LUND UNIVERSITY
Faculty of Science

Course Analysis for MATM20 Mathematical Modelling, VT 2023

Course Information

Lecturer: Joachim Hein
Teaching assistants: None
Number of students: 19
16 newly registered and 3 re-registered.
7 students answered the course evaluation,

> 4 of them are enrolled on Bachelor'r Programme in Mathematics,
> 2 of them are enrolled on Master's Programme in Mathematics,
> 1 of them is enrolled on another Programme or as stand alone course

Examination

Project: 11 students passed.
Oral presentation: 11 students passed.
Oral examination: does not apply
Written examination: 9 students passed.

- Ordinary examination 31/05 2023: 9 students participated and 9 of them passed.
- Resit examination 23/08 2023: 1 student participated and 0 of them passed.

Final grades:
In all, 9 students, including 1 re-registered students, have got their final grade.
7 passed with distinction.
2 passed.

Course Evaluation

Summary of student's answers:
Seven students took the time to provide valuable feedback on the course. The overall satisfaction of the responders is very high, with an average rating of 4.4 out of 5.0. None of the responders left a negative overall rating. All of the individual question received high average scores of 3.7 out of 5.0 or better. Only 3 questions were rated below 4.0.
Six students offered textual feedback. The seminars are mentioned very positively. Some responders raise criticism on the exam. One responder would like the course to cover more of the material in the book.

Teachers' comments:
The course consisted out of lectures and seminars. All events were on campus in a classroom setting. For most parts the course followed a textbook. There were set exercises, which were discussed during the seminars in the following week. Students received Python programs and Excel sheets from the lecture demonstrations and sample solutions for the programming exercises.

As stated in the course plan, there was a written exam and project work. The project work was a group assignment with a project presentation in the end. All project members had to actively participate in the presentation.

I really appreciate the feedback on the course and how well the course was received. Regarding the comments on the exam, I like to point out, that mathematical modelling is about making the connection from the real world to the world of mathematics. This is in it's nature a bit more wordy than a "normal" course in mathematics. Considering the pass rate and the number of distinctions achieved in the exam, I can not see that the exam was to hard or examinees would have needed more time.

The course covered exactly those chapters in the text book, which are stated in the course plan. Covering more of the book would require revisions to the current course plan.

I am very pleased that all responders answered that they feel more confident about tackling unfamiliar problems. All responders gave this question a rating of 4 or better, with an average rating of 4.7 out of 5.0.

Changes from the previous course realisation:

Compared to the previous year, the number of computer demonstrations developing the code from scratch have been reduced. On a number of occasions, instead of developing the code in front of the class, the code was ready at the beginning of the lecture. This was done in response to feedback received on the 2022 running of the course. Judging by the comments, some responders comment positively on the coding sessions, while others are still a bit critical. It seems to me, the balance was approximately where it should be.

Suggestions for the next course realisation:

Based on the positive feedback received, no major changes are planned for future course realisations.

Mathematical Modelling (MATM20), Spring 2023

Answer Count: 7

I have studied this course as part of

I have studied this course as part of	Number of responses
Bachelor´s Programme in Mathematics	4 (57.1%)
Bachelor´s Programme in Physics, Theoretical Physics, Astronomy	0 (0.0%)
Bachelor´s Programme, other specialization	0 (0.0%)
Master's Programme in Mathematics	2 (28.6%)
Master´s Programme in Mathematical Statistics	0 (0.0%)
Master´s Programme, other specialization	0 (0.0%)
Teacher Education	0 (0.0%)
other programme or as stand alone course	1 (14.3%)
Total	7 (100.0%)
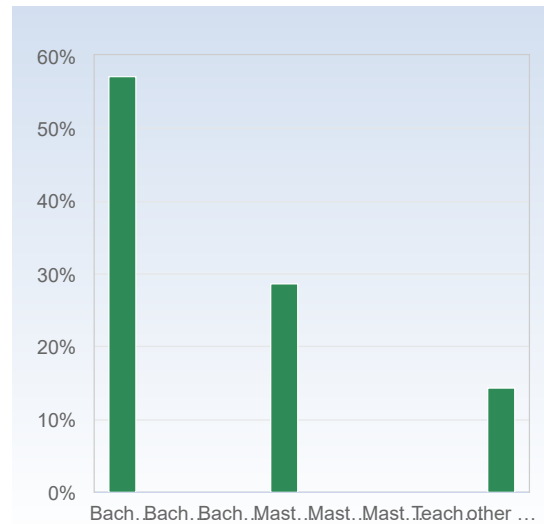
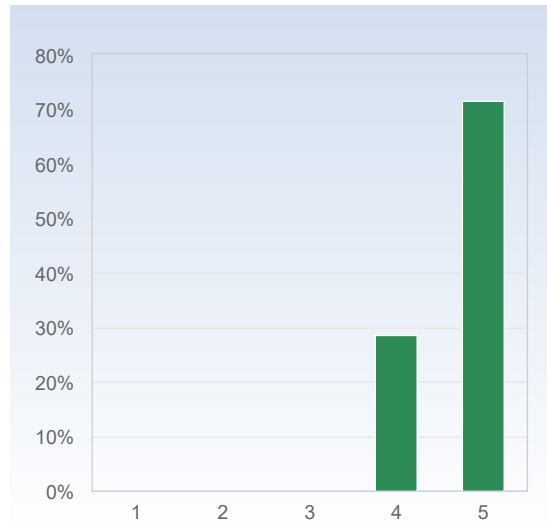|	Mean	Standard Deviation
I have studied this course as part of	2.9	2.7

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

	Mean	Standard Deviation
2. My prior knowledge has been sufficient to assimilate the contents of this course.	4.7	0.5

3. I have participated actively in the course.

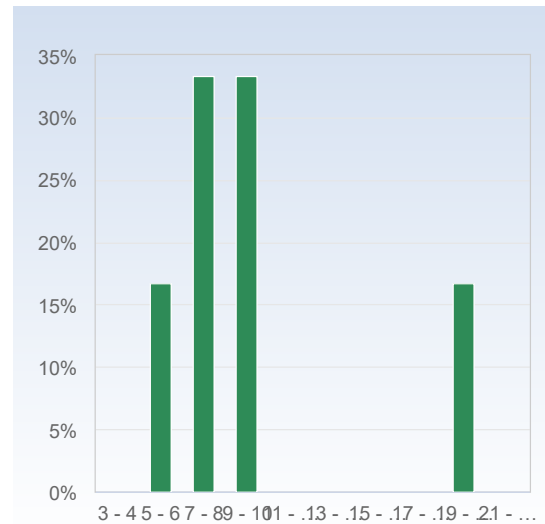| 3. I have participated actively in the course.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	3 (42.9%)
4	1 (14.3%)
5	3 (42.9%)
Total	7 (100.0%)
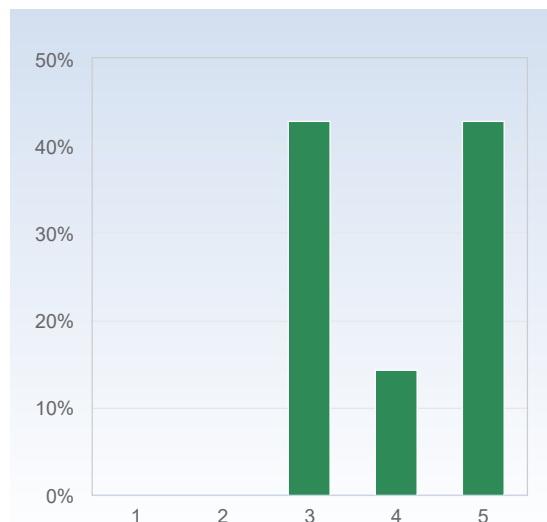
	Mean	Standard Deviation
3. I have participated actively in the course.	4.0	1.0

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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 (16.7%)
7 - 8	2 (33.3%)
9 - 10	2 (33.3%)
11 - 12	0 (0.0%)
13 - 14	0 (0.0%)
15 - 16	0 (0.0%)
17 - 18	0 (0.0%)
19 - 20	1 (16.7%)
21 - 22	0 (0.0%)
Total	6 (100.0%)

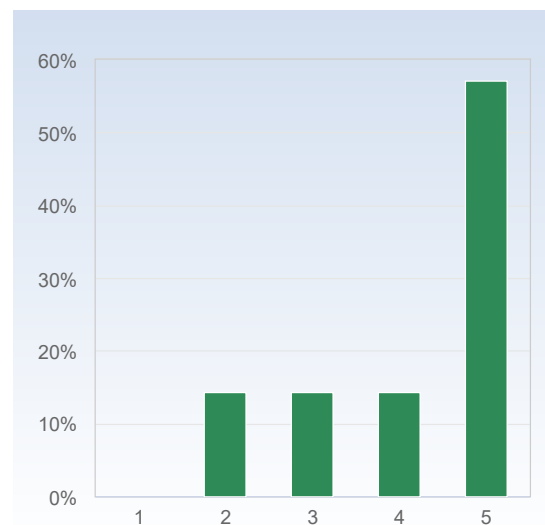|	Mean	Standard Deviation
Average number of hours spent in total on the course per week (including scheduled activities):	10.0	5.2

The course in general

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

The way the course was taught and organised suited me.

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

	Mean	Standard Deviation
The way the course was taught and organised suited me.	4.1	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	0 (0.0%)
3	0 (0.0%)
4	2 (33.3%)
5	4 (66.7%)
Total	6 (100.0%)

	Mean	Standard Deviation
The number of teacher lead activities (lectures, seminars etc.) has been satisfactory.	4.7	0.5

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	5 (71.4%)
5	2 (28.6%)
Total	7 (100.0%)
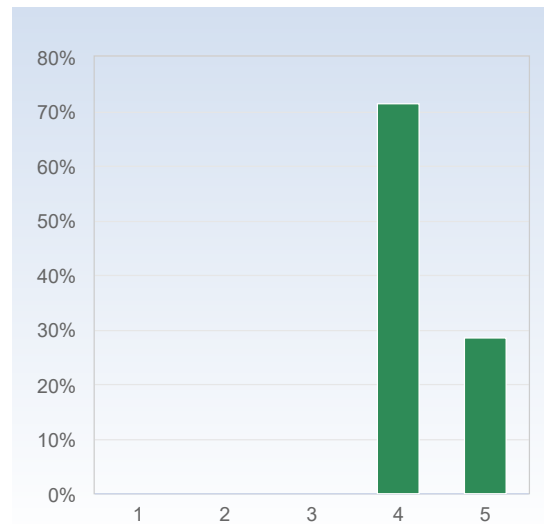
	Mean	Standard Deviation
The lectures were valuable for my learning.	4.3	0.5

The seminars were valuable for my learning.

The seminars were valuable for my learning.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	1 (16.7%)
4	3 (50.0%)
5	2 (33.3%)
Total	6 (100.0%)
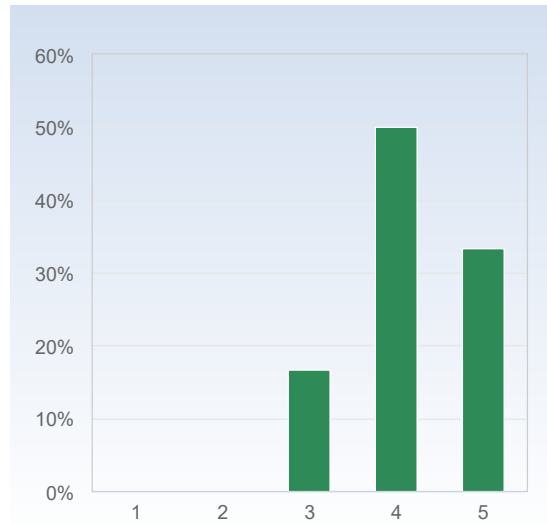
	Mean	Standard Deviation
The seminars were valuable for my learning.	4.2	0.8

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	0 (0.0%)
4	3 (42.9%)
5	4 (57.1%)
Total	7 (100.0%)
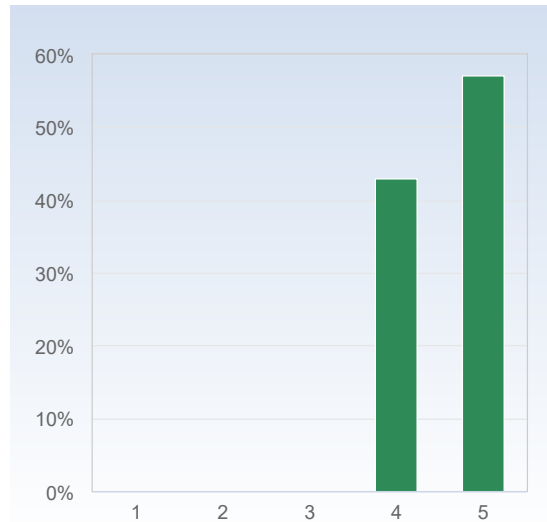
	Mean	Standard Deviation
Studying on my own was valuable for my learning.	4.6	0.5

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 (14.3%)
3	1 (14.3%)
4	0 (0.0%)
5	5 (71.4%)
Total	7 (100.0%)
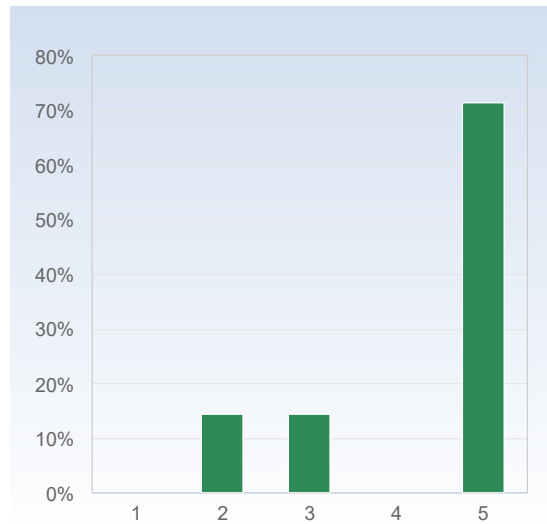
	Mean	Standard Deviation
The course literature/material was a valuable learning resource.	4.3	1.3

The information I received before the course start was satisfactory.

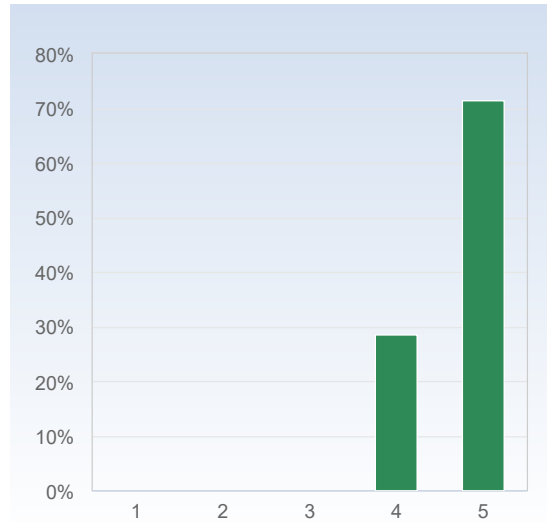| The information I received before the course start was satisfactory.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	1 (16.7%)
4	1 (16.7%)
5	4 (66.7%)
Total	6 (100.0%)
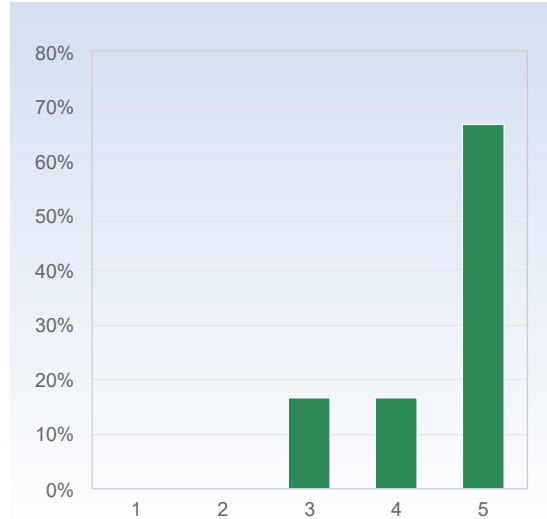
	Mean	Standard Deviation
The information I received before the course start was satisfactory.	4.5	0.8

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	2 (28.6%)
5	5 (71.4%)
Total	7 (100.0%)

	Mean	Standard Deviation
The communication with the teaching staff during the course was good.	4.7	0.5

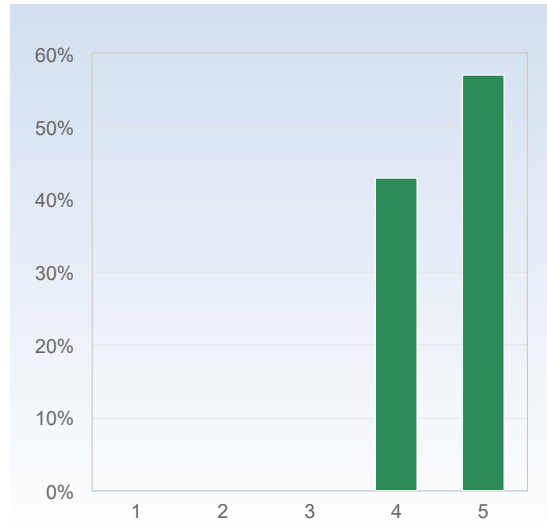## It was clear throughout the course what was expected of me.

It was clear throughout the course what was expected of me.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	2 (28.6%)
4	1 (14.3%)
5	4 (57.1%)
Total	7 (100.0%)
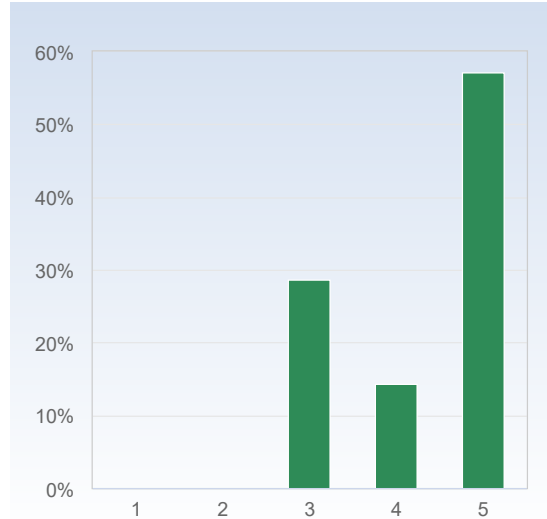
	Mean	Standard Deviation
It was clear throughout the course what was expected of me.	4.3	1.0

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	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
I have received valuable feedback from my teacher/teachers during the course.	4.6	0.5

The course had a reasonable workload.

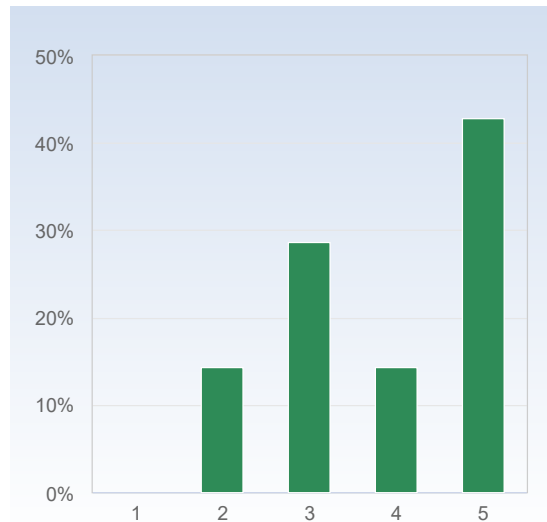| The course had a reasonable workload.	Number of responses
1	0 (0.0%)
2	1 (14.3%)
3	0 (0.0%)
4	1 (14.3%)
5	5 (71.4%)
Total	7 (100.0%)
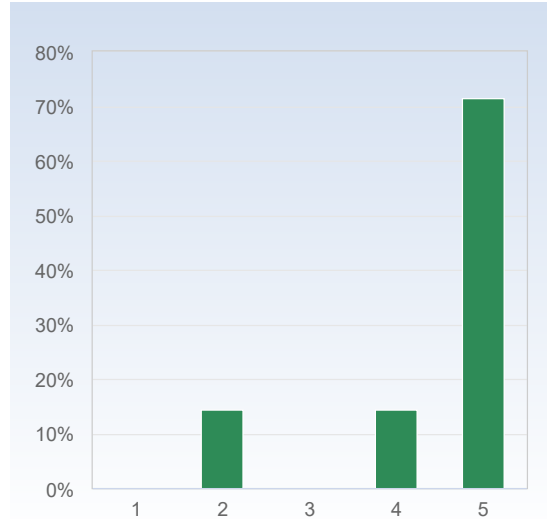
	Mean	Standard Deviation
The course had a reasonable workload.	4.4	1.1

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 (14.3%)
3	2 (28.6%)
4	1 (14.3%)
5	3 (42.9%)
Total	7 (100.0%)

	Mean	Standard Deviation
The workload was evenly distributed throughout the course.	3.9	1.2

The examination matched the contents and level of the course.

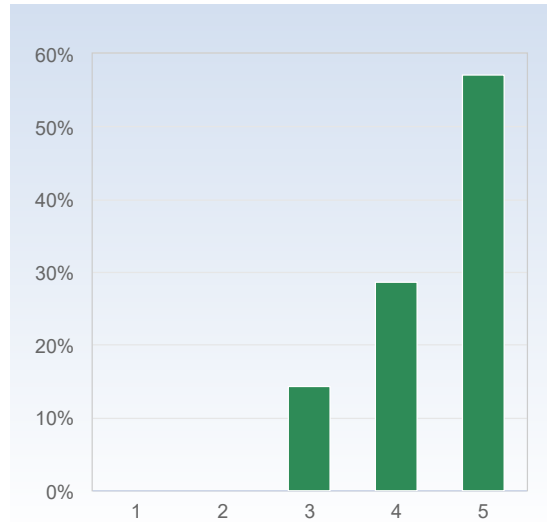| The examination matched the contents and level of the course.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	0 (0.0%)
4	2 (28.6%)
5	5 (71.4%)
Total	7 (100.0%)
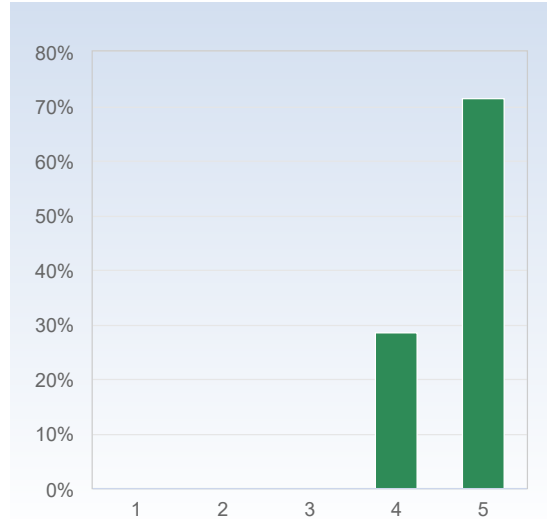
	Mean	Standard Deviation
The examination matched the contents and level of the course.	4.7	0.5

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

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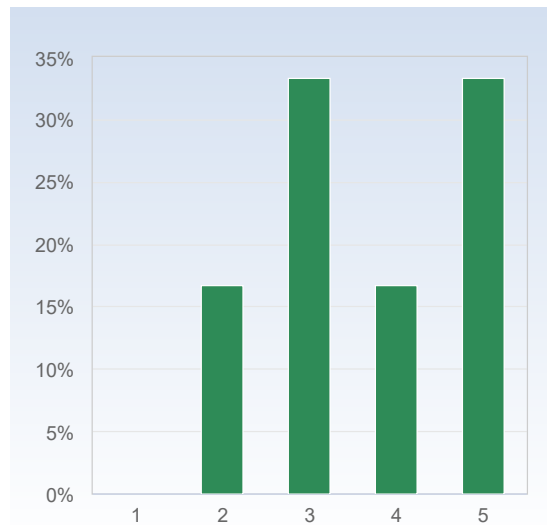
On the development of generic skills

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

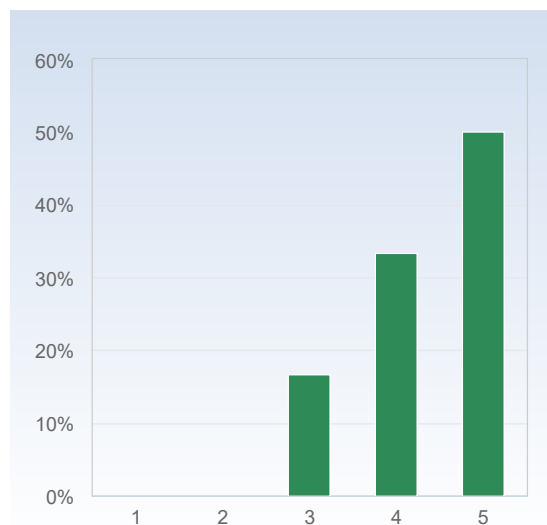### The course has increased my ability to read a mathematical text.

The course has increased my ability to read a mathematical text.	Number of responses
1	0 (0.0%)
2	1 (16.7%)
3	2 (33.3%)
4	1 (16.7%)
5	2 (33.3%)
Total	6 (100.0%)

	Mean	Standard Deviation
The course has increased my ability to read a mathematical text.	3.7	1.2

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	0 (0.0%)
2	0 (0.0%)
3	1 (16.7%)
4	2 (33.3%)
5	3 (50.0%)
Total	6 (100.0%)

	Mean	Standard Deviation
The course has increased my ability to communicate the subject in writing.	4.3	0.8

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

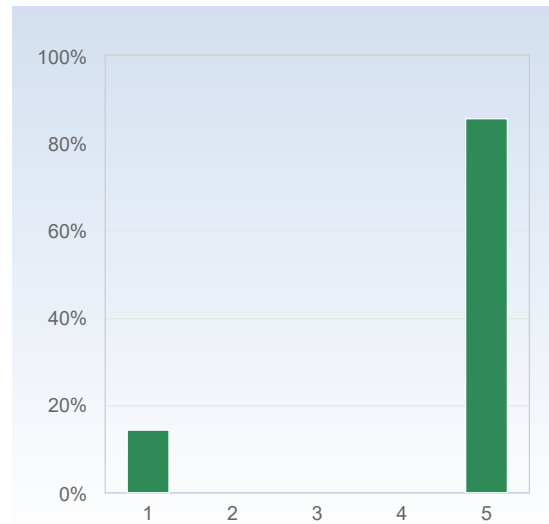| The course has increased my ability to communicate the subject orally.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	0 (0.0%)
4	2 (33.3%)
5	4 (66.7%)
Total	6 (100.0%)

	Mean	Standard Deviation
The course has increased my ability to communicate the subject orally.	4.7	0.5

The course has increased my ability to cooperate.

The course has increased my ability to cooperate.	Number of responses
1	1 (14.3%)
2	0 (0.0%)
3	0 (0.0%)
4	0 (0.0%)
5	6 (85.7%)
Total	7 (100.0%)

	Mean	Standard Deviation
The course has increased my ability to cooperate.	4.4	1.5

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

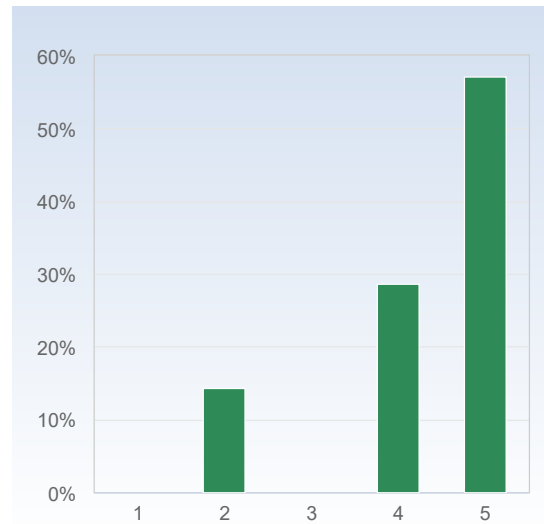| The course has increased my ability to search and process information.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	4 (57.1%)
4	1 (14.3%)
5	2 (28.6%)
Total	7 (100.0%)
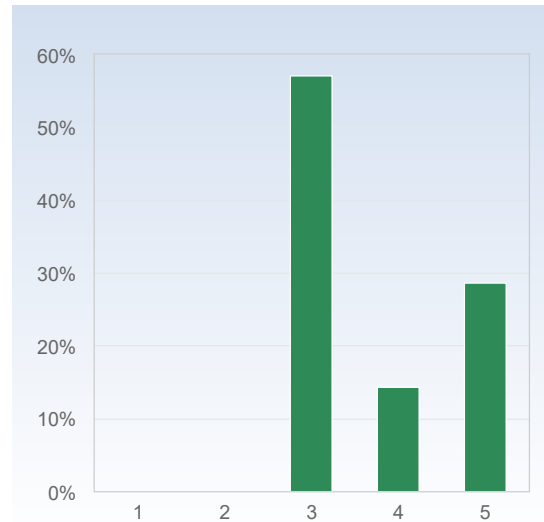
	Mean	Standard Deviation
The course has increased my ability to search and process information.	3.7	1.0

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	1 (14.3%)
3	0 (0.0%)
4	2 (28.6%)
5	4 (57.1%)
Total	7 (100.0%)

	Mean	Standard Deviation
The course has increased my ability to analyze and solve problems.	4.3	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	0 (0.0%)
2	0 (0.0%)
3	0 (0.0%)
4	2 (33.3%)
5	4 (66.7%)
Total	6 (100.0%)

	Mean	Standard Deviation
As a result of this course, I feel confident about tackling unfamiliar problems.	4.7	0.5

What did you appreciate most with the course?

What did you appreciate most with the course?
The seminars
Joachim was nice and approachable, and explained very well. The course was very well structured and planned. The projects were fun. The textbook was good as well.
I learned a lot, and the course contents were very interesting.
That it was very in tune with practicing Mathematics outside University. I think this course has taught us the most about that of all courses.
Joachim is a great teacher and wants to present things in a really solid manner. This, however, comes at a cost. At times the code that corresponded to something being presented during the class was written during the class, which lead to a lot of downtime which could have been pushed to focus on the topic. Such a thing is not a criticism per se, because we seemed to cover everything Joachim wished to cover in the course.
The teacher's willingness to discuss basically anything.
Solving the tasks during the seminar and the computer examples during the lectures.

What do you think should be improved?

What do you think should be improved?
Allowing calculators in the exam. Half the time spent in the exam was tracking back computation mistakes and computing calculations that would have taking a minute with a calculator. In consequence, the exam became way too long for the time available.
I think the projects could be moved to an earlier time, because near the end of the term everyone is busy with exams, but it also would be a great motivation to finally use the things we learned independently.
The time for the Exam was to short. Everyone was struggling to finish in time. More time, like one more hour would have been good. In this course you need to write a lot more text than other mathematical courses, so you naturally need more time.
Following the previous part we should cover the entire course book (in particular, the last chapter). Some of the latter parts of the book seems really interesting and would be a blessing to be taught.
The type-along parts of the lectures went quite slow in my opinion, but I understand that it can help other student's ability to learn better.

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.
No
Not at all, was a great experience, thank you for the course!