



LUNDS
UNIVERSITET

Matematikcentrum

Matematik NF

Course Analysis for Fourier Analysis (MATM38) Spring 2022

Lecturer: Jörg Weber

Number of students: There were 23 registered students.

Examination

8 students participated in the ordinary written examination (5 credits) and 6 of them passed.

6 students participated in the oral exam (2.5 credits) after the ordinary written examination and 5 of them passed.

6 students participated in the resit examination and 5 of them passed.

6 students participated in the oral exam after the resit examination and 6 of them passed.

11 students have passed all examination parts, 6 of them with the grade *pass with distinction*.

Course evaluation

Summary of students answers: 4 students answered the course evaluation questionnaire that was open during three weeks, starting on the day of the ordinary written examination. The students answers are summarised in the following pages. The majority of the students seems to be satisfied with how the course was taught and organised, but not so much with the content of the course.

Teacher's comments: In the course evaluation many students pointed out that the course content is not satisfying and there is too much of an overlap with the Bachelor course "Linear Analysis". In the course plan only knowledge of the Riemann integral, but not of the Lebesgue integral is a prerequisite, whence the Lebesgue integral cannot be used in the course. In particular, many results cannot be formulated or lose a lot of their power when not having the concept of Lebesgue integrability at hand. Both in the students' and also in my opinion, this is a major disadvantage of the course plan. This is well-known and will be changed soon.

Changes from the previous course realisation: The biggest change was that the teaching was on campus and not online as before. The same literature as the previous course realisations was used and I differed only slightly in the taught content and the structure of the course. I had sent out a survey before the start of the course in order to measure the students' previous knowledge and to see how fast I could go through the first topics in view of the above-mentioned overlap. As a result, I spent a bit less time on the first topics than the previous course realisation and could therefore include a bit more in the end instead.

Suggestions for the next course realisation: See above. The course plan will be revised.

Course leader, date

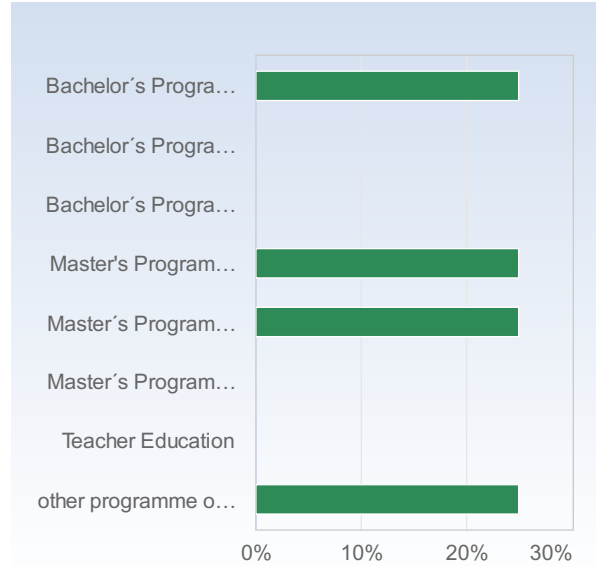
Jörg Weber, 16 september 2022.

MATM38 - Fourier Analysis Spring 2022

Answer Count: 4

I have studied this course as part of

I have studied this course as part of	Number of responses
Bachelor's Programme in Mathematics	1 (25.0%)
Bachelor's Programme in Physics, Theoretical Physics, Astronomy	0 (0.0%)
Bachelor's Programme, other specialization	0 (0.0%)
Master's Programme in Mathematics	1 (25.0%)
Master's Programme in Mathematical Statistics	1 (25.0%)
Master's Programme, other specialization	0 (0.0%)
Teacher Education	0 (0.0%)
other programme or as stand alone course	1 (25.0%)
Total	4 (100.0%)

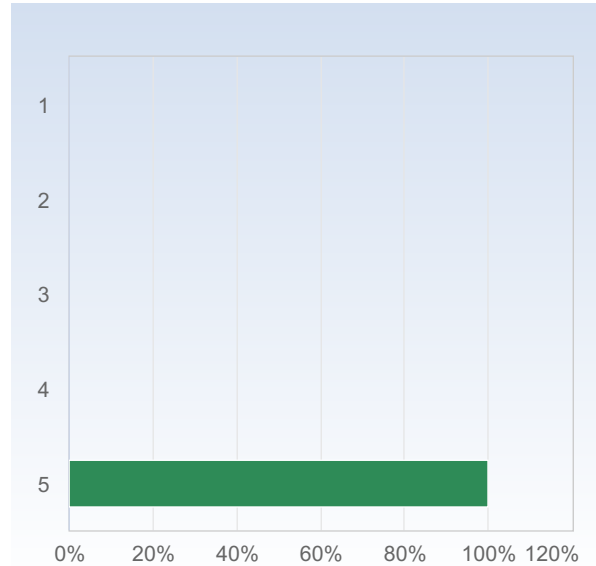


I have studied this course as part of	Mean	Standard Deviation
I have studied this course as part of	4.5	2.9

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.

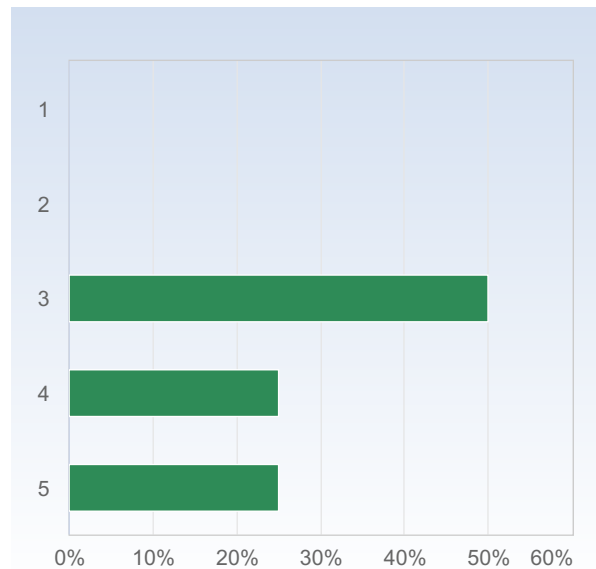
2. My prior knowledge has been sufficient to assimilate the contents of this course.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	0 (0.0%)
4	0 (0.0%)
5	4 (100.0%)
Total	4 (100.0%)



2. My prior knowledge has been sufficient to assimilate the contents of this course.	Mean	Standard Deviation
	5.0	0.0

3. I have participated actively in the course.

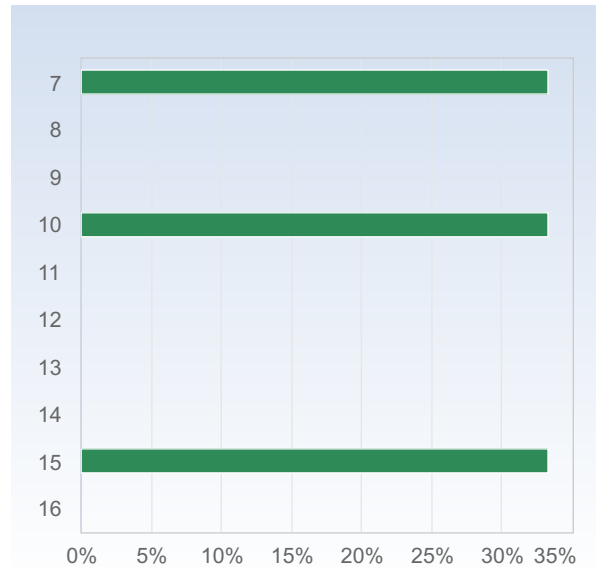
3. I have participated actively in the course.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	2 (50.0%)
4	1 (25.0%)
5	1 (25.0%)
Total	4 (100.0%)



3. I have participated actively in the course.	Mean	Standard Deviation
	3.8	1.0

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
7	1 (33.3%)
8	0 (0.0%)
9	0 (0.0%)
10	1 (33.3%)
11	0 (0.0%)
12	0 (0.0%)
13	0 (0.0%)
14	0 (0.0%)
15	1 (33.3%)
16	0 (0.0%)
Total	3 (100.0%)



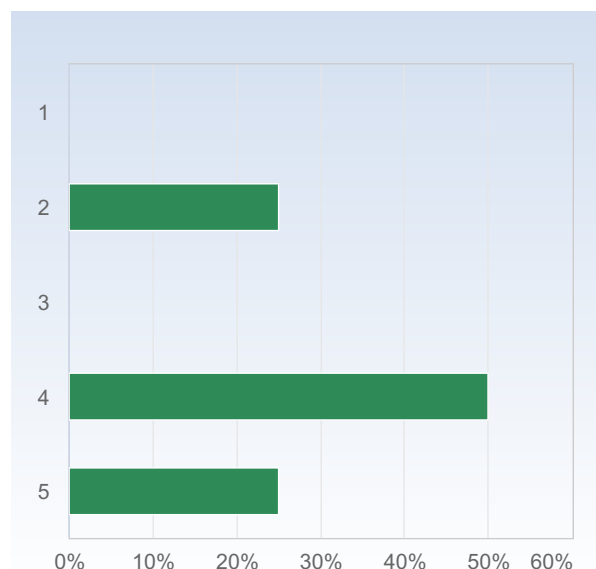
	Mean	Standard Deviation
Average number of hours spent in total on the course per week (including scheduled activities):	10.7	4.0

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.

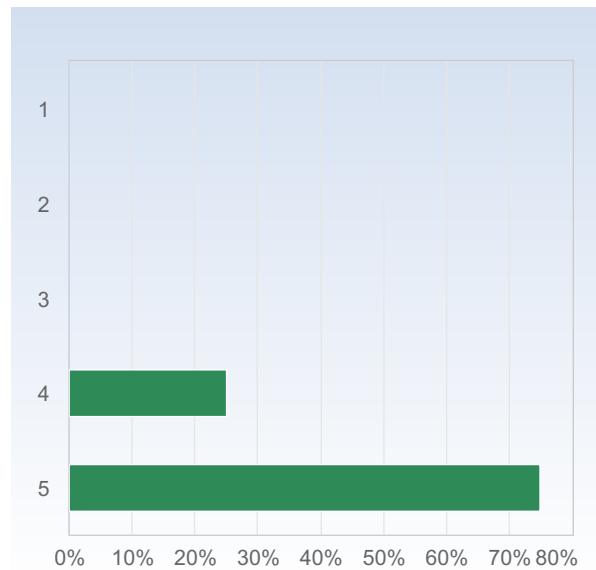
The way the course was taught and organised suited me.	Number of responses
1	0 (0.0%)
2	1 (25.0%)
3	0 (0.0%)
4	2 (50.0%)
5	1 (25.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
The way the course was taught and organised suited me.	3.8	1.3

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

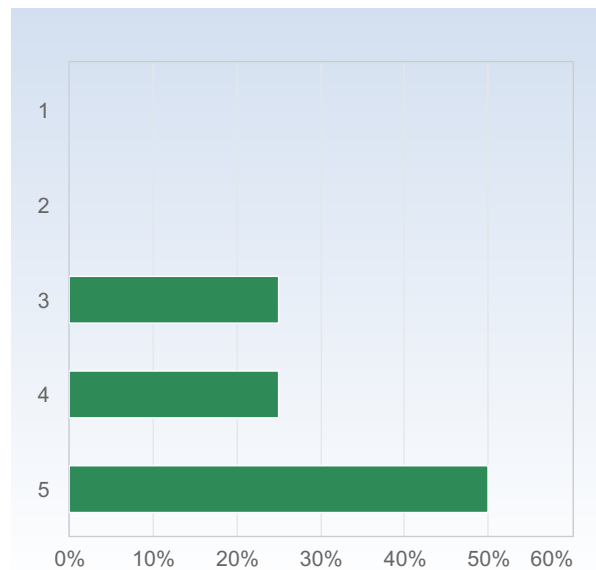
The number of teacher lead activities (lectures, seminars etc.) has been satisfactory.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	0 (0.0%)
4	1 (25.0%)
5	3 (75.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
The number of teacher lead activities (lectures, seminars etc.) has been satisfactory.	4.8	0.5

The lectures were valuable for my learning.

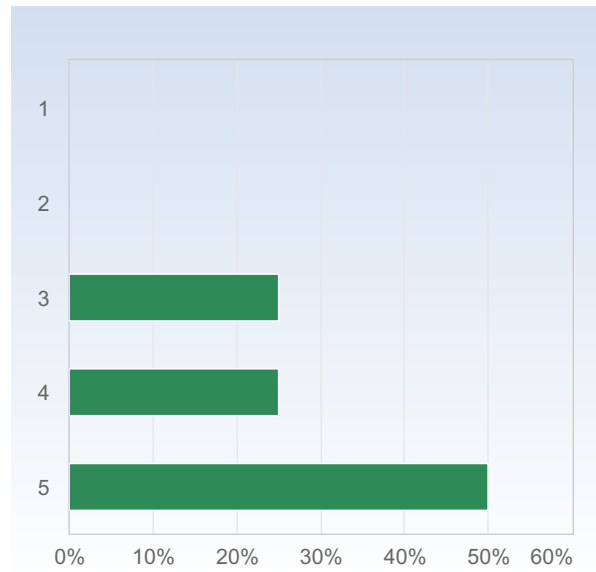
The lectures were valuable for my learning.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	1 (25.0%)
4	1 (25.0%)
5	2 (50.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
The lectures were valuable for my learning.	4.2	1.0

The seminars were valuable for my learning.

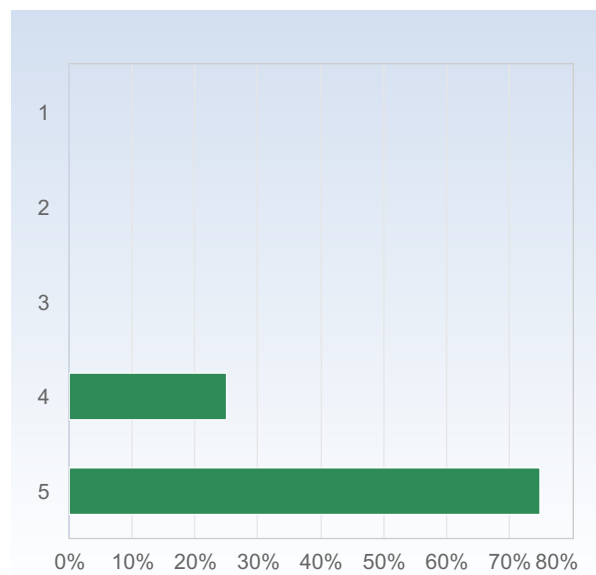
The seminars were valuable for my learning.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	1 (25.0%)
4	1 (25.0%)
5	2 (50.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
The seminars were valuable for my learning.	4.2	1.0

Studying on my own was valuable for my learning.

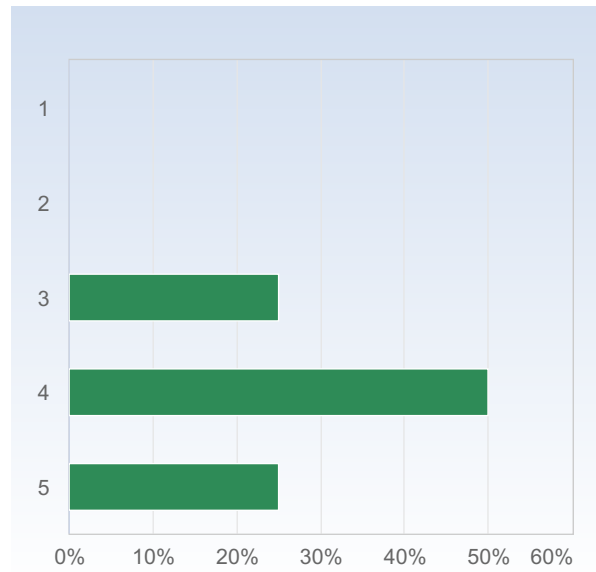
Studying on my own was valuable for my learning.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	0 (0.0%)
4	1 (25.0%)
5	3 (75.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
Studying on my own was valuable for my learning.	4.8	0.5

The course literature/material was a valuable learning resource.

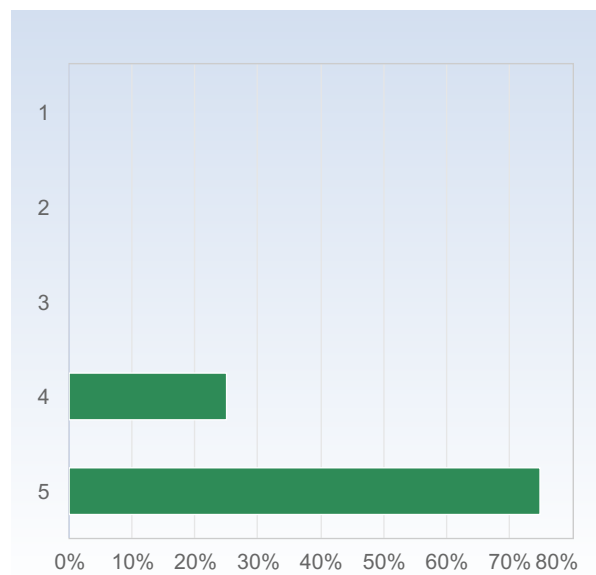
The course literature/material was a valuable learning resource.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	1 (25.0%)
4	2 (50.0%)
5	1 (25.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
The course literature/material was a valuable learning resource.	4.0	0.8

The information I received before the course start was satisfactory.

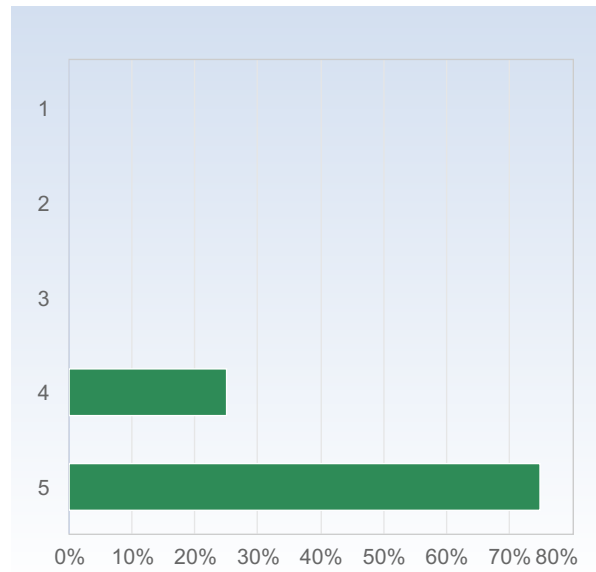
The information I received before the course start was satisfactory.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	0 (0.0%)
4	1 (25.0%)
5	3 (75.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
The information I received before the course start was satisfactory.	4.8	0.5

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

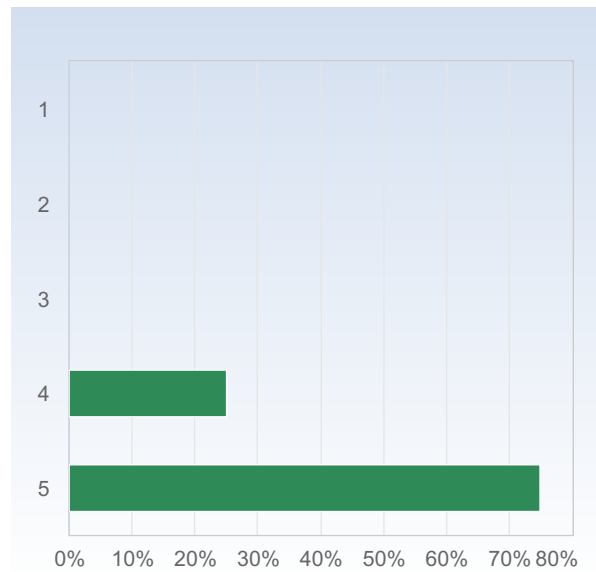
The communication with the teaching staff during the course was good.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	0 (0.0%)
4	1 (25.0%)
5	3 (75.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
The communication with the teaching staff during the course was good.	4.8	0.5

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

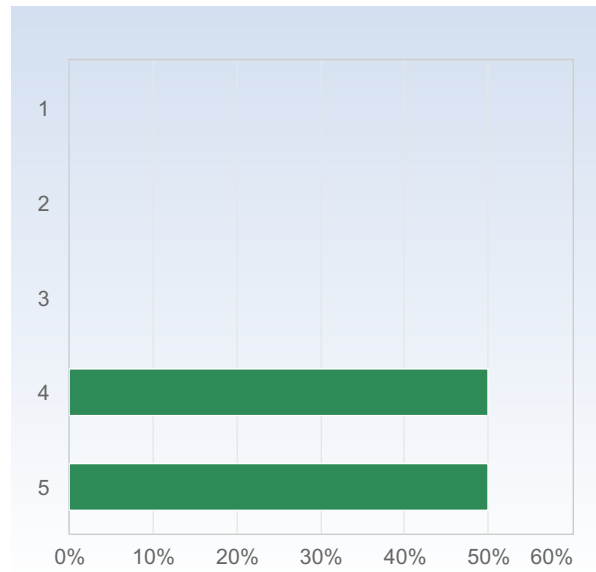
It was clear throughout the course what was expected of me.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	0 (0.0%)
4	1 (25.0%)
5	3 (75.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
It was clear throughout the course what was expected of me.	4.8	0.5

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

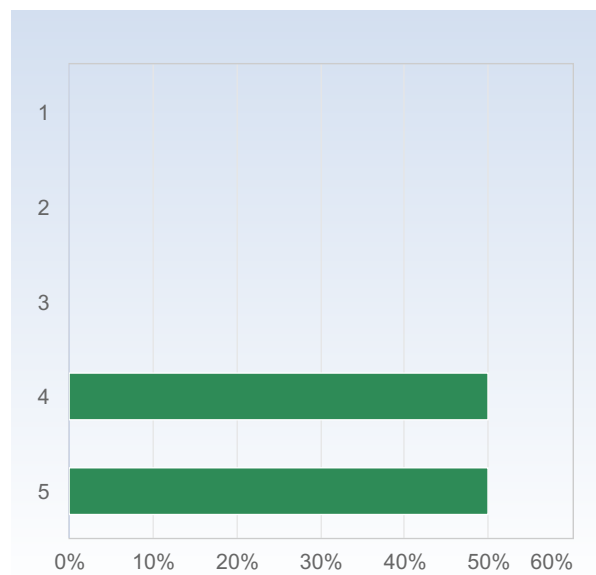
I have received valuable feedback from my teacher/teachers during the course.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	0 (0.0%)
4	2 (50.0%)
5	2 (50.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
I have received valuable feedback from my teacher/teachers during the course.	4.5	0.6

The course had a reasonable workload.

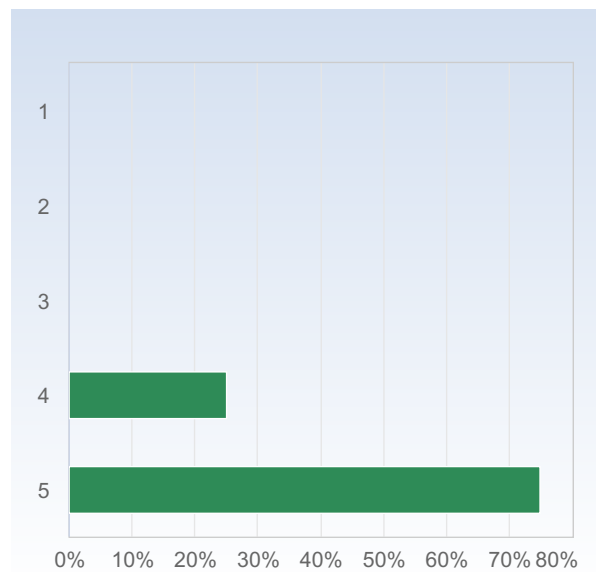
The course had a reasonable workload.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	0 (0.0%)
4	2 (50.0%)
5	2 (50.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
The course had a reasonable workload.	4.5	0.6

The workload was evenly distributed throughout the course.

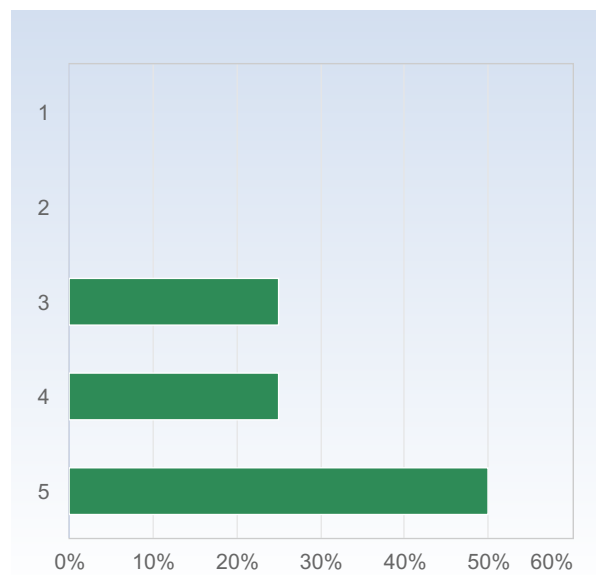
The workload was evenly distributed throughout the course.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	0 (0.0%)
4	1 (25.0%)
5	3 (75.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
The workload was evenly distributed throughout the course.	4.8	0.5

The examination matched the contents and level of the course.

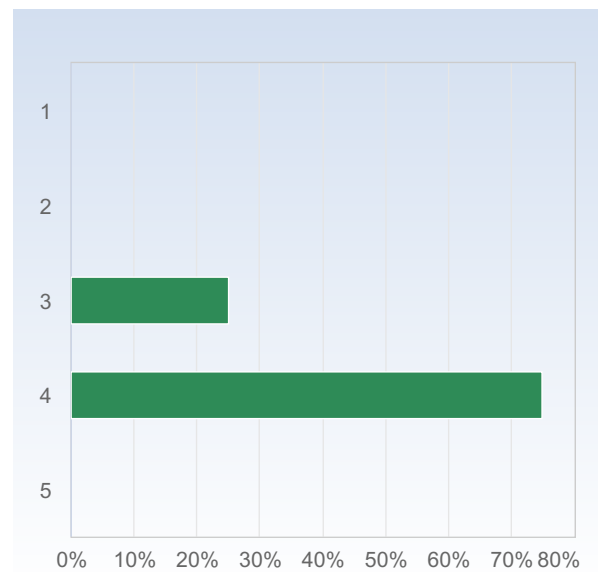
The examination matched the contents and level of the course.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	1 (25.0%)
4	1 (25.0%)
5	2 (50.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
The examination matched the contents and level of the course.	4.2	1.0

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 (25.0%)
4	3 (75.0%)
5	0 (0.0%)
Total	4 (100.0%)



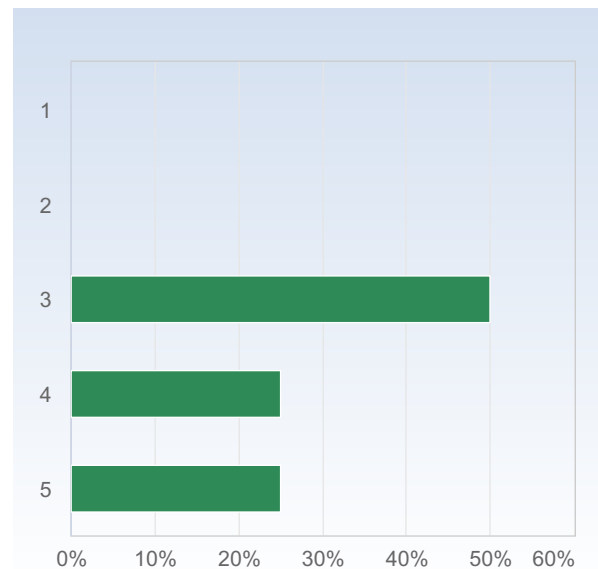
	Mean	Standard Deviation
Overall, I am satisfied with the course.	3.8	0.5

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.

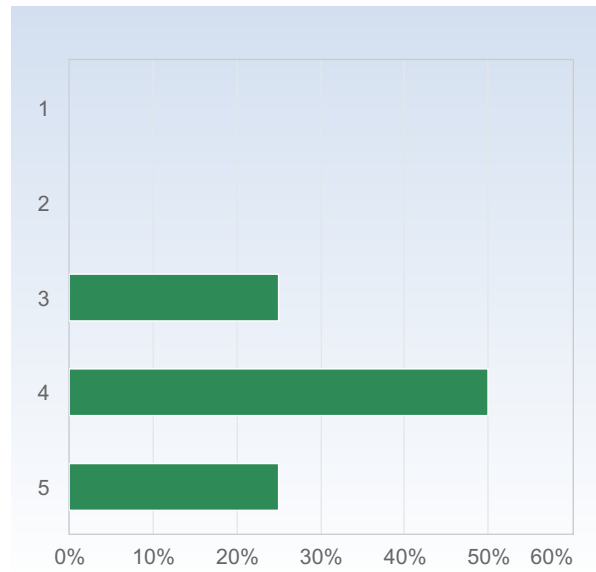
The course has increased my ability to read a mathematical text.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	2 (50.0%)
4	1 (25.0%)
5	1 (25.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to read a mathematical text.	3.8	1.0

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

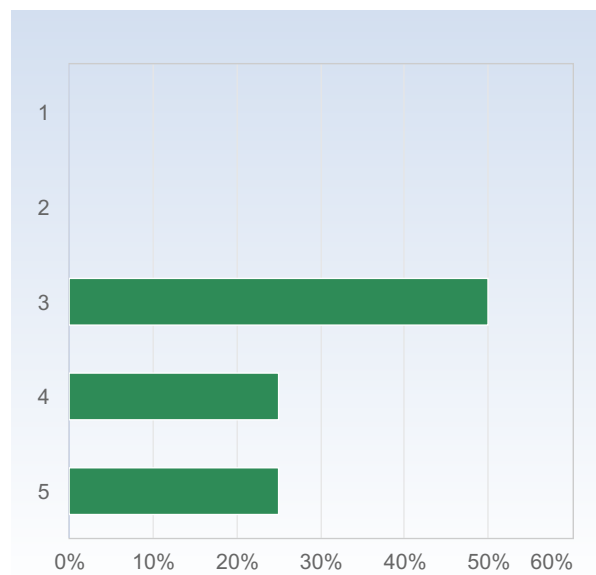
The course has increased my ability to communicate the subject in writing.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	1 (25.0%)
4	2 (50.0%)
5	1 (25.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to communicate the subject in writing.	4.0	0.8

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

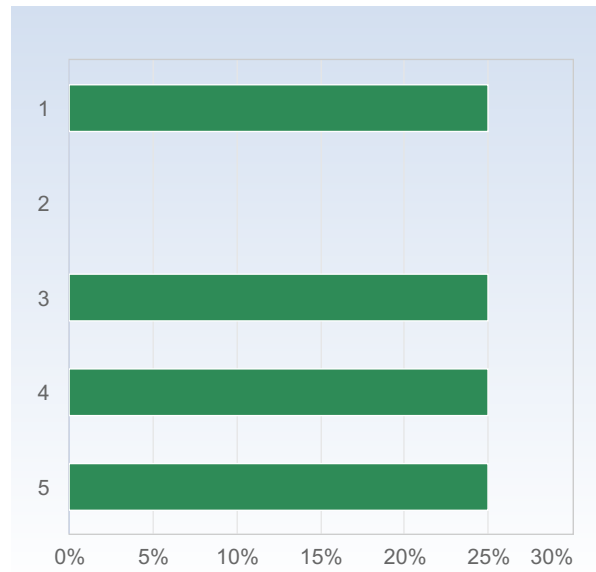
The course has increased my ability to communicate the subject orally.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	2 (50.0%)
4	1 (25.0%)
5	1 (25.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to communicate the subject orally.	3.8	1.0

The course has increased my ability to cooperate.

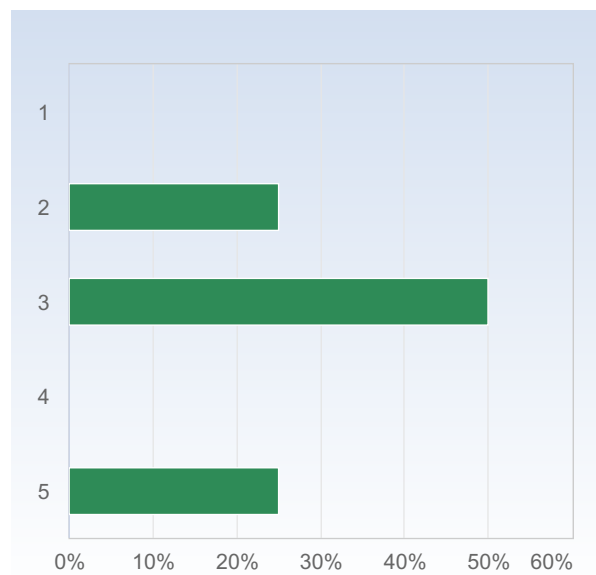
The course has increased my ability to cooperate.	Number of responses
1	1 (25.0%)
2	0 (0.0%)
3	1 (25.0%)
4	1 (25.0%)
5	1 (25.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to cooperate.	3.2	1.7

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

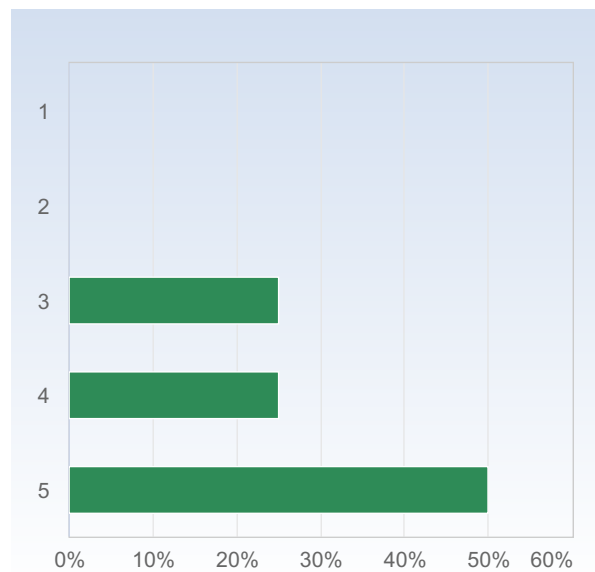
The course has increased my ability to search and process information.	Number of responses
1	0 (0.0%)
2	1 (25.0%)
3	2 (50.0%)
4	0 (0.0%)
5	1 (25.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to search and process information.	3.2	1.3

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

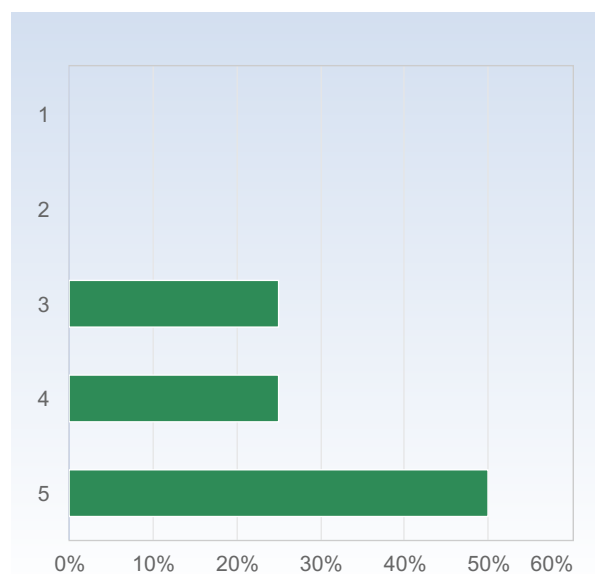
The course has increased my ability to analyze and solve problems.	Number of responses
1	0 (0.0%)
2	0 (0.0%)
3	1 (25.0%)
4	1 (25.0%)
5	2 (50.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to analyze and solve problems.	4.2	1.0

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	1 (25.0%)
4	1 (25.0%)
5	2 (50.0%)
Total	4 (100.0%)



	Mean	Standard Deviation
As a result of this course, I feel confident about tackling unfamiliar problems.	4.2	1.0

What did you appreciate most with the course?

What did you appreciate most with the course?

I prefer this course's seminar format over the one I am used to (i.e. where students solve exercises at home and then merely present them in class).

The course book was mostly good.

The seminars had a great structure, the course book had excellent exercises and problems. The teacher frequently made interesting remarks about how some results or general topics could be generalized/extended.

The teacher seemed like he cares about the students.

What do you think should be improved?

What do you think should be improved?

I think there is far too much overlap with the prerequisite course linear analysis. Stein is a great book but I think it is much more suitable as a first introduction to the subject, rather than a follow-up course. I really wish this course would have required knowledge in integration, topology and algebra and instead have treated Fourier analysis on LCA groups. Another possibility for improvement is to just simply do roughly the current course content but with the Lebesgue integral rather than the Riemann integral. Overall, I think this is a well-taught course with a terrible course plan.

I found the hand ins a bit off. They did not really give me a better understanding of the topic, and the amount of time that they took to make did not add up to what one learned or received in credit. That time would have been much better spent doing for example regular exercises or reading. If hand-ins were to be used again, in my opinion, they should be more connected to the material, give a better understanding for the material. Also they should not take that much time to do.

This course does not assume any knowledge about the Lebesgue integral, and because of this some of the results must be cut down to simpler special cases.

The presentation of the teacher during class could be more catchy (eye contact with the students, some questions for the class from time to time,...)

Maybe the course would make sense to place it at a later point in the study. Because it explains a concepts (\mathbb{R}^2 spaces, different types of convergence,...) which are already known by master students and don't have to be repeated in the lecture then. As well it might be useful from my point of few to do the theory over lebesgue integrable functions which require knowledge from the integration theory course.

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.)?

Not at all.

No.

No