write it at home.
Plenty of interesting and challenging theoretical exercises among the more computational ones.
The seminars
The programming project. It was the one thing about the course that actually felt like it was connected to what we had learned from the course material.
The interesting content of the course, what i have learned and the funny practical project
Kjell!!!
I appriciated the structure and schedule of the course, it was very well planned.
Lecture notes.
Kjell was an amazing lecturer, I thoroughly enjoyed the whole course.

What do you think should be improved?

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The programming project and it's layout. The two assistants were seen once and the information surrounding the projects were vague at most.
Possibility to choose teacher on seminar should be considered.
I think there were a lot of proofs in the coursematerial - which is fine. However, we didn't train and have not previously had a lot of training in these types of proofs. So they are harder to understand than I think should be necessary. One thing I think the course sorely missed, is the geometric intuition behind all the matrix operations. I understand that Kjell wants to keep the rigour, but I like to think if we had more of the underlying intuition, it would be easier to actually understand the proofs and appreciate the rigour.
I did not like that the contents of the exam focused mainly on the last two weeks of instruction and on tedious computationally focused tasks such as determining eigenvalues and eigenvectors and doing matrix multiplications.
I felt there was too little time to write everything in Latex during the online exam and it became a bit too stressful. I started writing in latex but then i realised it was not enough time to both solve and write in latex and i handed in the handwritten versions in the end - it ended up to be a not so efficient process.
Att läsa kompendiet och förstå den var tufft. Kanske kan man lägga till lite mer förklaring till teorierna.
Nothing, I actually really enjoyed this course. I just with the transition from Linear Algebra I to Linear Algebra II
In the final weeks I didn't have much time to do the exercises anymore as I was already preparing for the exam. Maybe one could schedule more time for revision.
I found
The lectures were not bad but a deeper look into the theory would have been nice.
Seems pretty good as it is
The examination was, in my view, not related to the content of the course. Either the examination should be better suited for the material of the course, or the course material as in lectures, seminars and course litterature, is not satisfactory to guarantee that we receive the knowledge that is expected of us. Also other suggested course litterature would be valuable, as the litterature provided by the departement was not always satisfactory. For myself I sought other material which was valuable for my learning, but other students should be given the same opportunities to find suitable course material. The communication between students and staff was not always on a polite level. There was much disencouragement from the staff, and that did not improve the study enviroment, but instead lowered the motivation of the students.
More tasks available during the course, and classes where you can ask for help with the tasks
More Kjell!!!
Kjell could be a bit more open for alternative solutions to exercises.
Lecture notes should have more pictures and maybe there could be a part dealing with infinitely dimensional vector spaces.
Not sure, was pretty good.

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
Inte alls. Alla var supertrevliga och hjälpsamma. I början kunde jag känna att Kjell var lite hård när han gav svar på vissa frågor. Men med tiden har jag insett att han är ärlig och försöker ge ett rakt svar. Även om det kan vara ett hårt sådant ibland
No.
No.
No
Nope
Not discriminatory no, but the study envoriment in the teacher led activities was very discouraging.
No, i thought the teacher was very good, but i Think that others could see him as a but rough during the seminars even if i Think that they in that case were a bit over sensitive
No weirdness, Kjell är king, no doubt!
No not at all.
No.
No.