LUND UNIVERSITY
Faculty of Science

Centre for Mathematical Sciences
Division of Mathematics and Numerical Analysis

Course Analysis for NUMA41 *Numerical Analysis, Basic Course*, HT 2024

Course Information

Lecturer: Mengwu Guo
Teaching assistants: Jimmy Kornelije Gunnarsson
Number of students:
35 newly registered and 10 re-registered.
7 students answered the course evaluation, among which 6 of them are enrolled in the bachelor's programme in Mathematics.

Examination

Project: 25 students passed.
Oral examination: 22 students passed.

Final grades:
In all, 22 students, including 6 re-registered students, have got their final grade.
9 passed with distinction, and 13 passed.

Course Evaluation

Summary of student's answers:
Overall, the survey respondents expressed satisfaction with the course's organization and materials.

Teachers' comments:
Fourteen on-campus lectures were held, scheduled as two per week. Both blackboard and slides were used during the lectures. On average, about half of the registered students attended each session. Six voluntary exercises were assigned, with roughly one-third to one-half of the students completing them. The course examination consists of a programming project and an oral exam, both carried out in pairs. A new set of lecture notes was created to closely align with the materials presented in the lectures.

Changes from the previous course realisation:
As noted earlier, the lecturer created a new set of lecture notes that received positive student feedback. Two versions were provided: the first had key contents omitted so students could fill in the blanks during lectures and use it for exam preparation, while the second was a complete version containing all technical details aligned with the lectures. This setting was well-received by the students. Assignment exercises were also updated.

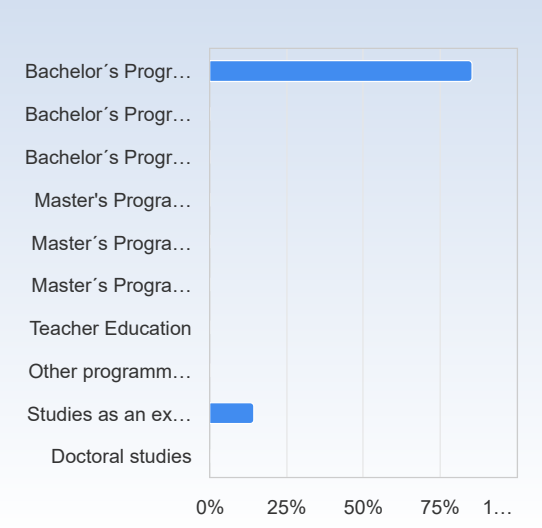
Suggestions for the next course realisation:
There is still room for minor refinements to the lecture notes, and adding a few new assignment exercises could provide more comprehensive coverage of the course materials. The final course project might benefit from peer feedback in each group pair to ensure fairness.

NUMA41HT24 Numerical Analysis, Basic Course

Respondents: 45
Answer Count: 7
Answer Frequency: 15.56%

I have studied this course as part of

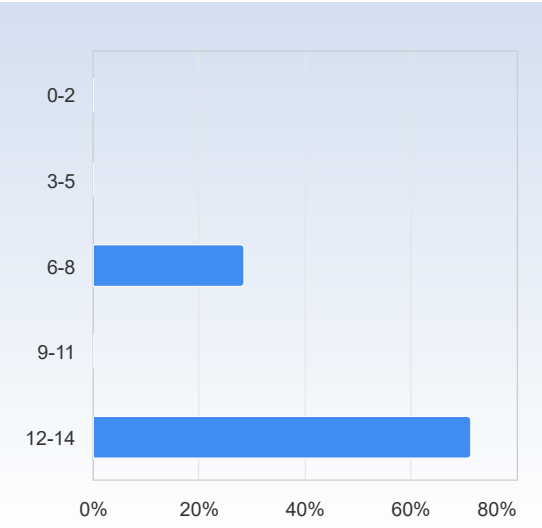
I have studied this course as part of	Number of responses
Bachelor´s Programme in Mathematics	6 (85.7%)
Bachelor´s Programme in Physics, Theoretical Physics, Astronomy	0 (0.0%)
Bachelor´s Programme, other specialization	0 (0.0%)
Master's Programme in Mathematics	0 (0.0%)
Master´s Programme in Mathematical Statistics	0 (0.0%)
Master´s Programme, other specialization	0 (0.0%)
Teacher Education	0 (0.0%)
Other programmes or as a stand-alone course	0 (0.0%)
Studies as an exchange student	1 (14.3%)
Doctoral studies	0 (0.0%)
Total	7 (100.0%)



	Mean	Standard Deviation
I have studied this course as part of	2.1	3.0

How many lectures did you attend? (Note: the whole survey is strictly anonymous.)

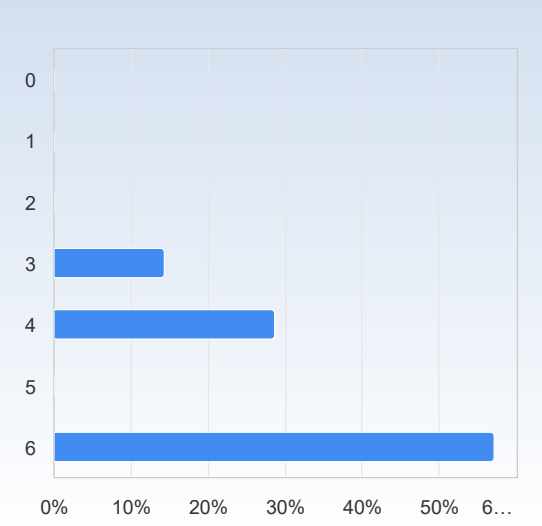
How many lectures did you attend? (Note: the whole survey is strictly anonymous.)	Number of responses
0-2	0 (0.0%)
3-5	0 (0.0%)
6-8	2 (28.6%)
9-11	0 (0.0%)
12-14	5 (71.4%)
Total	7 (100.0%)



	Mean	Standard Deviation
How many lectures did you attend? (Note: the whole survey is strictly anonymous.)	11.3	2.9

How many assignments did you finish and submit? (Note: the whole survey is strictly anonymous.)

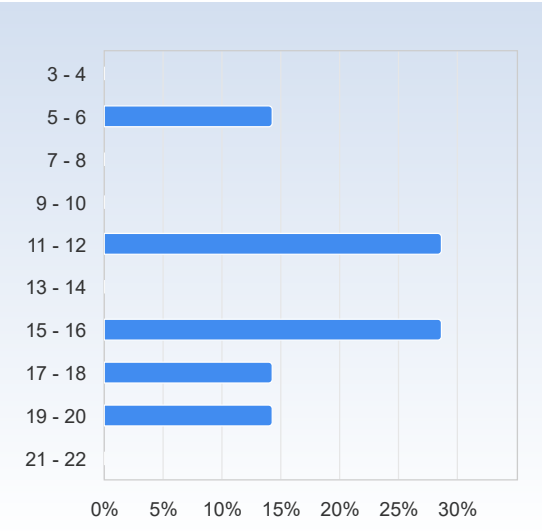
How many assignments did you finish and submit? (Note: the whole survey is strictly anonymous.)	Number of responses
0	0 (0.0%)
1	0 (0.0%)
2	0 (0.0%)
3	1 (14.3%)
4	2 (28.6%)
5	0 (0.0%)
6	4 (57.1%)
Total	7 (100.0%)



	Mean	Standard Deviation
How many assignments did you finish and submit? (Note: the whole survey is strictly anonymous.)	5.0	1.3

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

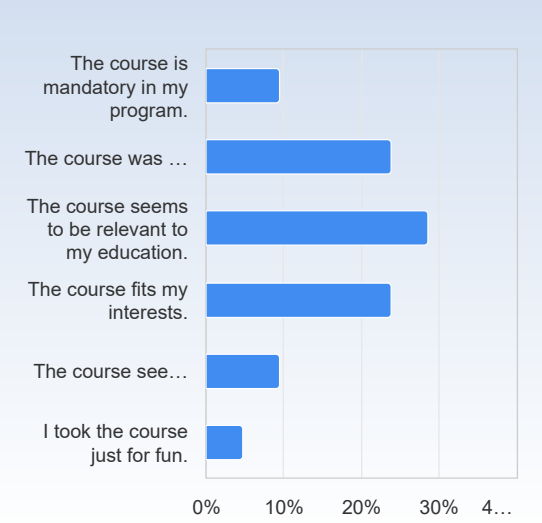
Average number of hours spent in total on the course per week (including scheduled activities):	Number of responses
3 - 4	0 (0.0%)
5 - 6	1 (14.3%)
7 - 8	0 (0.0%)
9 - 10	0 (0.0%)
11 - 12	2 (28.6%)
13 - 14	0 (0.0%)
15 - 16	2 (28.6%)
17 - 18	1 (14.3%)
19 - 20	1 (14.3%)
21 - 22	0 (0.0%)
Total	7 (100.0%)



	Mean	Standard Deviation
Average number of hours spent in total on the course per week (including scheduled activities):	13.9	4.4

Why did you sign up for the course? (Multiple answers possible)

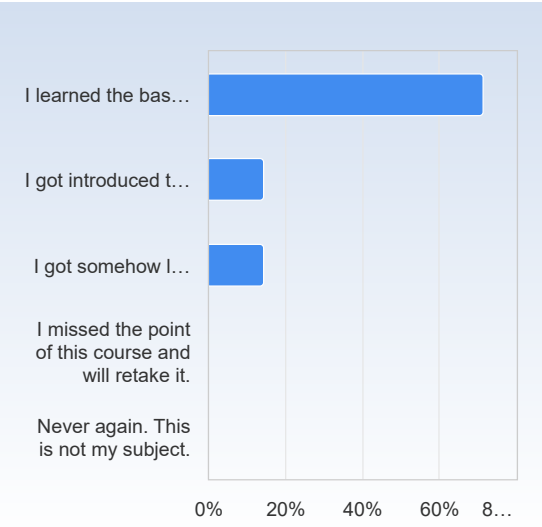
Why did you sign up for the course? (Multiple answers possible)	Number of responses
The course is mandatory in my program.	2 (28.6%)
The course was strongly recommended in my program /specialization.	5 (71.4%)
The course seems to be relevant to my education.	6 (85.7%)
The course fits my interests.	5 (71.4%)
The course seems to improve my chances on the job market.	2 (28.6%)
I took the course just for fun.	1 (14.3%)
Total	21 (300.0%)



	Mean	Standard Deviation
Why did you sign up for the course? (Multiple answers possible)	3.1	1.3

Now that the course is concluded, my impression is that...

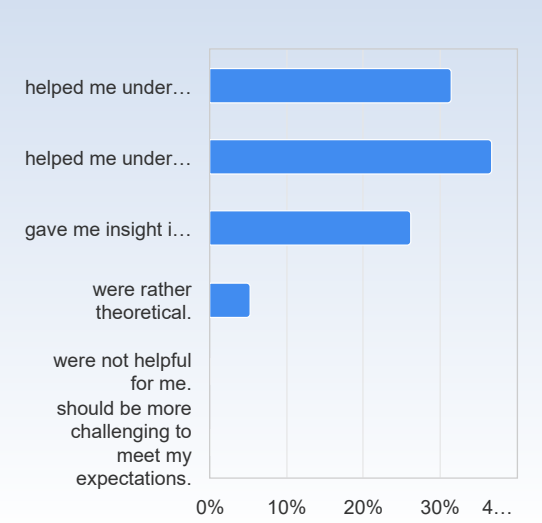
Now that the course is concluded, my impression is that...	Number of responses
I learned the basics of numerical analysis, and I am able to apply this knowledge to computational tasks.	5 (71.4%)
I got introduced to topics in numerical analysis, but I need to dive deeper to fully understand all contents of the course.	1 (14.3%)
I got somehow lost during the course, but I think I will catch up.	1 (14.3%)
I missed the point of this course and will retake it.	0 (0.0%)
Never again. This is not my subject.	0 (0.0%)
Total	7 (100.0%)



	Mean	Standard Deviation
Now that the course is concluded, my impression is that...	1.4	0.8

The lectures .... (Multiple answers possible)

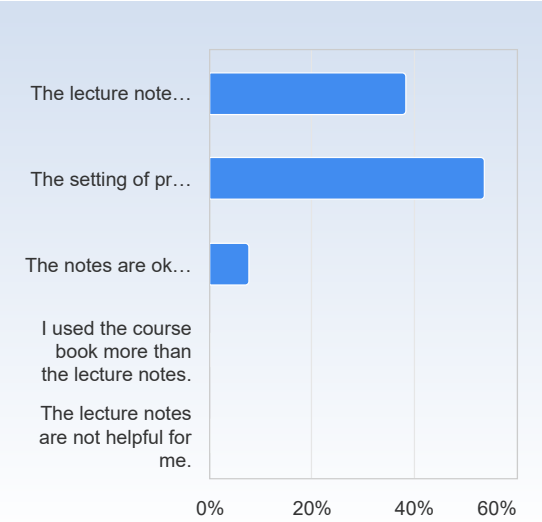
The lectures .... (Multiple answers possible)	Number of responses
helped me understand mathematical concepts and details.	6 (85.7%)
helped me understand the connections among relevant concepts and methods.	7 (100.0%)
gave me insight into alternative interpretations and intuitions.	5 (71.4%)
were rather theoretical.	1 (14.3%)
were not helpful for me.	0 (0.0%)
should be more challenging to meet my expectations.	0 (0.0%)
Total	19 (271.4%)



	Mean	Standard Deviation
The lectures .... (Multiple answers possible)	2.1	0.9

What do you think about the lecture notes? (Multiple answers possible)

What do you think about the lecture notes? (Multiple answers possible)	Number of responses
The lecture notes are clearly written and useful for my studies.	5 (71.4%)
The setting of pre-lecture + completed notes is helpful for my studies.	7 (100.0%)
The notes are ok, but I do not have specific feelings about them.	1 (14.3%)
I used the course book more than the lecture notes.	0 (0.0%)
The lecture notes are not helpful for me.	0 (0.0%)
Total	13 (185.7%)



	Mean	Standard Deviation
What do you think about the lecture notes? (Multiple answers possible)	2.2	1.5

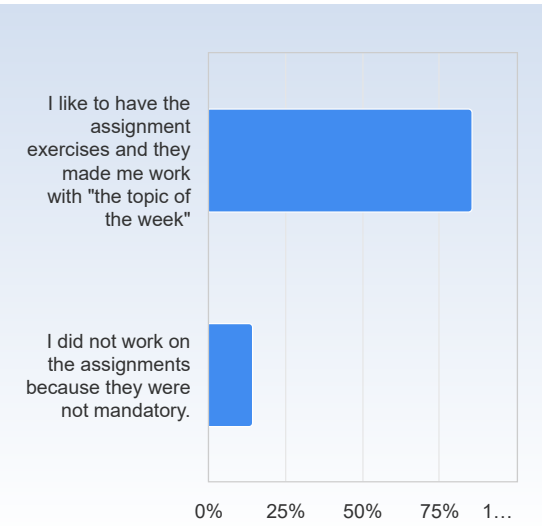
What do you think about the organization of course materials?

What do you think about the organization of course materials?	Number of responses
The organization of materials was a good mix of new concepts and the deepening of previous concepts.	6 (85.7%)
The organization of materials often made me lost.	1 (14.3%)
Total	7 (100.0%)

	Mean	Standard Deviation
What do you think about the organization of course materials?	1.1	0.4

What do you think about the assignments?

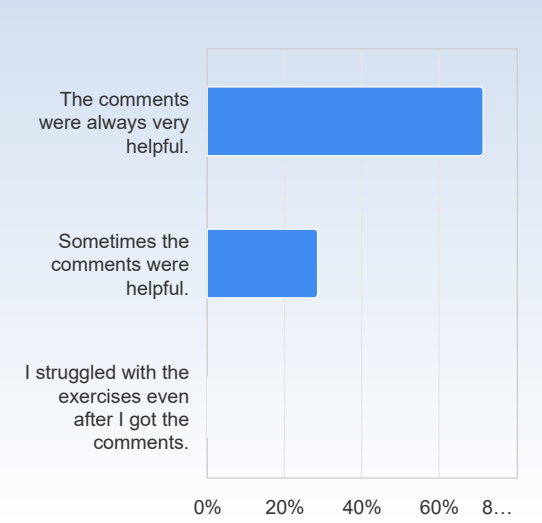
What do you think about the assignments?	Number of responses
I like to have the assignment exercises and they made me work with "the topic of the week"	6 (85.7%)
I did not work on the assignments because they were not mandatory.	1 (14.3%)
Total	7 (100.0%)



	Mean	Standard Deviation
What do you think about the assignments?	1.1	0.4

What do you think about the feedback you received for your submitted assignments?

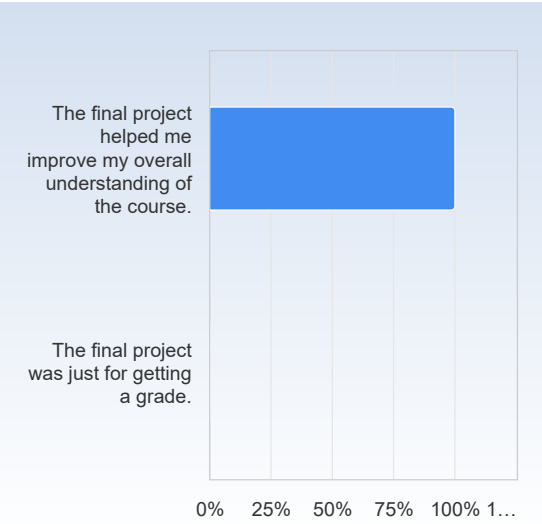
What do you think about the feedback you received for your submitted assignments?	Number of responses
The comments were always very helpful.	5 (71.4%)
Sometimes the comments were helpful.	2 (28.6%)
I struggled with the exercises even after I got the comments.	0 (0.0%)
Total	7 (100.0%)



	Mean	Standard Deviation
What do you think about the feedback you received for your submitted assignments?	1.3	0.5

What do you think about the final project?

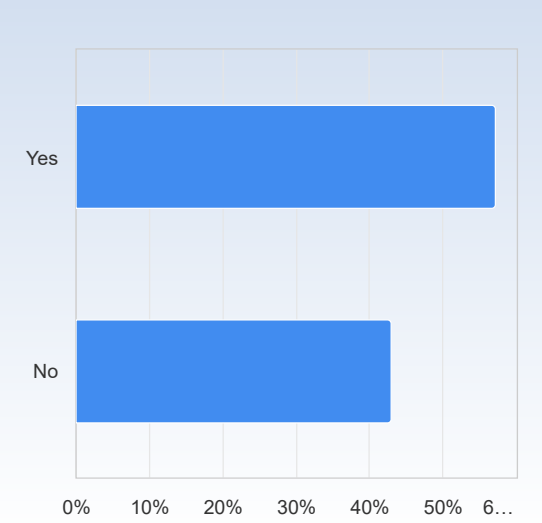
What do you think about the final project?	Number of responses
The final project helped me improve my overall understanding of the course.	7 (100.0%)
The final project was just for getting a grade.	0 (0.0%)
Total	7 (100.0%)



	Mean	Standard Deviation
What do you think about the final project?	1.0	0.0

I found it helpful to work in pair for the assignments and the final project.

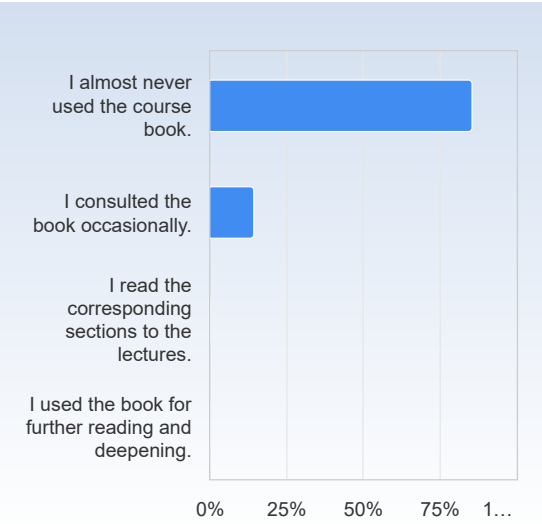
I found it helpful to work in pair for the assignments and the final project.	Number of responses
Yes	4 (57.1%)
No	3 (42.9%)
Total	7 (100.0%)



	Mean	Standard Deviation
I found it helpful to work in pair for the assignments and the final project.	1.4	0.5

How did you use the course book?

How did you use the course book?	Number of responses
I almost never used the course book.	6 (85.7%)
I consulted the book occasionally.	1 (14.3%)
I read the corresponding sections to the lectures.	0 (0.0%)
I used the book for further reading and deepening.	0 (0.0%)
Total	7 (100.0%)

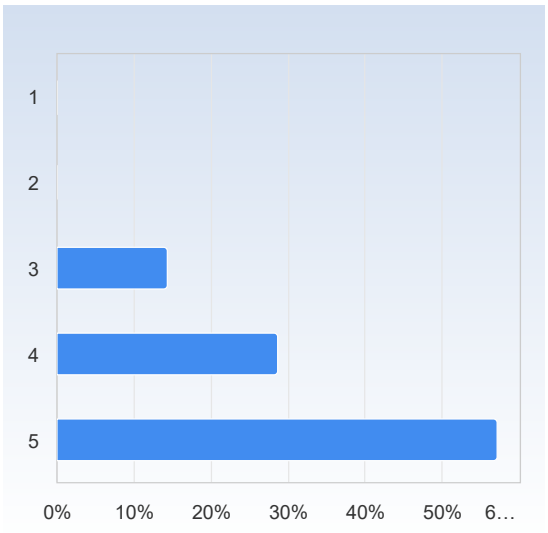


	Mean	Standard Deviation
How did you use the course book?	1.1	0.4

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.

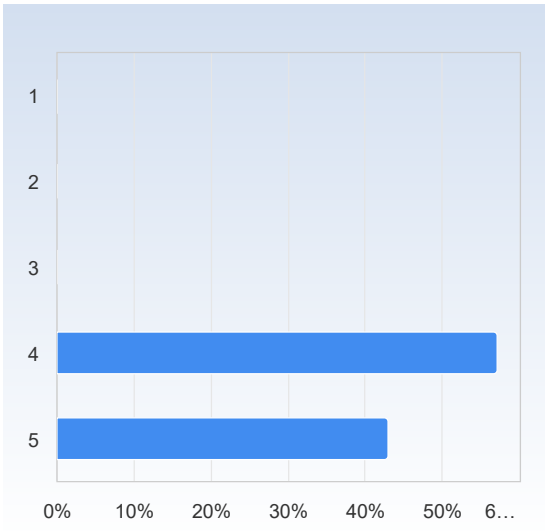
The way the course was taught and organised suited me.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	1 (14.3%)
4	2 (28.6%)
5	4 (57.1%)
Total	7 (100.0%)



	Mean	Standard Deviation
The way the course was taught and organised suited me.	4.4	0.8

The lectures were valuable for my learning.

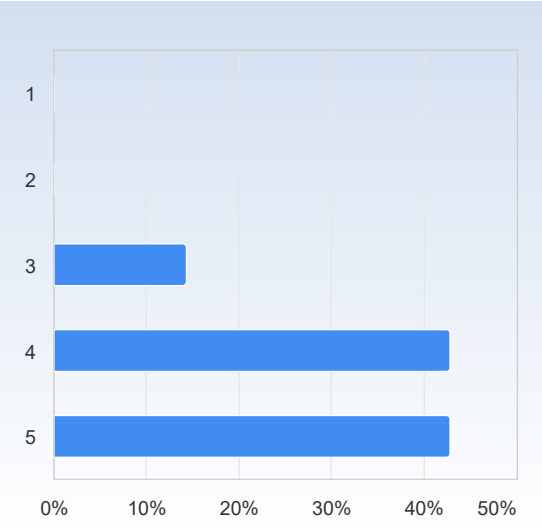
The lectures were valuable for my learning.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	0 (0.0%)
4	4 (57.1%)
5	3 (42.9%)
Total	7 (100.0%)



	Mean	Standard Deviation
The lectures were valuable for my learning.	4.4	0.5

The lecture notes were a valuable learning resource.

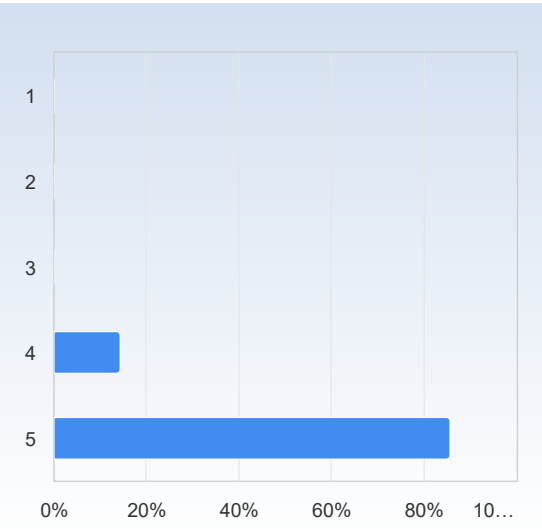
The lecture notes were a valuable learning resource.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	1 (14.3%)
4	3 (42.9%)
5	3 (42.9%)
Total	7 (100.0%)



	Mean	Standard Deviation
The lecture notes were a valuable learning resource.	4.3	0.8

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

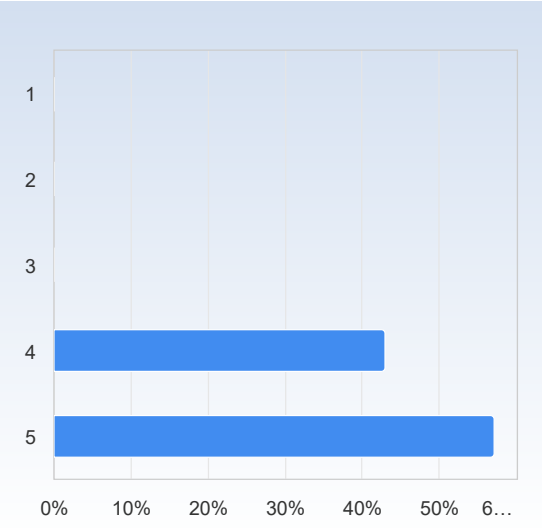
The communication with the teaching staff during the course was good.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	0 (0.0%)
4	1 (14.3%)
5	6 (85.7%)
Total	7 (100.0%)



	Mean	Standard Deviation
The communication with the teaching staff during the course was good.	4.9	0.4

The course had a reasonable workload.

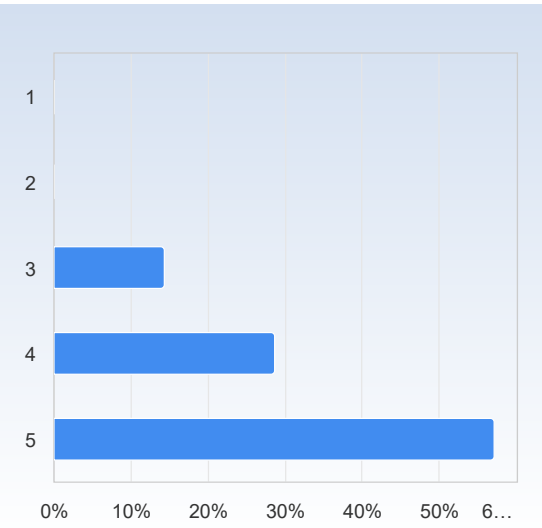
The course had a reasonable workload.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	0 (0.0%)
4	3 (42.9%)
5	4 (57.1%)
Total	7 (100.0%)



	Mean	Standard Deviation
The course had a reasonable workload.	4.6	0.5

Overall, I am satisfied with the course.

Overall, I am satisfied with the course.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	1 (14.3%)
4	2 (28.6%)
5	4 (57.1%)
Total	7 (100.0%)

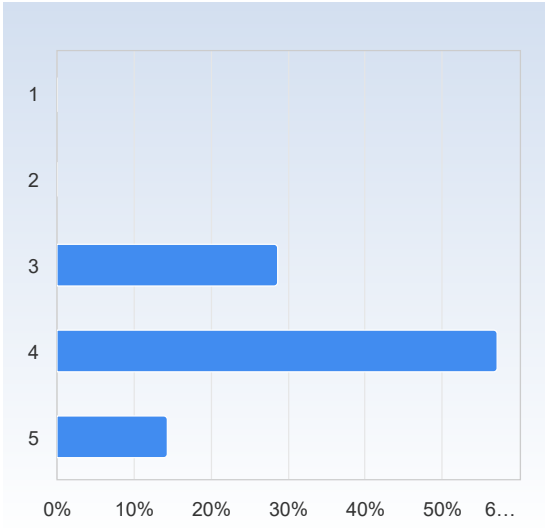


	Mean	Standard Deviation
Overall, I am satisfied with the course.	4.4	0.8

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 communicate mathematics orally and/or in writing.

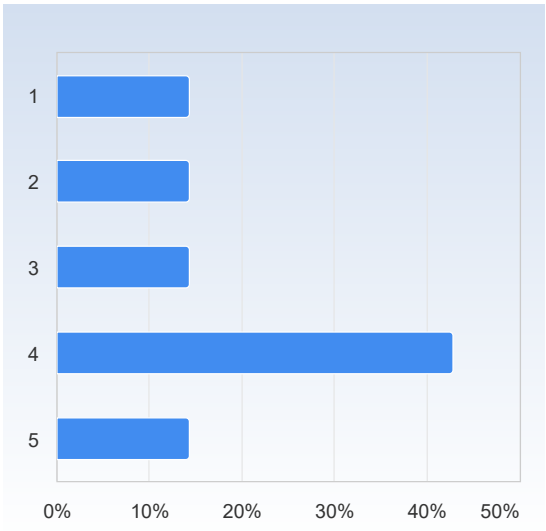
The course has increased my ability to communicate mathematics orally and/or in writing.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	2 (28.6%)
4	4 (57.1%)
5	1 (14.3%)
Total	7 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to communicate mathematics orally and/or in writing.	3.9	0.7

The course has increased my ability to collaborate with peers.

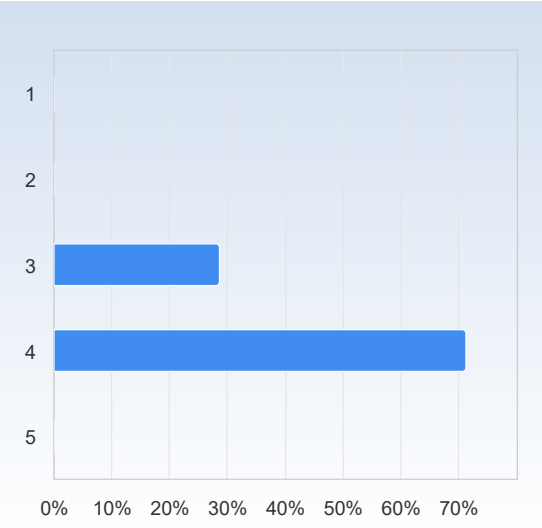
The course has increased my ability to collaborate with peers.	Number of responses
1	1 (14.3%)
2	1 (14.3%)
3	1 (14.3%)
4	3 (42.9%)
5	1 (14.3%)
Total	7 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to collaborate with peers.	3.3	1.4

The course has increased my ability to process information.

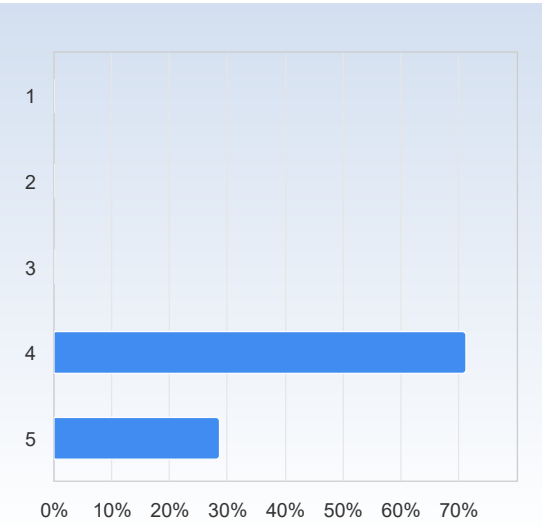
The course has increased my ability to process information.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	2 (28.6%)
4	5 (71.4%)
5	0 (0.0%)
Total	7 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to process information.	3.7	0.5

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	0 (0.0%)
4	5 (71.4%)
5	2 (28.6%)
Total	7 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to analyze and solve problems.	4.3	0.5

What do you appreciate in the course?

What do you appreciate in the course?
- weekly assignments and final project were most valuable for learning - in assignments, if stuck on a task, hints (general comments how to solve problem) were added by the TA
The lecture notes are an amazing resource that I really appreciate. The course is also very well organized and clear about what it expects from you. I didn't go to as many lectures as I had wished, but the ones I did go to were helpful and interesting. I also I really liked the weekly assignments as they were helpful in understanding the theory.
I think the weekly optional assignments were good, and the course assessments (final project with oral exam)
The course was taught well and the contents of it are quite useful and interesting. The exercises were utterly helpful in understanding the material, it was the primal way I learned.
I liked how the course was organized. I also enjoyed the lectures and thought that the lecturer did a great job both with explaining technical details and general ideas.

Do you have any suggestions? Please let us know.

Do you have any suggestions? Please let us know.
For the final project if have partner, create a peer feedback form to make sure both partners do equal work
More exercises, perhaps one on stability analysis would be helpful. Write notes more clearly, sometimes it felt like a notation hell and it took too much time to figure out what is written.
The oral exam was quite vague, it would have been helpful to have a list of questions to prepare for the oral exam like other math courses and not just the entire course work as it was quite challenging to understand what was important and had to be focused upon.
Some proof details were left out in the lecture notes, and it would have been helpful to have the proofs there in as much detail as during the lectures. It would also have been helpful if the complete lecture notes were uploaded after every lecture. When I missed a lecture, I couldn’t know how far we had gotten into that module during the lecture (without asking anyone).
I was a bit unsure of what was expected of me for the oral exam, but this was not a major issue.
- module 5, convergence of fx.pt. vs Newton: add explicit numerical example illustrating convergence order and rate