Kurskommentar Analytiska funktioner ht 2020

Anders Olofsson

Resultatet på kursen är 13 stycken G och 24 stycken VG fördelat på två stycken tentamenstillfällen. Kursvärderingarna var genomgående positiva, se rådata för detaljer.

Genomförandet av kursen stördes av korona-utbrottet 2020. Pga rådande restriktioner ersattes salstentamen med examination i form av skriftlig hemtentamen. Pga ändrade korona-direktiv under examinationsprocessen genomfördes senare muntliga tentamen med Zoom.

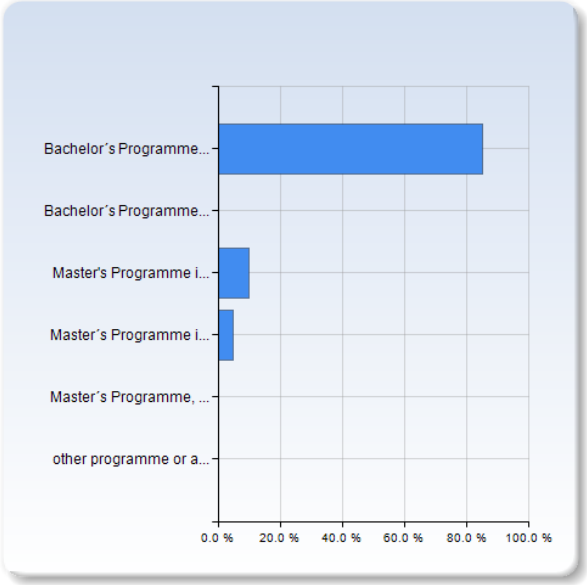
Kursen vänder sig mot studenter med grundläggande kunskaper i algebra och analys i en- och flera variabler. Senare kurser och exjobb ställer krav på kunskaper i finanalys (gränsvärde, satser om kontinuerliga funktioner, differentierbarhet, likformig konvergens etc.). Ett ändamål med kursen är att påtala hur denna typ av struktur ligger integrerad i analys-ämnet. Kursen är tänkt att fungera som lämplig preparation för exjobb om harmoniska funktioner eller liknande ämnesområde.

Analytic Functions, Autumn 2020

Answer Count: 20

I have studied this course as part of

I have studied this course as part of	Number of Responses
Bachelor´s Programme in Mathematics	17 (85.0%)
Bachelor´s Programme, other specialization	0 (0.0%)
Master's Programme in Mathematics	2 (10.0%)
Master´s Programme in Mathematical Statistics	1 (5.0%)
Master´s Programme, other specialization	0 (0.0%)
other programme or as stand alone course	0 (0.0%)
Total	20 (100.0%)

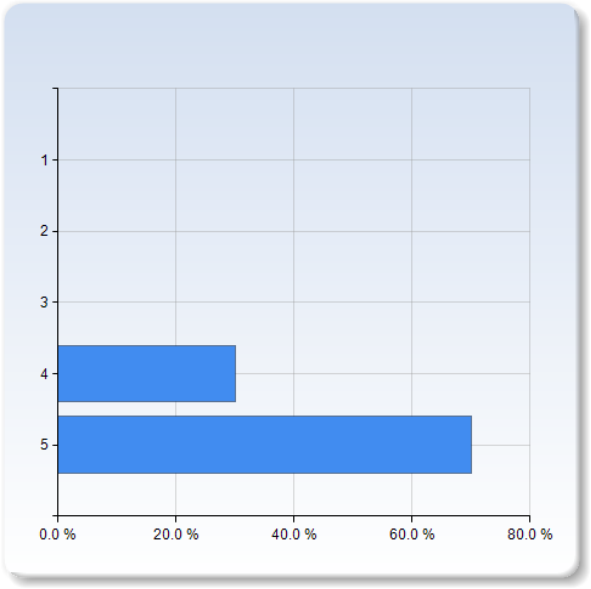


	Mean	Standard Deviation
I have studied this course as part of	1.5	1.2

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.

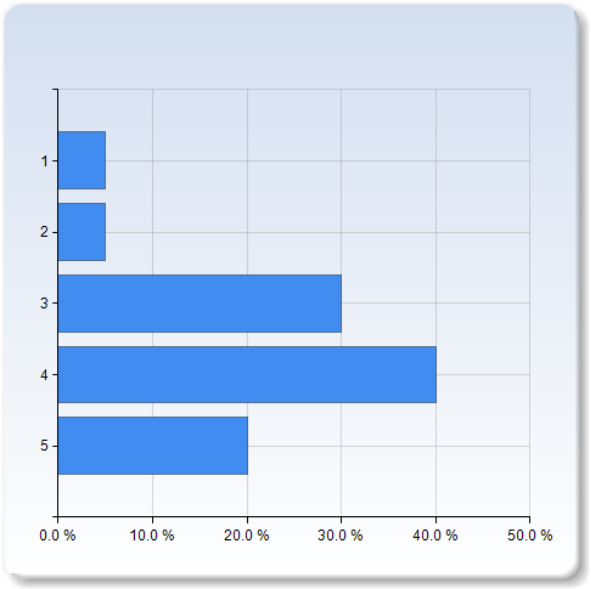
2. My prior knowledge has been sufficient to assimilate the contents of this course.	Number of Responses
1	0 (0.0%)
2	0 (0.0%)
3	0 (0.0%)
4	6 (30.0%)
5	14 (70.0%)
Total	20 (100.0%)



	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.

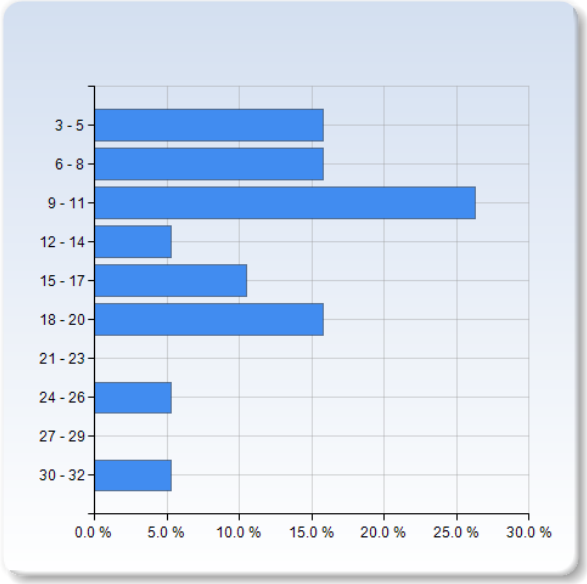
3. I have participated actively in the course.	Number of Responses
1	1 (5.0%)
2	1 (5.0%)
3	6 (30.0%)
4	8 (40.0%)
5	4 (20.0%)
Total	20 (100.0%)



	Mean	Standard Deviation
3. I have participated actively in the course.	3.7	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
3 - 5	3 (15.8%)
6 - 8	3 (15.8%)
9 - 11	5 (26.3%)
12 - 14	1 (5.3%)
15 - 17	2 (10.5%)
18 - 20	3 (15.8%)
21 - 23	0 (0.0%)
24 - 26	1 (5.3%)
27 - 29	0 (0.0%)
30 - 32	1 (5.3%)
Total	19 (100.0%)



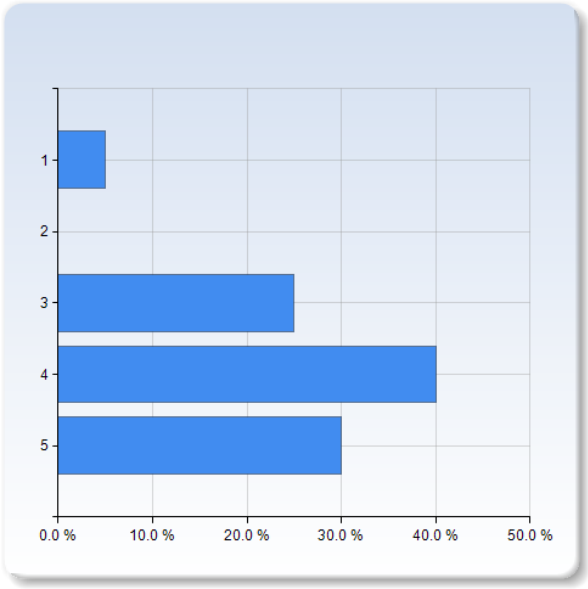
	Mean	Standard Deviation
Average number of hours spent in total on the course per week (including scheduled activities):	12.7	7.3

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.

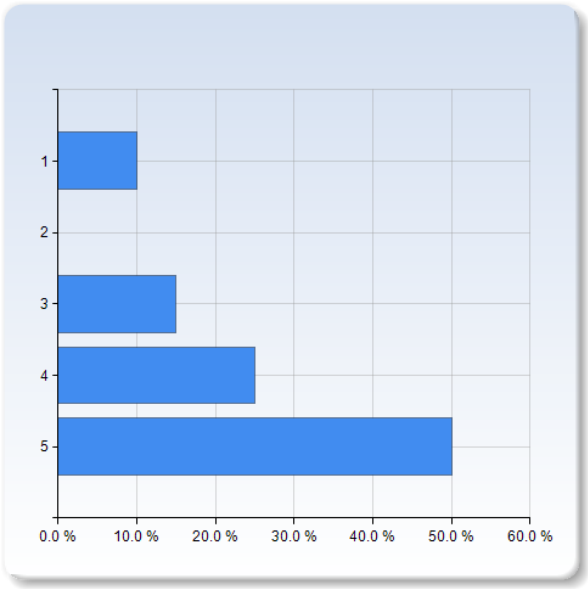
The way the course was taught and organised suited me.	Number of Responses
1	1 (5.0%)
2	0 (0.0%)
3	5 (25.0%)
4	8 (40.0%)
5	6 (30.0%)
Total	20 (100.0%)



	Mean	Standard Deviation
The way the course was taught and organised suited me.	3.9	1.0

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

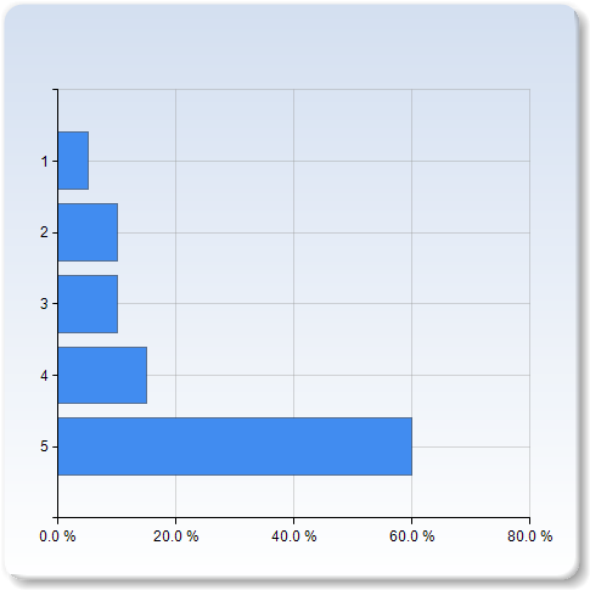
The number of teacher lead activities (lectures) has been satisfactory.	Number of Responses
1	2 (10.0%)
2	0 (0.0%)
3	3 (15.0%)
4	5 (25.0%)
5	10 (50.0%)
Total	20 (100.0%)



	Mean	Standard Deviation
The number of teacher lead activities (lectures) has been satisfactory.	4.1	1.3

The lectures were valuable for my learning.

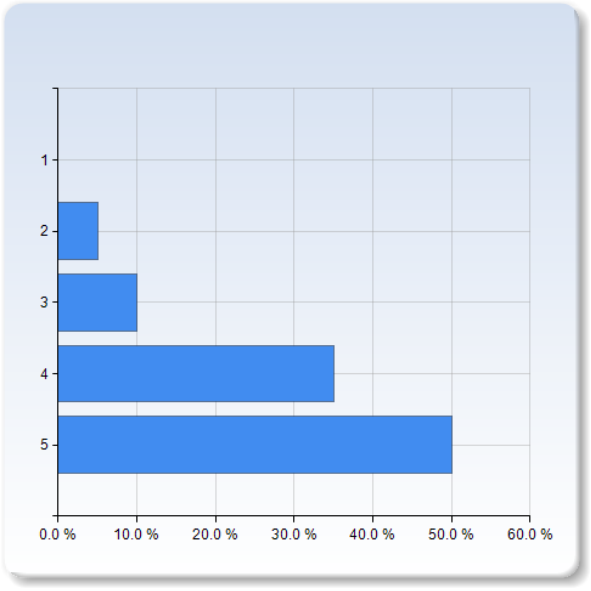
The lectures were valuable for my learning.	Number of Responses
1	1 (5.0%)
2	2 (10.0%)
3	2 (10.0%)
4	3 (15.0%)
5	12 (60.0%)
Total	20 (100.0%)



	Mean	Standard Deviation
The lectures were valuable for my learning.	4.2	1.3

Studying on my own was valuable for my learning.

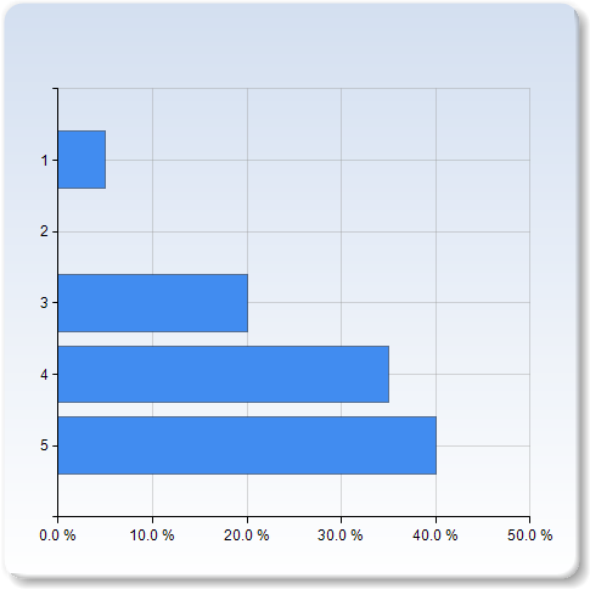
Studying on my own was valuable for my learning.	Number of Responses
1	0 (0.0%)
2	1 (5.0%)
3	2 (10.0%)
4	7 (35.0%)
5	10 (50.0%)
Total	20 (100.0%)



	Mean	Standard Deviation
Studying on my own was valuable for my learning.	4.3	0.9

The course literature/material was a valuable learning resource.

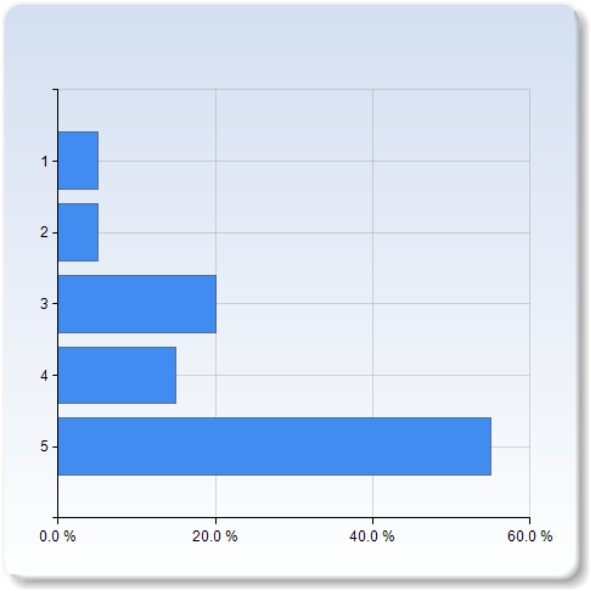
The course literature/material was a valuable learning resource.	Number of Responses
1	1 (5.0%)
2	0 (0.0%)
3	4 (20.0%)
4	7 (35.0%)
5	8 (40.0%)
Total	20 (100.0%)



	Mean	Standard Deviation
The course literature/material was a valuable learning resource.	4.1	1.1

The information I received before the course start was satisfactory.

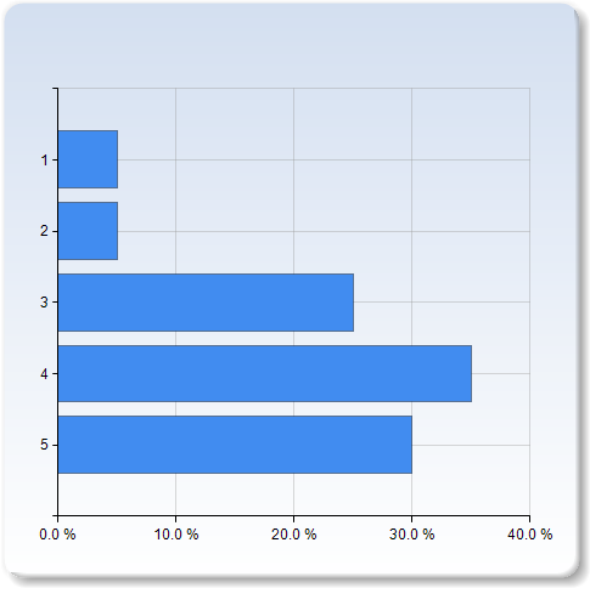
The information I received before the course start was satisfactory.	Number of Responses
1	1 (5.0%)
2	1 (5.0%)
3	4 (20.0%)
4	3 (15.0%)
5	11 (55.0%)
Total	20 (100.0%)



	Mean	Standard Deviation
The information I received before the course start was satisfactory.	4.1	1.2

The communication with the teacher during the course was good.

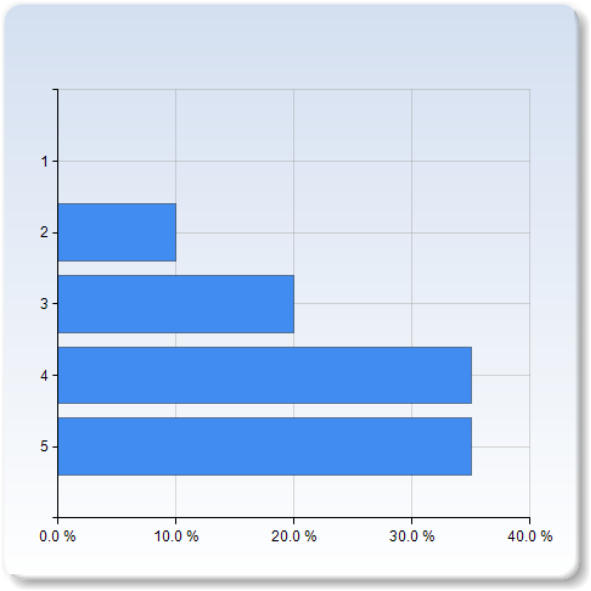
The communication with the teacher during the course was good.	Number of Responses
1	1 (5.0%)
2	1 (5.0%)
3	5 (25.0%)
4	7 (35.0%)
5	6 (30.0%)
Total	20 (100.0%)



	Mean	Standard Deviation
The communication with the teacher during the course was good.	3.8	1.1

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

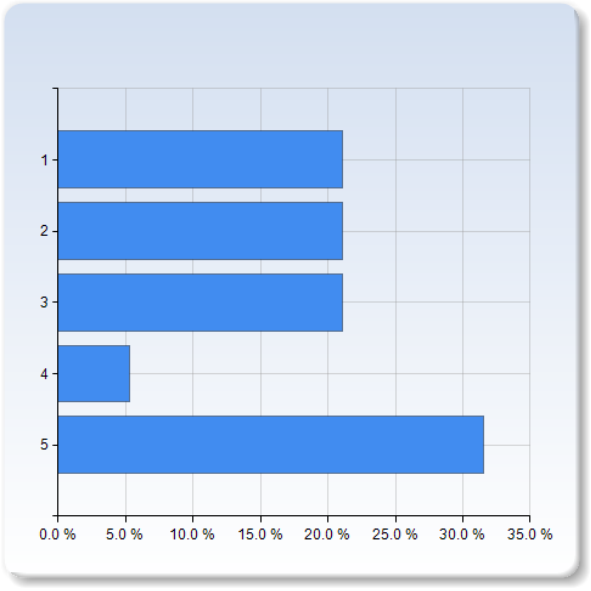
It was clear throughout the course what was expected of me.	Number of Responses
1	0 (0.0%)
2	2 (10.0%)
3	4 (20.0%)
4	7 (35.0%)
5	7 (35.0%)
Total	20 (100.0%)



	Mean	Standard Deviation
It was clear throughout the course what was expected of me.	4.0	1.0

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

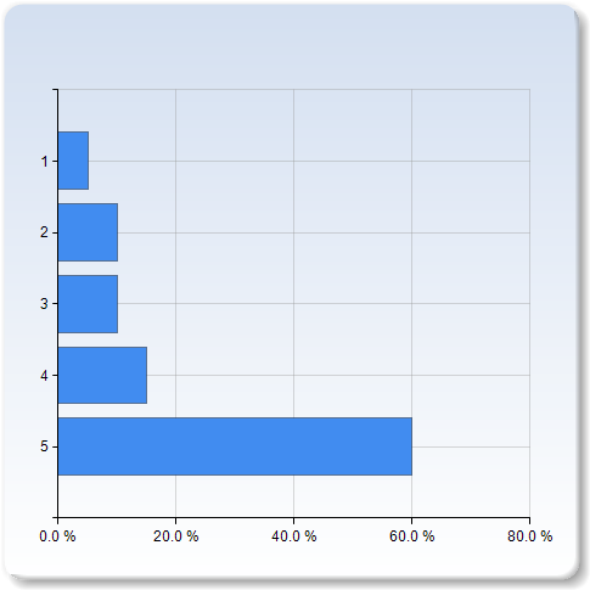
I have received valuable feedback from my teacher during the course.	Number of Responses
1	4 (21.1%)
2	4 (21.1%)
3	4 (21.1%)
4	1 (5.3%)
5	6 (31.6%)
Total	19 (100.0%)



	Mean	Standard Deviation
I have received valuable feedback from my teacher during the course.	3.1	1.6

The course had a reasonable workload.

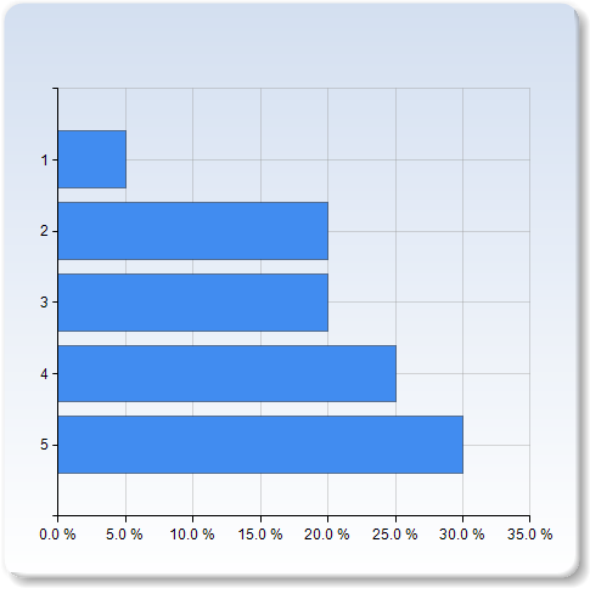
The course had a reasonable workload.	Number of Responses
1	1 (5.0%)
2	2 (10.0%)
3	2 (10.0%)
4	3 (15.0%)
5	12 (60.0%)
Total	20 (100.0%)



	Mean	Standard Deviation
The course had a reasonable workload.	4.2	1.3

The workload was evenly distributed throughout the course.

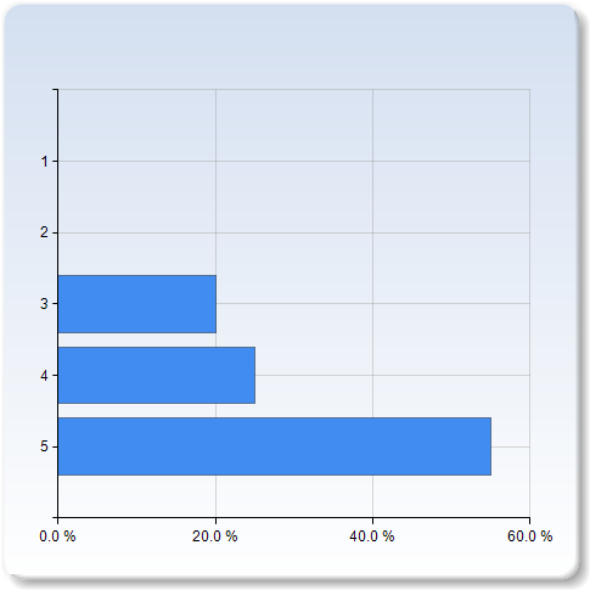
The workload was evenly distributed throughout the course.	Number of Responses
1	1 (5.0%)
2	4 (20.0%)
3	4 (20.0%)
4	5 (25.0%)
5	6 (30.0%)
Total	20 (100.0%)



	Mean	Standard Deviation
The workload was evenly distributed throughout the course.	3.6	1.3

The examination matched the contents and level of the course.

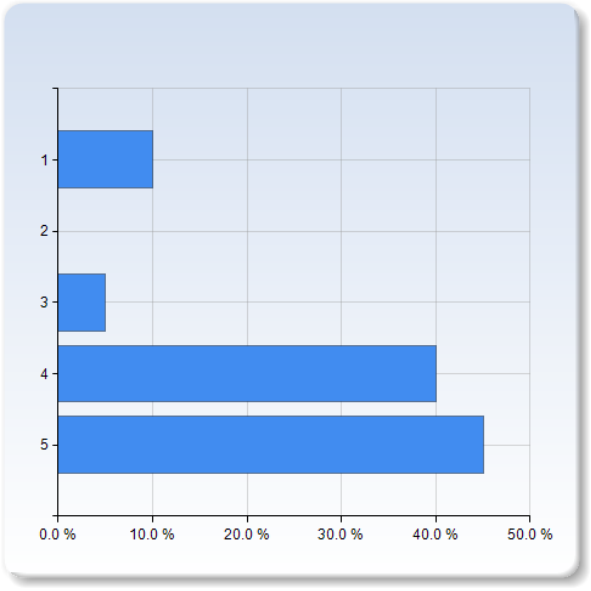
The examination matched the contents and level of the course.	Number of Responses
1	0 (0.0%)
2	0 (0.0%)
3	4 (20.0%)
4	5 (25.0%)
5	11 (55.0%)
Total	20 (100.0%)



	Mean	Standard Deviation
The examination matched the contents and level of the course.	4.4	0.8

Overall, I am satisfied with the course.

Overall, I am satisfied with the course.	Number of Responses
1	2 (10.0%)
2	0 (0.0%)
3	1 (5.0%)
4	8 (40.0%)
5	9 (45.0%)
Total	20 (100.0%)



	Mean	Standard Deviation
Overall, I am satisfied with the course.	4.1	1.2

Please comment below if there are aspects related to the impact of online teaching on your learning that you want to bring to our attention (for example regarding your ability to concentrate, your motivation, etc.)

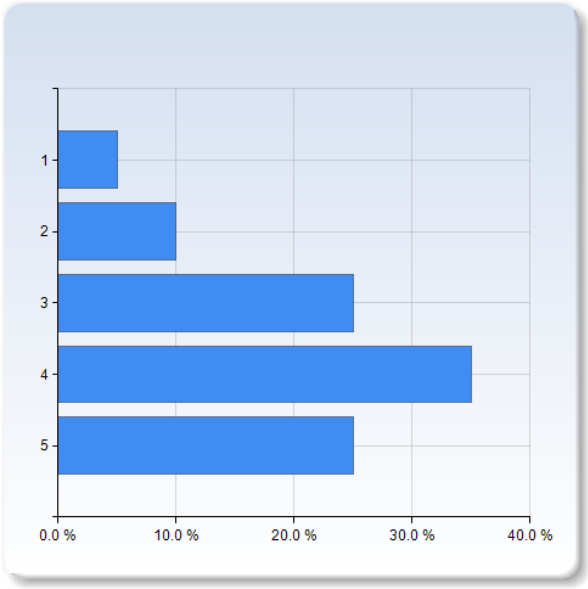
Please comment below if there are aspects related to the impact of online teaching on your learning that you want to bring to our attention (for example regarding your ability to concentrate, your motivation, etc.)
During the online lectures, the camera usually only covers only one piece of paper/black board, which makes it not so easy to have a general view of what's going on (e.g. proofs are unsuitably divided into small parts).
The lectures were good in general. Especially for this course there is a remote camara. (Good impact). I don't think online teaching had negative impacts on me, but thanks for asking!
During the parts of the course I listened to the lectures from home my focus went down by a lot. I find that being there in person is much better for how well I focus and learn.
The original format of the course was not very clear, but once Hassen helped with the filming it got much better. I also enjoyed being able to participate actively in the lectures, which was easier when I was on campus than at home. (Of Course it was also possible to ask questions from online, but I typically find it less personal).
I attend live so guess it does not impact me, which is one of the primary reasons i enjoyed the course. i.e being able to attend live lectures
The situation with Covid of course devalued the experience in taking the course but I thought it was handled decently, especially when Anders could use the blackboards again. Some of my classmates complained about the tempo of the course but I thought it was decent. By this point many of the topics have been encountered before, like first order PDEs, power series, line integrals and so on and so forth. The start of the course was a bit slow but I think that is fine, since from what I understand the course is meant to be an easier advanced level course. Algebraic structures is another such course and I would say the first half of that course was much slower than the start of this one. I wouldn't change much if anything about the course. Anders is a good lecturer and a good teacher, it seems like he's able to understand some of the problems students might have better than other lecturers. I think Anders has a good overview of the course and unless he wants to change something the course should stay the same.
I really appreciated the opportunity to attend physically, as it is much easier to ask questions, talk informally with the teacher etc.
When doing my oral exam, I asked to do it on Zoom, which was denied. I got the choice between meeting in person in December or postponing it to January. I don't think this is reasonable with regards to the Covid outbreak. Moreover, I studied for the oral exam quite a lot, learning proofs by heart etc. When I had the oral exam, all we did was to go through the problems of the written exam. This is fine, but I would have preferred to know beforehand, so that I wouldn't have needed to prepare so much. Maybe this was said in the lectures which I didn't attend, but in that case I find it reasonable to also post the information on Canvas.
During the first part of the course, when the teacher wrote on paper, the sheets were often teared away too soon and put out of view of the camera, and so the information was lost for those who had not yet completed their notes of it. I think there would have been room for two sheets in the picture simultaneously; the current, and the previous. Also, sometimes during this time, the teacher would scribble something on the blackboard - something not part of the prepared lecture - to answer a question. Maybe this scribble was not very important, but it was potentially interesting, and one did not know what was not seen in these cases if one was watching via Zoom and could only see the teacher's notebook. Thus, scribble too should have been in the notebook. Apart from this, the lectures were very good.
Way too easy of a course that is supposed to be a masters course or at least a 3rd year course. The material was taught like we had just passed analysis 1 and was extremely slow. All the content could have easily been covered in 7,5hp (and is at other universities in sweden).

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.

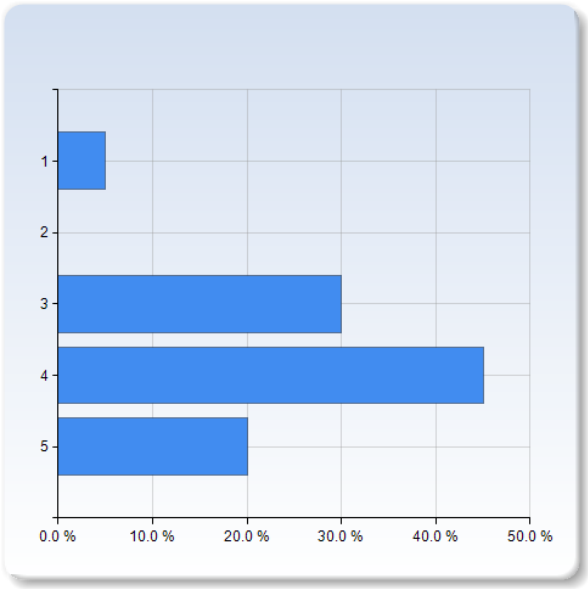
The course has increased my ability to read a mathematical text.	Number of Responses
1	1 (5.0%)
2	2 (10.0%)
3	5 (25.0%)
4	7 (35.0%)
5	5 (25.0%)
Total	20 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to read a mathematical text.	3.7	1.1

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

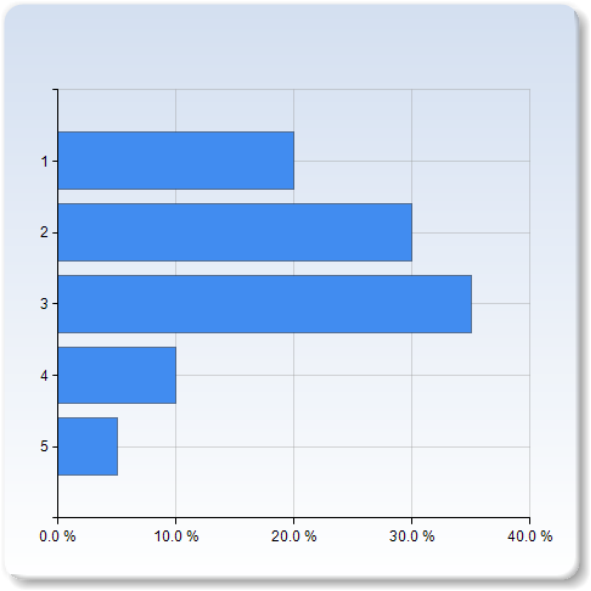
The course has increased my ability to communicate the subject in general.	Number of Responses
1	1 (5.0%)
2	0 (0.0%)
3	6 (30.0%)
4	9 (45.0%)
5	4 (20.0%)
Total	20 (100.0%)



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

The course has increased my ability to cooperate.

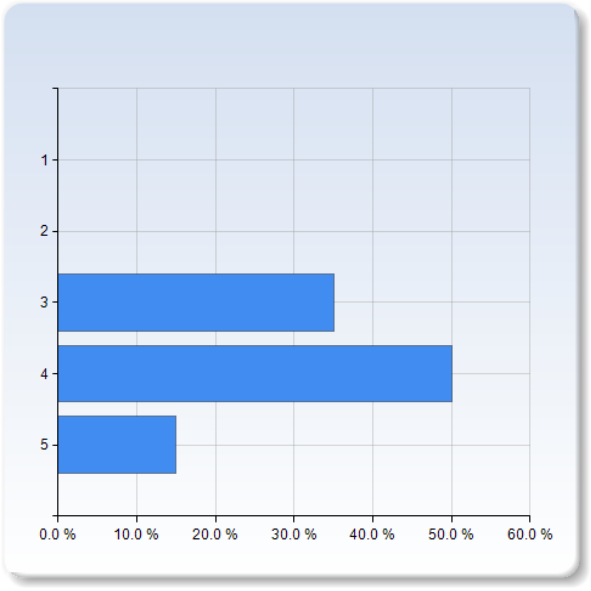
The course has increased my ability to cooperate.	Number of Responses
1	4 (20.0%)
2	6 (30.0%)
3	7 (35.0%)
4	2 (10.0%)
5	1 (5.0%)
Total	20 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to cooperate.	2.5	1.1

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

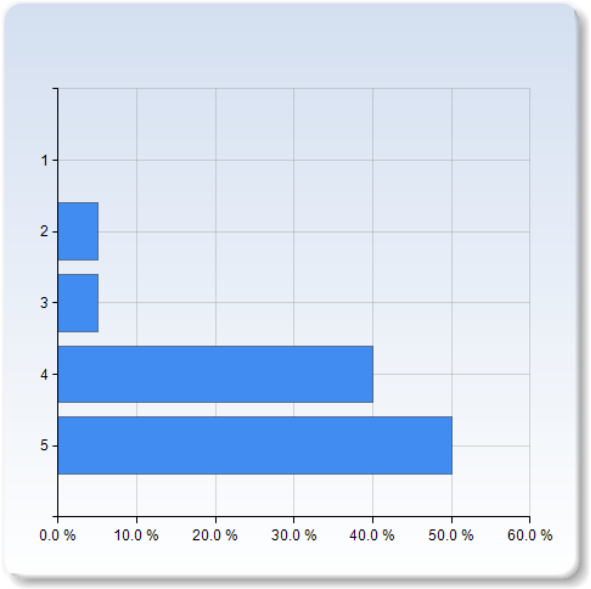
The course has increased my ability to search and process information.	Number of Responses
1	0 (0.0%)
2	0 (0.0%)
3	7 (35.0%)
4	10 (50.0%)
5	3 (15.0%)
Total	20 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to search and process information.	3.8	0.7

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

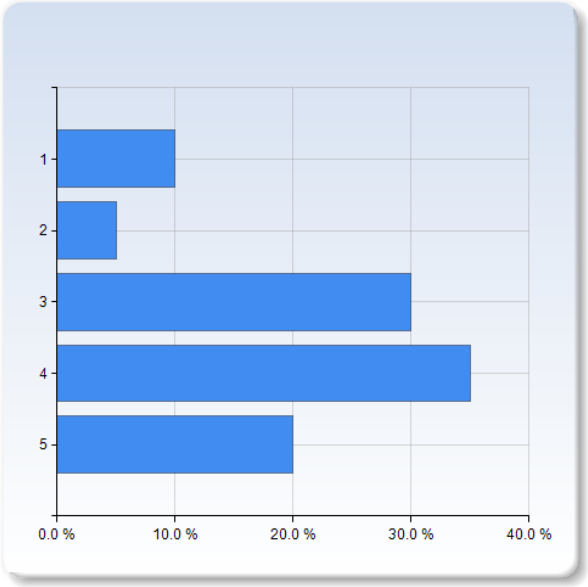
The course has increased my ability to analyze and solve problems.	Number of Responses
1	0 (0.0%)
2	1 (5.0%)
3	1 (5.0%)
4	8 (40.0%)
5	10 (50.0%)
Total	20 (100.0%)



	Mean	Standard Deviation
The course has increased my ability to analyze and solve problems.	4.4	0.8

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 (10.0%)
2	1 (5.0%)
3	6 (30.0%)
4	7 (35.0%)
5	4 (20.0%)
Total	20 (100.0%)



	Mean	Standard Deviation
As a result of this course, I feel confident about tackling unfamiliar problems.	3.5	1.2

What did you appreciate most with the course?

What did you appreciate most with the course?
Anders is good at explaining theorems.
Residual calculus and Larurent series -- very useful in my other courses as well.
I liked it a lot all around. Very interesting material and good understandable lectures. The book was also excellent I thought.
That everything was proved very rigorously. The lecturer pointed out important details which I might not have thought of otherwise.
I thought Anders did a fantastic job at explaining the concepts clearly and also put them into a wider mathematical perspective. The frequent remarks put the subject in context, showing how it fits into the mathematical landscape, which both helps understanding and provides additional motivation, and will also help learning of future courses as well as reinforcing previous concepts that had been (partially) unclear in previous courses (for example concepts like differentiation under the integral sign).
lectures,transparancy, structure. Anders
The content is quite interesting and Anders is a good teacher
Anders is a great lecturer, and it felt like he knew the course by heart. I've always found it hard to get an intuition about analysis compared to let's say algebra, discrete maths etc. Throughout the lectures it felt like alot of things clicked for me that didn't click in previous courses. It was very useful to ask questions during the lectures, and it felt like he really wanted us to grasp the concepts fully.
Anders's clear lectures and the great number of old exams with solutions.
Interesting course content
Possibly the following. The teacher's, for the most part, structured presentations. His comments about the core ideas, interpretations and suchlike of some proofs and how they may be extended and how they relate to other things. That he, despite the course being given in english, informed about the swedish terms - they are very good to know.
The later chapters of the book that we did not go into detail because we didnt have enough time since the start of the course is extremely slow.
Had interesting stuff about harmonic functions.
Anders explanations were really good. When using the blackboard it was easy to follow the lecture and focus on the important parts.
Many exercises during the course that helped understand everything better

What do you think should be improved?

What do you think should be improved?
The structure of the course is very confusing. The course went pretty far away from the schedule we got at the beginning and it looks like some content has been skipped. First, I think it would be appreciated if the lectures are somewhat in accordance with the schedule given to us; second, I think the detailed and super long (at least two lectures long) introduction of exponential functions at the beginning of this course, which is at advanced level, can be omitted. The prerequisites of the course have included such a basic knowledge, and if it is worried that some students might have trouble with it, an alternative solution would be mentioning it at the beginning of the course what one should know and where to learn if one doesn't.
Mobius transformation. Especially problems concerning the mapping from one to another space.
In the beginning of the course , the pace of the lectures could have been a bit faster, since it gets boring when the pace is to slow, especially for easy material. Perhaps we could add seminars on top of the lectures, but it is also fine as it is.
Perhaps seminar should be added, although i know it is a master course. More exercises on the more theoretical thms, liouville, goursats etc.
See first comment. I think there should be a follow up course because while the course touched on many areas it didn't go very deep into most of them.
The first 2-3 weeks were slow (maybe due to the teaching format) and covered prerequisities. Maybe that can be sped up somewhat in the future, so that there is more time for the later part of the course.
See previous comment on the oral exam
Increase the pace of the lectures and proofs. Add seminars so the teacher doesnt have to spend some whole lectures just on computation examples.
The course is taught extremely slowly, and could probably have its pace doubled without issue.
The beginning of the course was a bit slow, maybe also due to the new online format because of Corona. The topics in the beginning felt a bit dry. However after switching to the blackboard the lectures felt more smooth anf the topic became interesting. I wished the course was a bit faster so that more advanced topics could be covered in the end. Just when it started to get interesting (Riemann mapping theorem, ...) it stopped.
It was very difficult to communicate with the teacher. It was not at all clear what was expected of one from the beginning of the course, and when asked, it was dismissed. It seemed like the teacher did not know he was teaching a masters course and went into a underwhelming recap of the prerequisite material.
The beginning of the course was super easy and in the end, it was quite complicated, which to an extend is probably normal. But I would have prefered if the dificulty-level would have been more constant during the course

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
Nope
No of course not
No
No
No.
No