



LUND
UNIVERSITY

Centre for Mathematical Sciences
Division of Mathematics and Numerical Analysis

Centre for Mathematical Sciences
Faculty of Science

Course Analysis for MATB22 and ÄMAD02 Linear Algebra 2, Spring Term 2022

Course Information

Lecturer: Kjell Elfström

Teaching assistants: Raul Hindov, Niklas Kotarsky

Number of students:

MATB22: 44 newly registered and 11 re-registered.

ÄMAD02: 25 newly registered and 4 re-registered.

18 students answered the course evaluation, 10 of them are enrolled on Bachelor's Programme in Mathematics, 2 on a Physics programme and 5 on the teacher education.

Examination

Project: 40 MATB22 students passed. Not applicable to ÄMAD02.

Written examination:

- Ordinary examination 17 March 2022: 37 out of 48 MATB22 candidates passed and 7 out of 13 ÄMAD02 candidates passed.
- Resit examination 9 April 2022: 6 out of 15 MATB22 candidates passed and 1 out of 9 ÄMAD02 candidates passed.

Final grades

In all, 41 MATB22 students, including some re-registered students, have got their final grade.

14 passed with distinction.

27 passed.

For ÄMAD02 students, I refer to Anna-Maria.

Course Evaluation

Summary of student's answers:

Contradictory opinions. Some seemed to like the textbook and the lectures and seminars a lot, some had quite an opposite opinion. One cannot please them all.

Teachers' comments:

The course consisted of lectures on campus and broadcast and seminars online only. A project consisting of exercises in Python is also included in the course. The textbook 'Linear Algebra' is written by me (Kjell Elfström).

Changes from the previous course realisation: None.

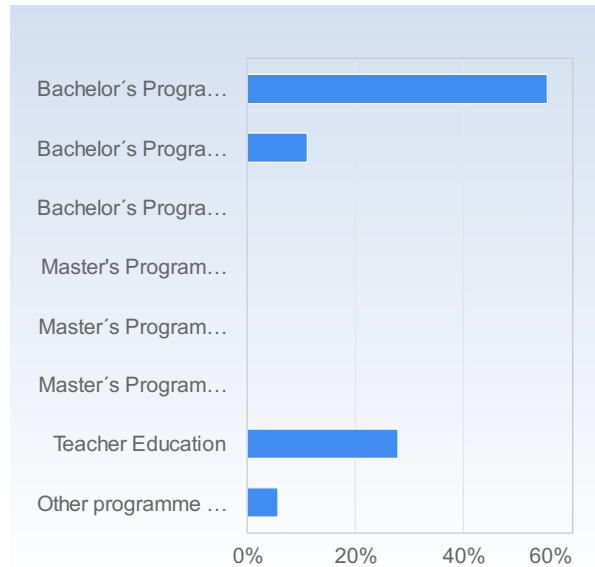
Suggestions for the next course realisation: None.

MATB22-vt22

Answer Count: 18

I have studied this course as part of

I have studied this course as part of	Number of responses
Bachelor's Programme in Mathematics	10 (55,6%)
Bachelor's Programme in Physics, Theoretical Physics, Astronomy	2 (11,1%)
Bachelor's Programme, other specialisation	0 (0,0%)
Master's Programme in Mathematics	0 (0,0%)
Master's Programme in Mathematical Statistics	0 (0,0%)
Master's Programme, other specialisation	0 (0,0%)
Teacher Education	5 (27,8%)
Other programme or as stand-alone course	1 (5,6%)
Total	18 (100,0%)

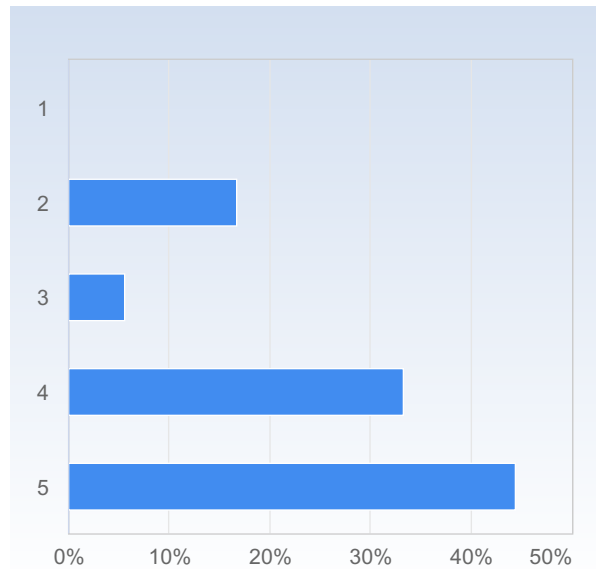


I have studied this course as part of	Mean	Standard Deviation
	3,2	2,9

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.

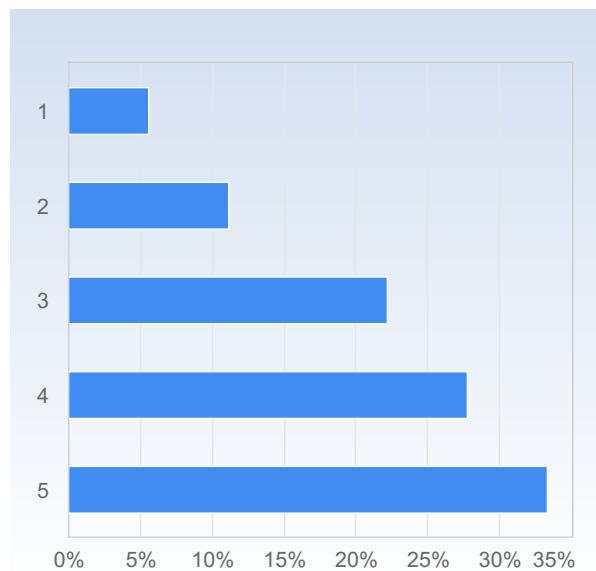
2. My prior knowledge has been sufficient to assimilate the contents of this course.	Number of responses
1	0 (0,0%)
2	3 (16,7%)
3	1 (5,6%)
4	6 (33,3%)
5	8 (44,4%)
Total	18 (100,0%)



2. My prior knowledge has been sufficient to assimilate the contents of this course.	Mean	Standard Deviation
	4,1	1,1

3. I have participated actively in the course.

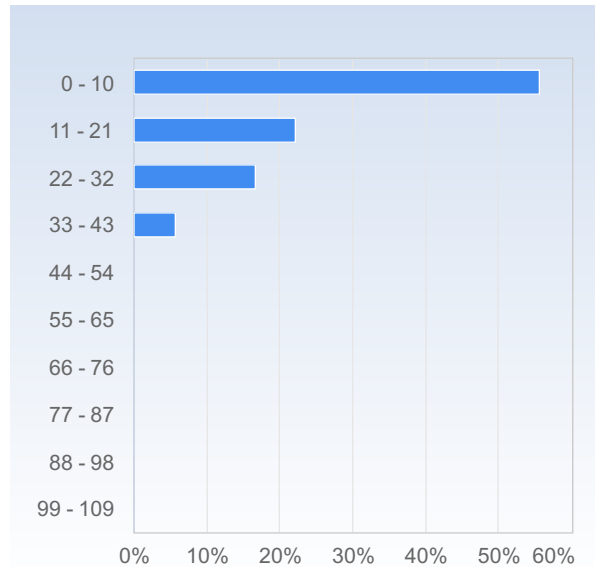
3. I have participated actively in the course.	Number of responses
1	1 (5,6%)
2	2 (11,1%)
3	4 (22,2%)
4	5 (27,8%)
5	6 (33,3%)
Total	18 (100,0%)



3. I have participated actively in the course.	Mean	Standard Deviation
	3,7	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	10 (55,6%)
11 - 21	4 (22,2%)
22 - 32	3 (16,7%)
33 - 43	1 (5,6%)
44 - 54	0 (0,0%)
55 - 65	0 (0,0%)
66 - 76	0 (0,0%)
77 - 87	0 (0,0%)
88 - 98	0 (0,0%)
99 - 109	0 (0,0%)
Total	18 (100,0%)



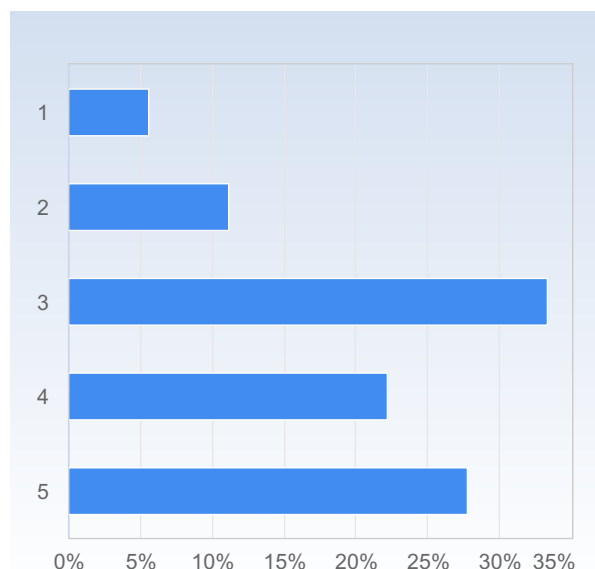
	Mean	Standard Deviation
Average number of hours spent in total on the course per week (including scheduled activities):	14,7	10,0

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.

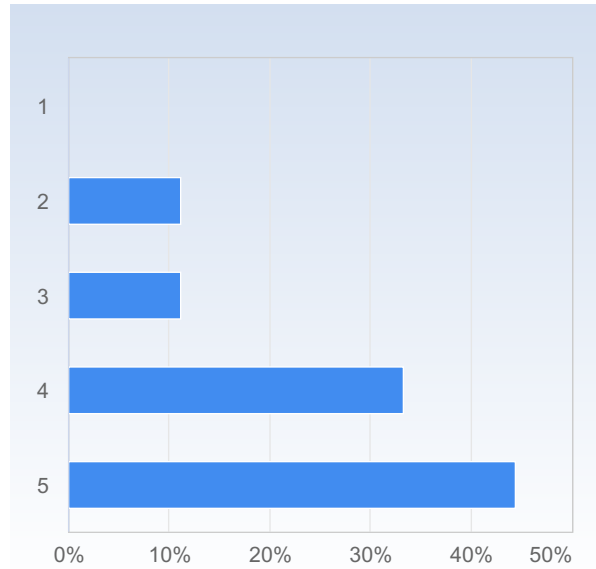
The way the course was taught and organised suited me.	Number of responses
1	1 (5,6%)
2	2 (11,1%)
3	6 (33,3%)
4	4 (22,2%)
5	5 (27,8%)
Total	18 (100,0%)



	Mean	Standard Deviation
The way the course was taught and organised suited me.	3,6	1,2

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

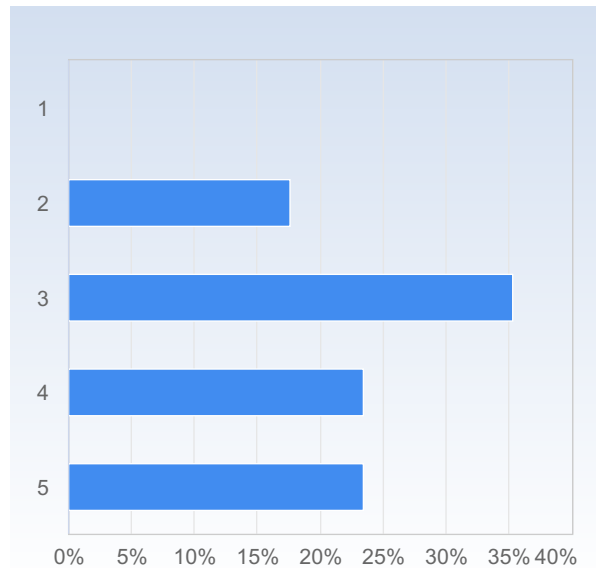
The number of teacher lead activities (lectures, seminars etc.) has been satisfactory.	Number of responses
1	0 (0,0%)
2	2 (11,1%)
3	2 (11,1%)
4	6 (33,3%)
5	8 (44,4%)
Total	18 (100,0%)



	Mean	Standard Deviation
The number of teacher lead activities (lectures, seminars etc.) has been satisfactory.	4,1	1,0

The lectures were valuable for my learning.

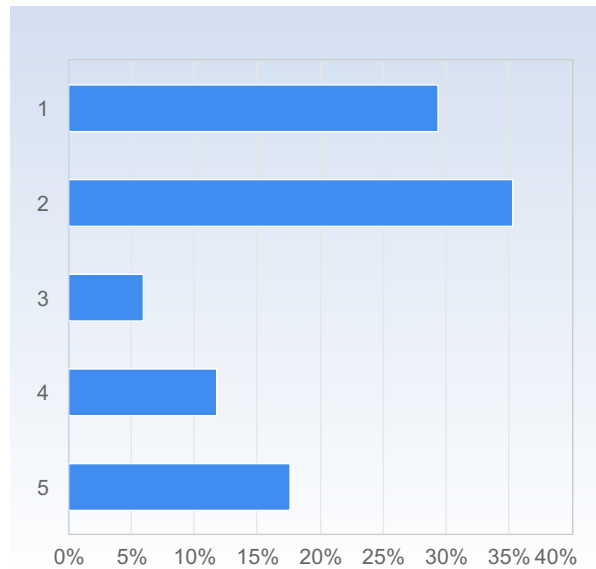
The lectures were valuable for my learning.	Number of responses
1	0 (0,0%)
2	3 (17,6%)
3	6 (35,3%)
4	4 (23,5%)
5	4 (23,5%)
Total	17 (100,0%)



	Mean	Standard Deviation
The lectures were valuable for my learning.	3,5	1,1

The seminars were valuable for my learning.

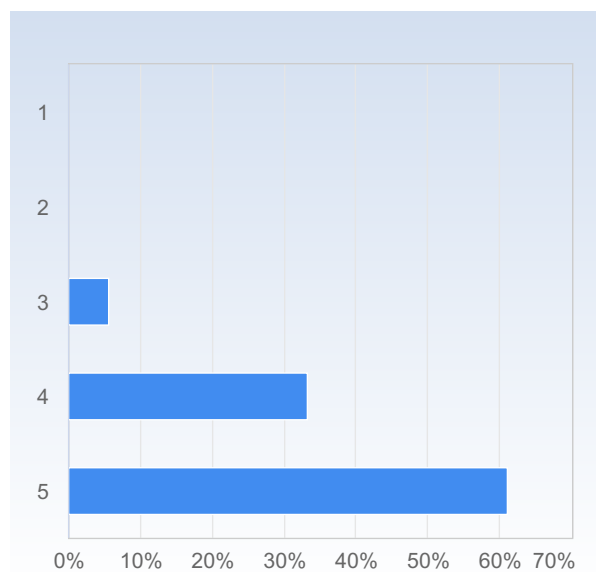
The seminars were valuable for my learning.	Number of responses
1	5 (29,4%)
2	6 (35,3%)
3	1 (5,9%)
4	2 (11,8%)
5	3 (17,6%)
Total	17 (100,0%)



	Mean	Standard Deviation
The seminars were valuable for my learning.	2,5	1,5

Studying on my own was valuable for my learning.

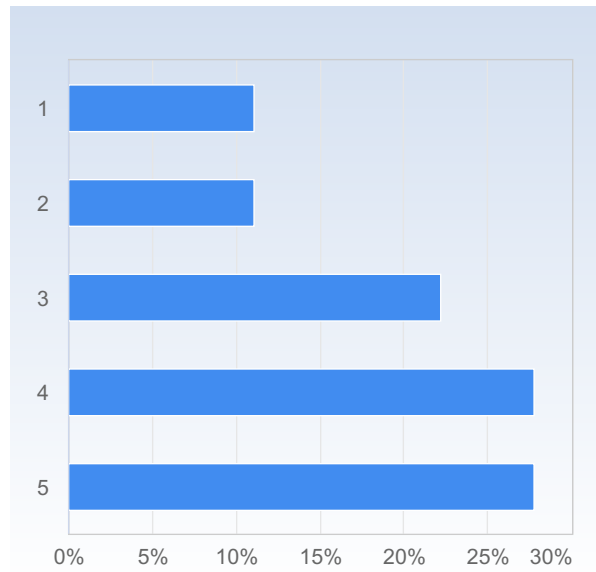
Studying on my own was valuable for my learning.	Number of responses
1	0 (0,0%)
2	0 (0,0%)
3	1 (5,6%)
4	6 (33,3%)
5	11 (61,1%)
Total	18 (100,0%)



	Mean	Standard Deviation
Studying on my own was valuable for my learning.	4,6	0,6

The course literature/material was a valuable learning resource.

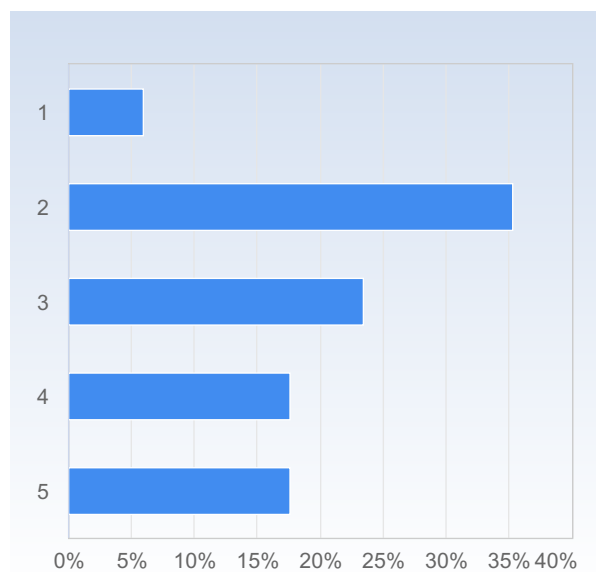
The course literature/material was a valuable learning resource.	Number of responses
1	2 (11,1%)
2	2 (11,1%)
3	4 (22,2%)
4	5 (27,8%)
5	5 (27,8%)
Total	18 (100,0%)



	Mean	Standard Deviation
The course literature/material was a valuable learning resource.	3,5	1,3

The assignments were valuable for my learning.

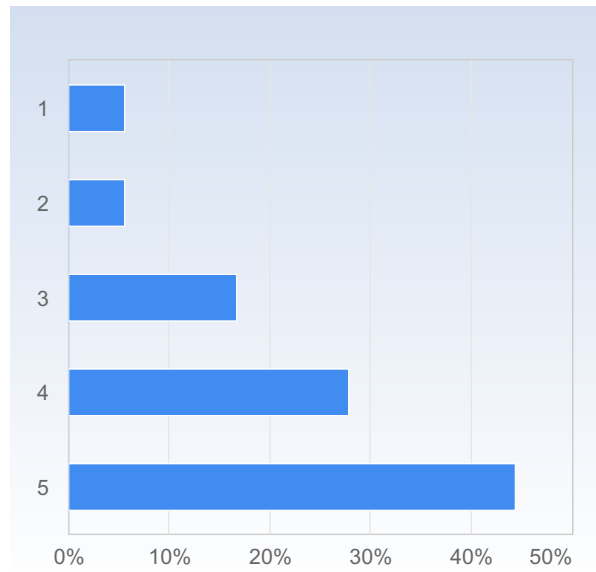
The assignments were valuable for my learning.	Number of responses
1	1 (5,9%)
2	6 (35,3%)
3	4 (23,5%)
4	3 (17,6%)
5	3 (17,6%)
Total	17 (100,0%)



	Mean	Standard Deviation
The assignments were valuable for my learning.	3,1	1,2

The information I received before the course start was satisfactory.

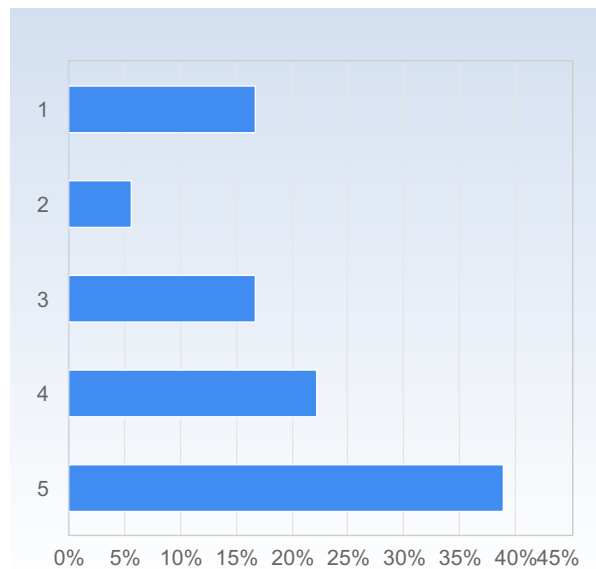
The information I received before the course start was satisfactory.	Number of responses
1	1 (5,6%)
2	1 (5,6%)
3	3 (16,7%)
4	5 (27,8%)
5	8 (44,4%)
Total	18 (100,0%)



	Mean	Standard Deviation
The information I received before the course start was satisfactory.	4,0	1,2

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

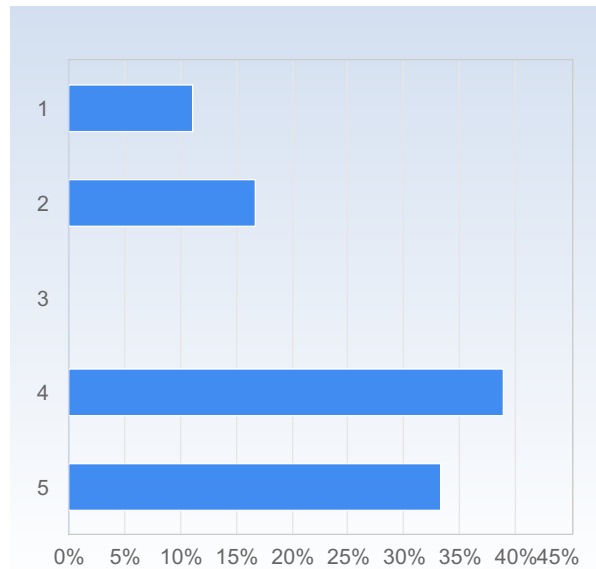
The communication with the teaching staff during the course was good.	Number of responses
1	3 (16,7%)
2	1 (5,6%)
3	3 (16,7%)
4	4 (22,2%)
5	7 (38,9%)
Total	18 (100,0%)



	Mean	Standard Deviation
The communication with the teaching staff during the course was good.	3,6	1,5

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

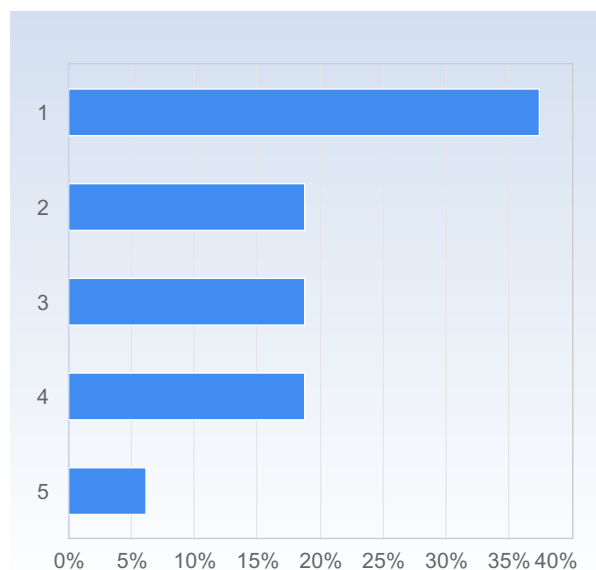
It was clear throughout the course what was expected of me.	Number of responses
1	2 (11,1%)
2	3 (16,7%)
3	0 (0,0%)
4	7 (38,9%)
5	6 (33,3%)
Total	18 (100,0%)



	Mean	Standard Deviation
It was clear throughout the course what was expected of me.	3,7	1,4

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

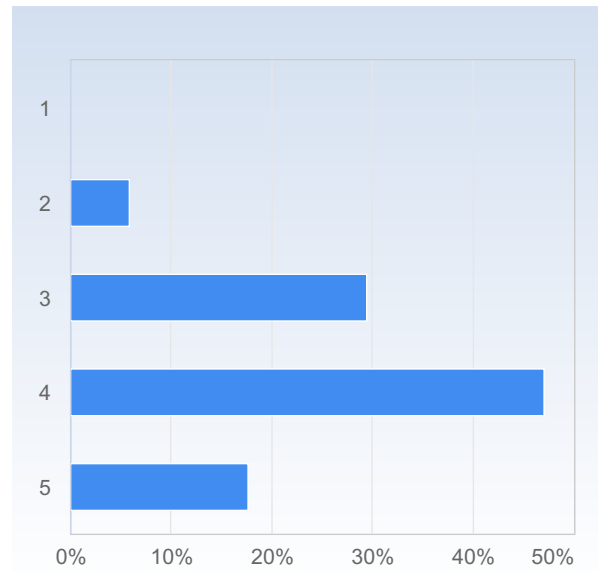
I have received valuable feedback from my teacher/teachers during the course.	Number of responses
1	6 (37,5%)
2	3 (18,8%)
3	3 (18,8%)
4	3 (18,8%)
5	1 (6,3%)
Total	16 (100,0%)



	Mean	Standard Deviation
I have received valuable feedback from my teacher/teachers during the course.	2,4	1,4

The course had a reasonable workload.

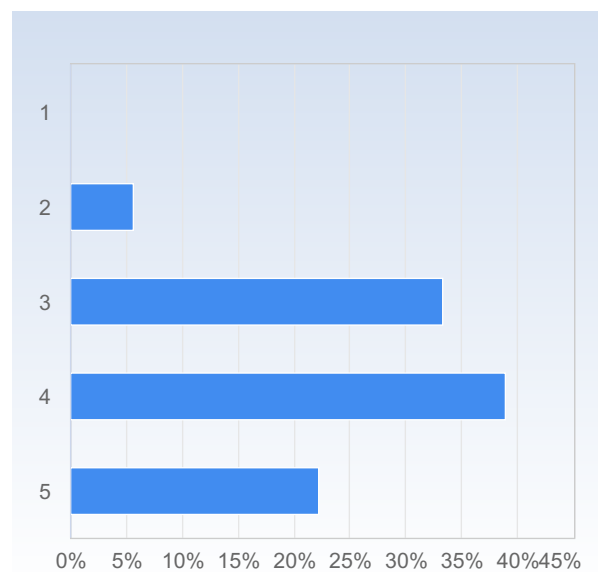
The course had a reasonable workload.	Number of responses
1	0 (0,0%)
2	1 (5,9%)
3	5 (29,4%)
4	8 (47,1%)
5	3 (17,6%)
Total	17 (100,0%)



	Mean	Standard Deviation
The course had a reasonable workload.	3,8	0,8

The workload was evenly distributed throughout the course.

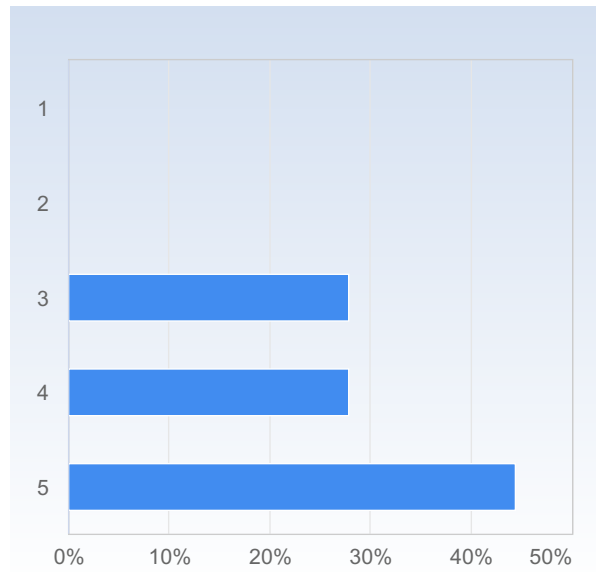
The workload was evenly distributed throughout the course.	Number of responses
1	0 (0,0%)
2	1 (5,6%)
3	6 (33,3%)
4	7 (38,9%)
5	4 (22,2%)
Total	18 (100,0%)



	Mean	Standard Deviation
The workload was evenly distributed throughout the course.	3,8	0,9

The examination matched the contents and level of the course.

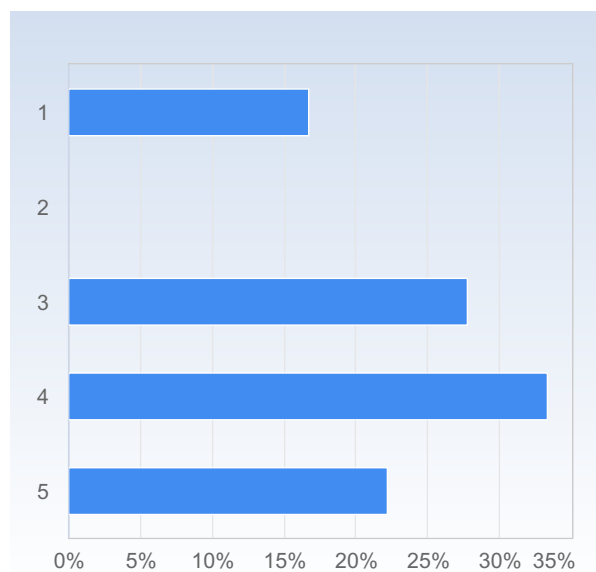
The examination matched the contents and level of the course.	Number of responses
1	0 (0,0%)
2	0 (0,0%)
3	5 (27,8%)
4	5 (27,8%)
5	8 (44,4%)
Total	18 (100,0%)



	Mean	Standard Deviation
The examination matched the contents and level of the course.	4,2	0,9

Overall, I am satisfied with the course.

Overall, I am satisfied with the course.	Number of responses
1	3 (16,7%)
2	0 (0,0%)
3	5 (27,8%)
4	6 (33,3%)
5	4 (22,2%)
Total	18 (100,0%)



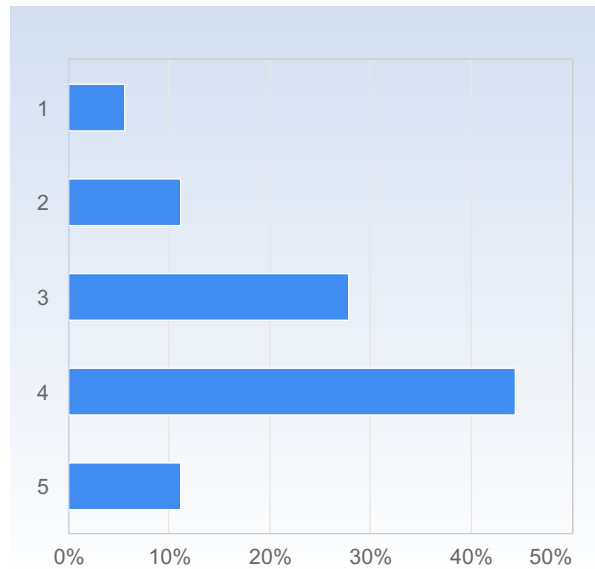
	Mean	Standard Deviation
Overall, I am satisfied with the course.	3,4	1,3

On the development of generic skills

On the 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.

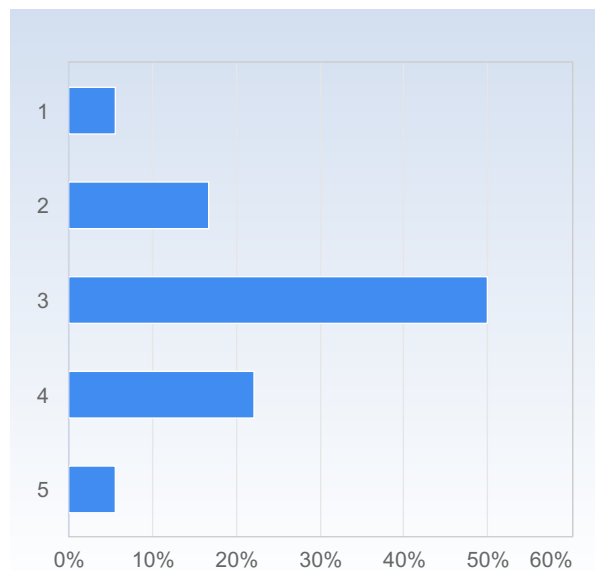
The course has increased my ability to read a mathematical text.	Number of responses
1	1 (5,6%)
2	2 (11,1%)
3	5 (27,8%)
4	8 (44,4%)
5	2 (11,1%)
Total	18 (100,0%)



	Mean	Standard Deviation
The course has increased my ability to read a mathematical text.	3,4	1,0

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

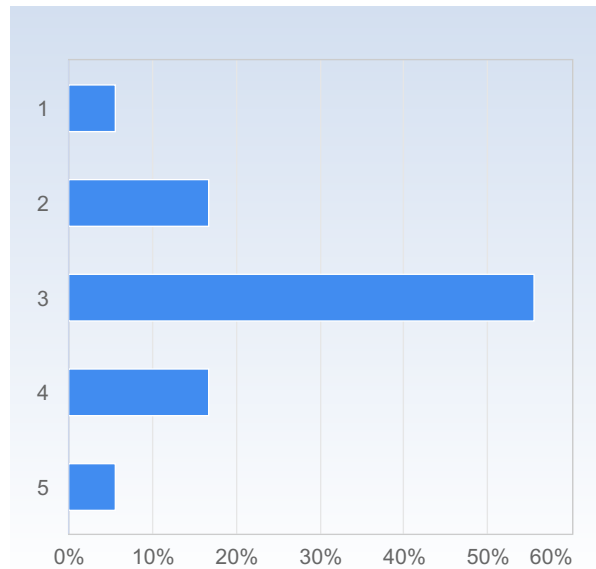
The course has increased my ability to communicate the subject in writing.	Number of responses
1	1 (5,6%)
2	3 (16,7%)
3	9 (50,0%)
4	4 (22,2%)
5	1 (5,6%)
Total	18 (100,0%)



	Mean	Standard Deviation
The course has increased my ability to communicate the subject in writing.	3,1	0,9

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

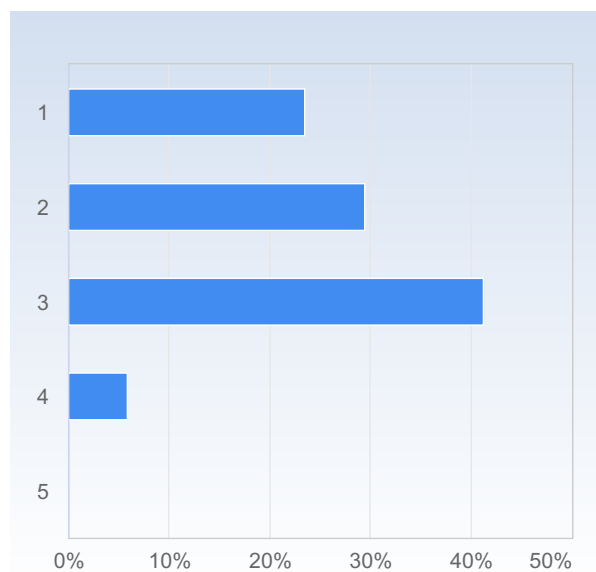
The course has increased my ability to communicate the subject orally.	Number of responses
1	1 (5,6%)
2	3 (16,7%)
3	10 (55,6%)
4	3 (16,7%)
5	1 (5,6%)
Total	18 (100,0%)



	Mean	Standard Deviation
The course has increased my ability to communicate the subject orally.	3,0	0,9

The course has increased my ability to cooperate.

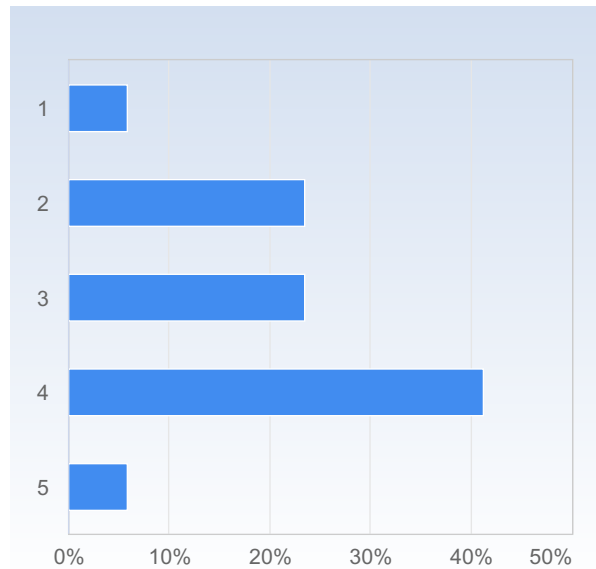
The course has increased my ability to cooperate.	Number of responses
1	4 (23,5%)
2	5 (29,4%)
3	7 (41,2%)
4	1 (5,9%)
5	0 (0,0%)
Total	17 (100,0%)



	Mean	Standard Deviation
The course has increased my ability to cooperate.	2,3	0,9

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

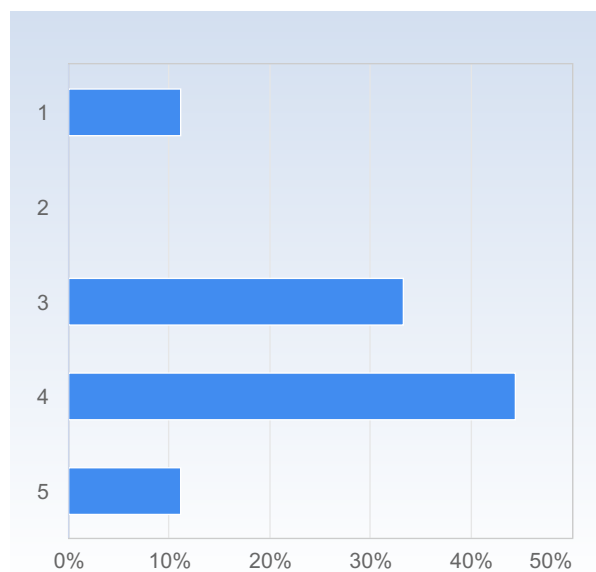
The course has increased my ability to search and process information.	Number of responses
1	1 (5,9%)
2	4 (23,5%)
3	4 (23,5%)
4	7 (41,2%)
5	1 (5,9%)
Total	17 (100,0%)



	Mean	Standard Deviation
The course has increased my ability to search and process information.	3,2	1,1

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

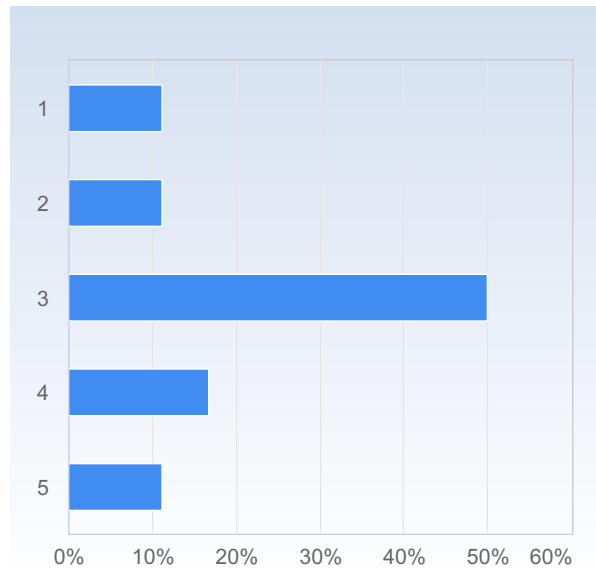
The course has increased my ability to analyze and solve problems.	Number of responses
1	2 (11,1%)
2	0 (0,0%)
3	6 (33,3%)
4	8 (44,4%)
5	2 (11,1%)
Total	18 (100,0%)



	Mean	Standard Deviation
The course has increased my ability to analyze and solve problems.	3,4	1,1

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 (11,1%)
2	2 (11,1%)
3	9 (50,0%)
4	3 (16,7%)
5	2 (11,1%)
Total	18 (100,0%)



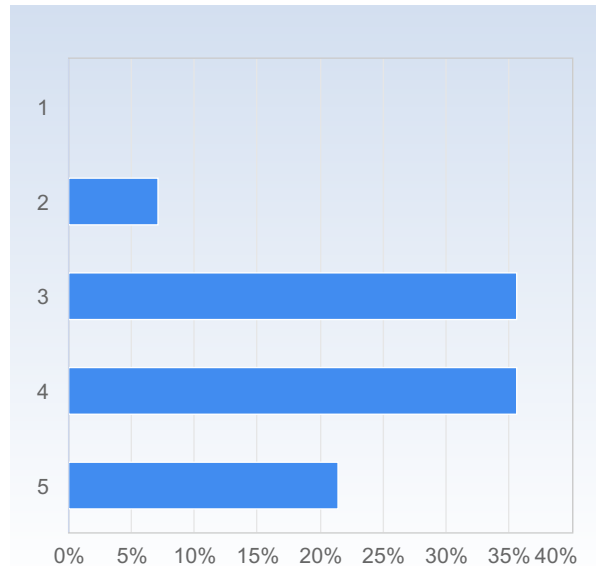
	Mean	Standard Deviation
As a result of this course, I feel confident about tackling unfamiliar problems.	3,1	1,1

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.

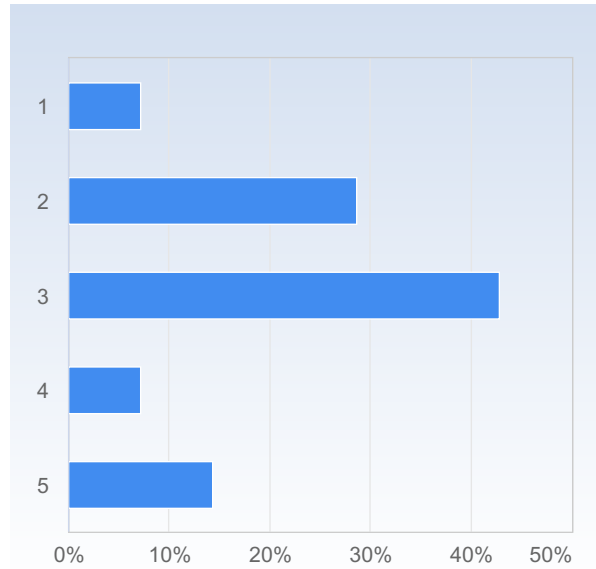
The programming project is closely related to the course contents.	Number of responses
1	0 (0,0%)
2	1 (7,1%)
3	5 (35,7%)
4	5 (35,7%)
5	3 (21,4%)
Total	14 (100,0%)



	Mean	Standard Deviation
The programming project is closely related to the course contents.	3,7	0,9

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

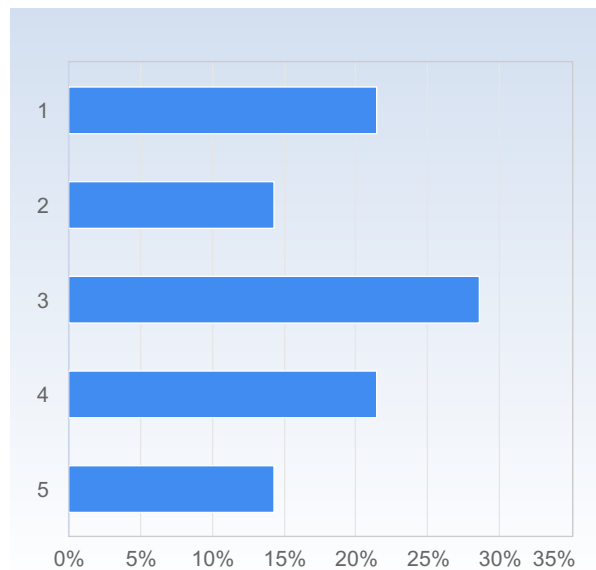
Owing to the programming project, I have increased my programming skills in Python.	Number of responses
1	1 (7,1%)
2	4 (28,6%)
3	6 (42,9%)
4	1 (7,1%)
5	2 (14,3%)
Total	14 (100,0%)



	Mean	Standard Deviation
Owing to the programming project, I have increased my programming skills in Python.	2,9	1,1

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	3 (21,4%)
2	2 (14,3%)
3	4 (28,6%)
4	3 (21,4%)
5	2 (14,3%)
Total	14 (100,0%)



	Mean	Standard Deviation
I believe that the programming project has been valuable for my future learning.	2,9	1,4

What did you appreciate most with the course?

What did you appreciate most with the course?

The Canvas course page. It had a lot of useful information that students want to know about the course.

Linear algebra is cool

No

The 15min breaks during lectures/seminars.

Really liked the course book, definitely the best one so far. Clean proofs.

I especially appreciated the very rigorous and structured presentation of the course material. It was always clear what theorems were used and how the theory was derived.

The visual representations of different concepts

Very well-written and clear textbook, excellent lectures, great seminars... really, everything very good

The course seems really well-organized and thought through: the pace is even and good, the course literature complements the lectures well (especially when the lectures are a somewhat less rigorous and a little bit of reading fills in the last details - the combination works really well for the more hands-on geometric parts of the course) and every aspect of the course is fairly tested in the examination (theoretical as well as practical).

Questions that we go through on the seminars were very good at preparing me for solving the questions on the final exam

What do you think should be improved?

What do you think should be improved?

The course literature should be improved, it was a bit wearying with a lot of theorems and definition. I think it is better to solve more example during the teaching.

Please no more courses at that must be attended at 8 am. It severely hurts my ability to learn and my natural clock and my mental health.

Kurskompendiet kunde fått lov att vara mer lättbegripligt.

När man läste det var det lite som att köra huvudet i en betongvägg och mängder av tid och arbete gick åt till att överhuvudtaget begripa vad där stod.

Om det varit enklare att förstå så hade en betydligt större andel av ens tid och arbete kunnat läggas på att lära sig ämnet och man hade för motsvarande arbetskostnad kunnat lära sig betydligt fler saker istället och därmed blivit betydligt bättre på matematiken.

Kjell, Raul

Kjell and Raul

The lectures would be more interesting if it included intuitive ways to look at the theorems given in the lecture notes.

Eigenvalues and eigenvectors could be introduced before the chapter on isometries, projections, reflections etc, I guess it would clarify e.g. the classification of a 3D isometry a lot.

While the theory was always very clearly presented I personally would have appreciated some more material for building intuition, in particular when introducing a new topic.

This is especially true for Linear Algebra as it is often presented and used in very visual/graphical ways.

The programming project felt very out of place and did not challenge me in many ways beyond the scope of NUMA01 (except for three-dimensional plotting).

I believe I would have been more engaged in the course material with a non-programming assignment purely in Linear Algebra.

The handwriting in both the lectures and seminars. The seminars to be more pedagogical and explaining instead of mumbling and expecting everyone to know it all already. More hands on examples when learning of something new in a lecture.

Can't really think of anything

The programming project seemed very disconnected from the rest of the course.

For me personally, online seminars aren't nearly as instructive as in-person seminars, but I completely understand that the decision had to be made, and that in person seminars will resume now. Other than that, I've got nothing to add.

The examples in lecture notes have been helpful, however, I wish that the explanations of the theoretical parts were clearer

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

Nej.

No

No

no