



LUNDS
UNIVERSITET

Matematikcentrum

Matematik NF

Kursbokslut, Course review MATB23 Analys in several variables 2, spring term 2020

Course responsible: Marcus Carlsson

Other teachers: Daniele Gerosa

Antal studenter: 76 plus 27 reregistered.

Grades: 14 VG, 31 G, 34 U

Evaluation

Det var första gången vi anordnade undervisning via Zoom, p.g.a. Coronaviruset. Detta tycks ha gått förhållandevis bra att döma av kursutvärderingen. Boken får relativt bra betyg, seminarierna får mycket bra betyg medans åsikterna om undervisningen går isär och är jämnt fördelade mellan bra och dåligt. Lektionerna gick till så att jag gick igenom på förhand nerskrivna föreläsninganteckningar, ibland med avbrott för att visa exempel på en tavla. Givetvis är detta inte att jämföra med ordinarie salsundervisning, och det är naturligt att vissa studenter är frustrerade av att inte hinna med i tempot.

It was the first time we arranged teaching via Zoom, p.g.a. Coronavirus. This seems to have gone relatively well judging by the course evaluation. The book receives multiple good grades, the seminars receive very good grades if the teaching is divided and is evenly distributed between good and bad. The lessons went so that I went through pre-written lecture notes, sometimes with breaks to show examples of in-board. Of course, this is not comparable to regular classroom instruction, and it is natural that some students are frustrated at not being able to keep up with the pace.

Sammanfattning av kursvärderingen, student evaluation: Angående kommunikation och feedback är meningarna helt delade mellan jättebra och inte alls bra. Det är givetvis svårt att hitta ett bra format som passar alla när man inte träffas fysiskt. Tentan får överlag bra betyg dock, så kursen och dess examination låg i linje. Merparten uppger att dom är överlag nöjda med kursen, och där förekommer inga rapporter om någon form av diskriminering.

Regarding communication and feedback, opinions are completely divided between great and not good at all. It is of course difficult to find a good format that suits everyone when you do not meet physically. The exam gets good grades overall, however, so the course and its examination were in line. The majority state that they are generally satisfied with the course, and there are no reports of any form of discrimination.

Lärarnas kommentarer, teachers comments: Kursen gick bra och studenterna verkade vara nöjda.

Course went fine and students were overall satisfied.

Utvärdering av förändringar sedan förra kurstillfället, evaluation of changes:

Onlineundervisning är sämre än salsundervisning

Onlineteaching is not as good as in class teaching

Förslag till förändringar inför nästa kurstillfälle, suggestion for changes: Återgå till salsundervisning om pandemin tillåter.

Return to classroom teaching when the pandemic allows for it.

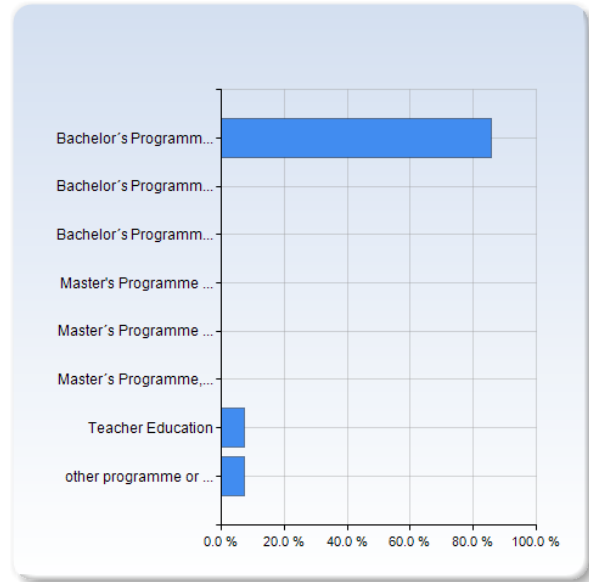
Sammanställare och datum för sammanställningen: Marcus Carlsson, 19 sept 2020.

MATB23 VT 2020

Answer Count: 14

I have studied this course as part of

| I have studied this course as part of | Number of Responses |
|---|---------------------|
| Bachelor's Programme in Mathematics | 12 (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 | 1 (7.1%) |
| other programme or as stand alone course | 1 (7.1%) |
| Total | 14 (100.0%) |

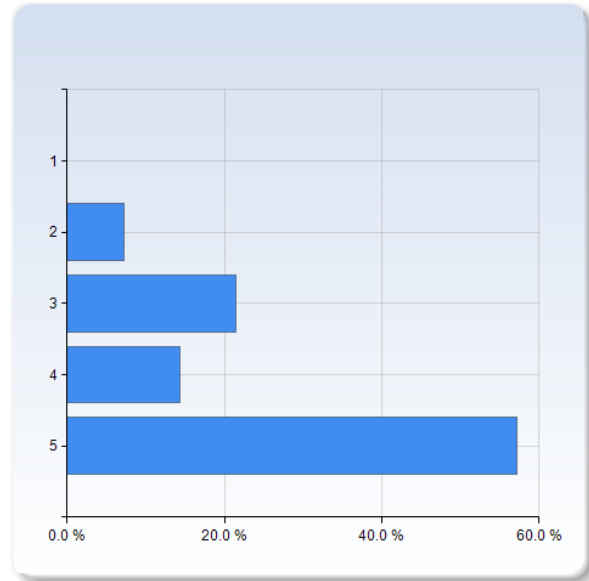


| I have studied this course as part of | Mean | Standard Deviation |
|---------------------------------------|------|--------------------|
| I have studied this course as part of | 1.9 | 2.4 |

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.

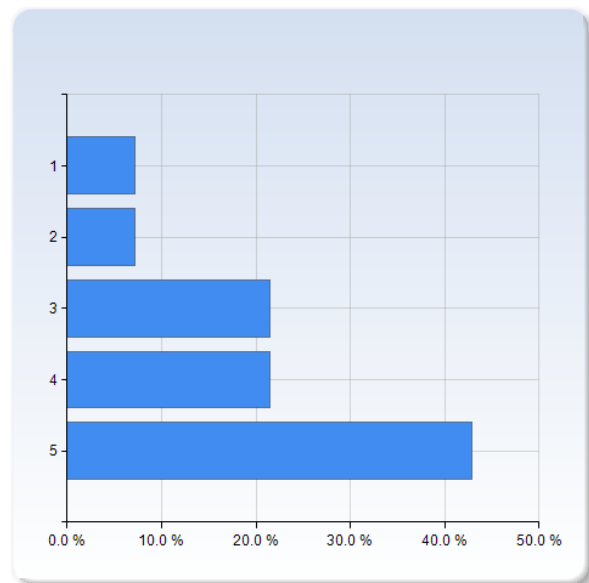
| 2. My prior knowledge has been sufficient to assimilate the contents of this course. | Number of Responses |
|--|---------------------|
| 1 | 0 (0.0%) |
| 2 | 1 (7.1%) |
| 3 | 3 (21.4%) |
| 4 | 2 (14.3%) |
| 5 | 8 (57.1%) |
| Total | 14 (100.0%) |



| | Mean | Standard Deviation |
|--|------|--------------------|
| 2. My prior knowledge has been sufficient to assimilate the contents of this course. | 4.2 | 1.1 |

3. I have participated actively in the course.

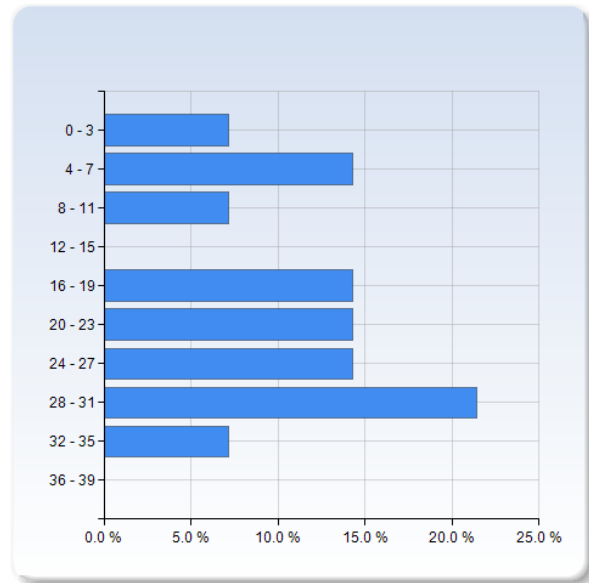
| 3. I have participated actively in the course. | Number of Responses |
|--|---------------------|
| 1 | 1 (7.1%) |
| 2 | 1 (7.1%) |
| 3 | 3 (21.4%) |
| 4 | 3 (21.4%) |
| 5 | 6 (42.9%) |
| Total | 14 (100.0%) |



| | Mean | Standard Deviation |
|--|------|--------------------|
| 3. I have participated actively in the course. | 3.9 | 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 |
|---|---------------------|
| 0 - 3 | 1 (7.1%) |
| 4 - 7 | 2 (14.3%) |
| 8 - 11 | 1 (7.1%) |
| 12 - 15 | 0 (0.0%) |
| 16 - 19 | 2 (14.3%) |
| 20 - 23 | 2 (14.3%) |
| 24 - 27 | 2 (14.3%) |
| 28 - 31 | 3 (21.4%) |
| 32 - 35 | 1 (7.1%) |
| 36 - 39 | 0 (0.0%) |
| Total | 14 (100.0%) |



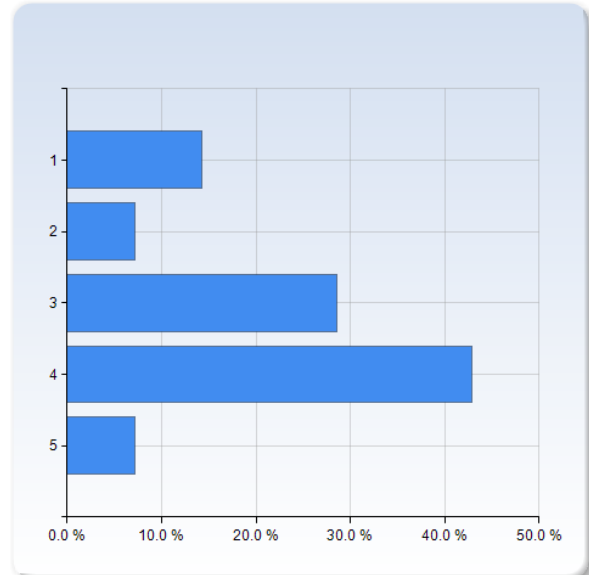
| Average number of hours spent in total on the course per week (including scheduled activities): | Mean | Standard Deviation |
|---|------|--------------------|
| | 19.4 | 10.4 |

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.

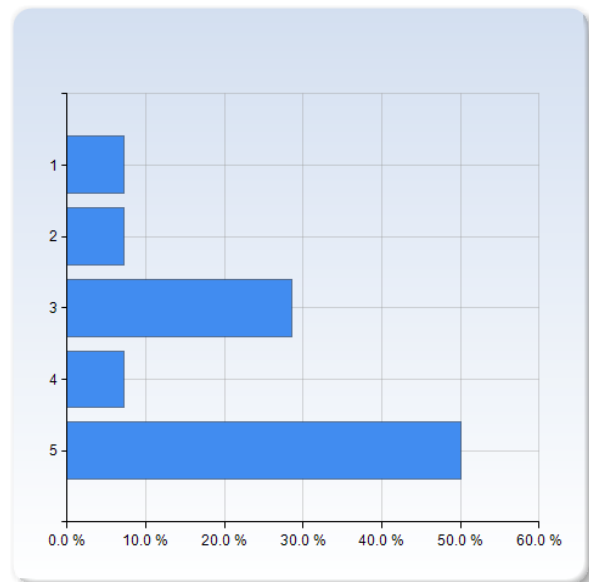
| The way the course was taught and organised suited me. | Number of Responses |
|--|---------------------|
| 1 | 2 (14.3%) |
| 2 | 1 (7.1%) |
| 3 | 4 (28.6%) |
| 4 | 6 (42.9%) |
| 5 | 1 (7.1%) |
| Total | 14 (100.0%) |



| | Mean | Standard Deviation |
|--|------|--------------------|
| The way the course was taught and organised suited me. | 3.2 | 1.2 |

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

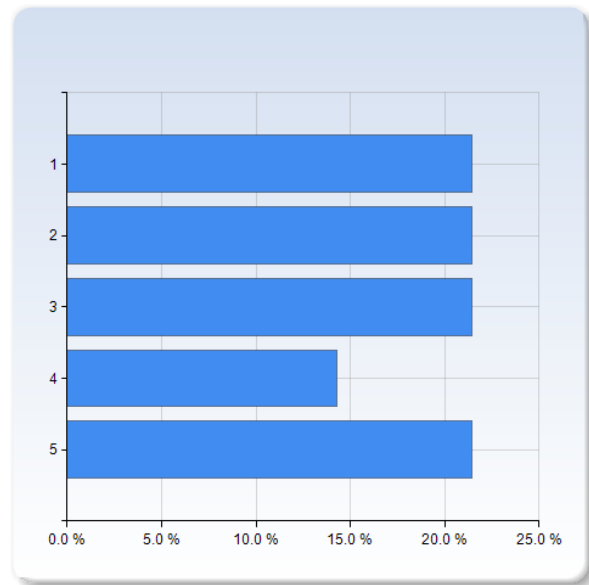
| The number of teacher lead activities (lectures, seminars etc.) has been satisfactory. | Number of Responses |
|--|---------------------|
| 1 | 1 (7.1%) |
| 2 | 1 (7.1%) |
| 3 | 4 (28.6%) |
| 4 | 1 (7.1%) |
| 5 | 7 (50.0%) |
| Total | 14 (100.0%) |



| | Mean | Standard Deviation |
|--|------|--------------------|
| The number of teacher lead activities (lectures, seminars etc.) has been satisfactory. | 3.9 | 1.4 |

The lectures were valuable for my learning.

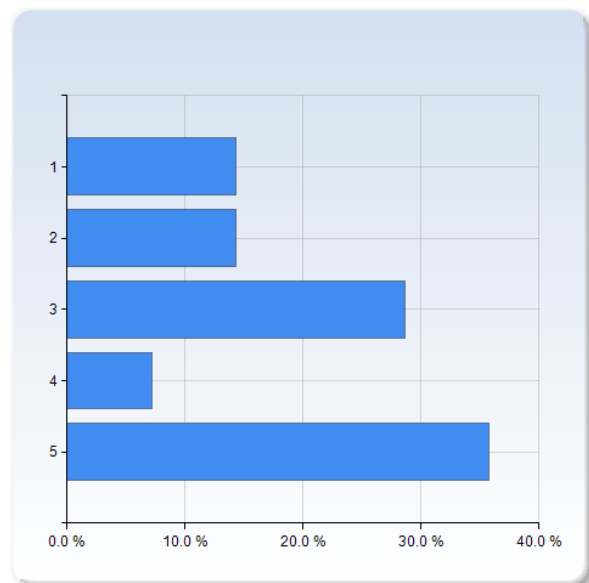
| The lectures were valuable for my learning. | Number of Responses |
|---|---------------------|
| 1 | 3 (21.4%) |
| 2 | 3 (21.4%) |
| 3 | 3 (21.4%) |
| 4 | 2 (14.3%) |
| 5 | 3 (21.4%) |
| Total | 14 (100.0%) |



| The lectures were valuable for my learning. | Mean | Standard Deviation |
|---|------|--------------------|
| | 2.9 | 1.5 |

The seminars were valuable for my learning.

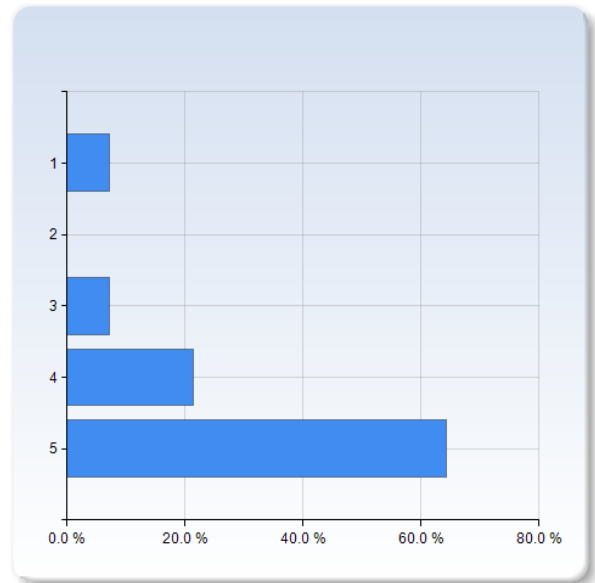
| The seminars were valuable for my learning. | Number of Responses |
|---|---------------------|
| 1 | 2 (14.3%) |
| 2 | 2 (14.3%) |
| 3 | 4 (28.6%) |
| 4 | 1 (7.1%) |
| 5 | 5 (35.7%) |
| Total | 14 (100.0%) |



| | | |
|---|------|--------------------|
| | Mean | Standard Deviation |
| The seminars were valuable for my learning. | 3.4 | 1.5 |

Studying on my own was valuable for my learning.

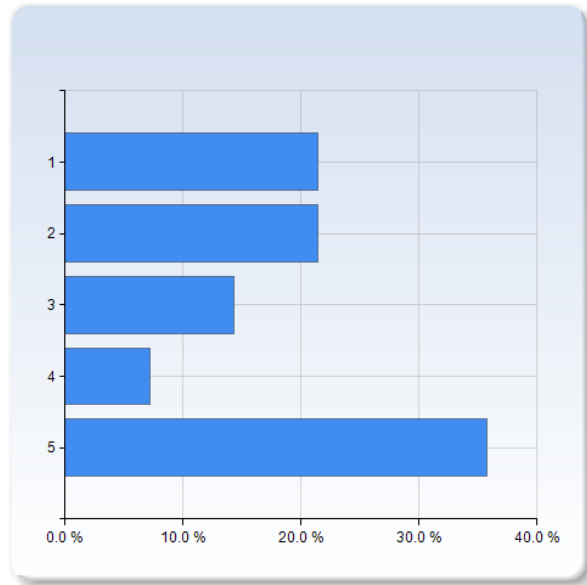
| Studying on my own was valuable for my learning. | Number of Responses |
|--|---------------------|
| 1 | 1 (7.1%) |
| 2 | 0 (0.0%) |
| 3 | 1 (7.1%) |
| 4 | 3 (21.4%) |
| 5 | 9 (64.3%) |
| Total | 14 (100.0%) |



| | | |
|--|------|--------------------|
| | Mean | Standard Deviation |
| Studying on my own was valuable for my learning. | 4.4 | 1.2 |

The course literature/material was a valuable learning resource.

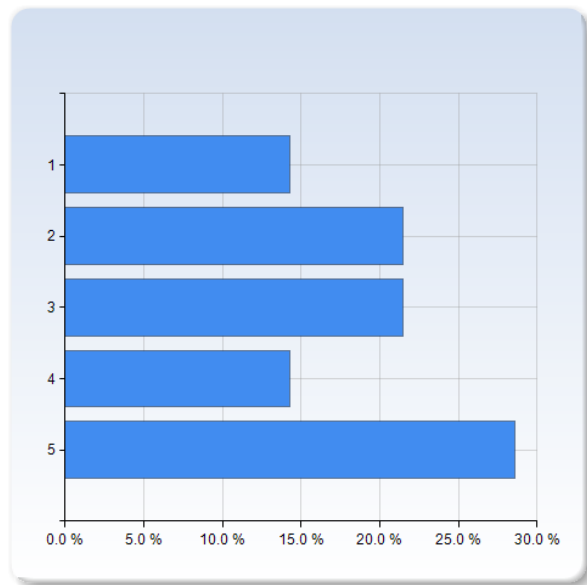
| The course literature/material was a valuable learning resource. | Number of Responses |
|--|---------------------|
| 1 | 3 (21.4%) |
| 2 | 3 (21.4%) |
| 3 | 2 (14.3%) |
| 4 | 1 (7.1%) |
| 5 | 5 (35.7%) |
| Total | 14 (100.0%) |



| The course literature/material was a valuable learning resource. | Mean | Standard Deviation |
|--|------|--------------------|
| | 3.1 | 1.7 |

The information I received before the course start was satisfactory.

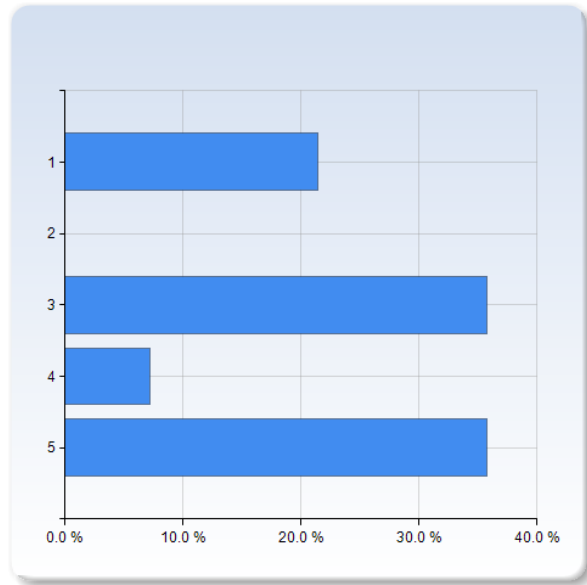
| The information I received before the course start was satisfactory. | Number of Responses |
|--|---------------------|
| 1 | 2 (14.3%) |
| 2 | 3 (21.4%) |
| 3 | 3 (21.4%) |
| 4 | 2 (14.3%) |
| 5 | 4 (28.6%) |
| Total | 14 (100.0%) |



| The information I received before the course start was satisfactory. | Mean | Standard Deviation |
|--|------|--------------------|
| | 3.2 | 1.5 |

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

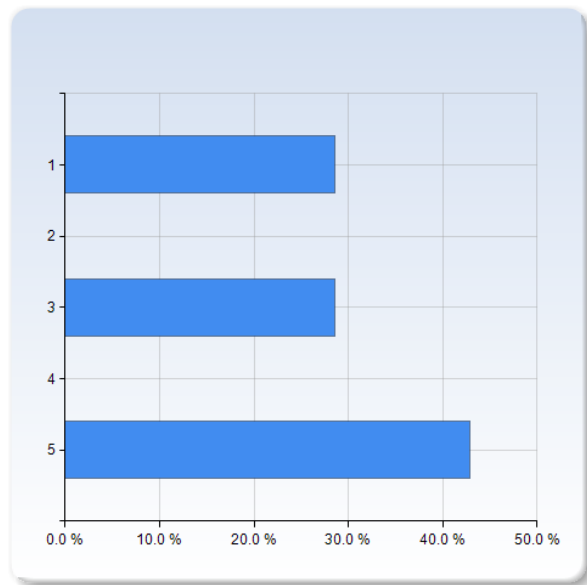
| The communication with the teaching staff during the course was good. | Number of Responses |
|---|---------------------|
| 1 | 3 (21.4%) |
| 2 | 0 (0.0%) |
| 3 | 5 (35.7%) |
| 4 | 1 (7.1%) |
| 5 | 5 (35.7%) |
| Total | 14 (100.0%) |



| The communication with the teaching staff during the course was good. | Mean | Standard Deviation |
|---|------|--------------------|
| | 3.4 | 1.5 |

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

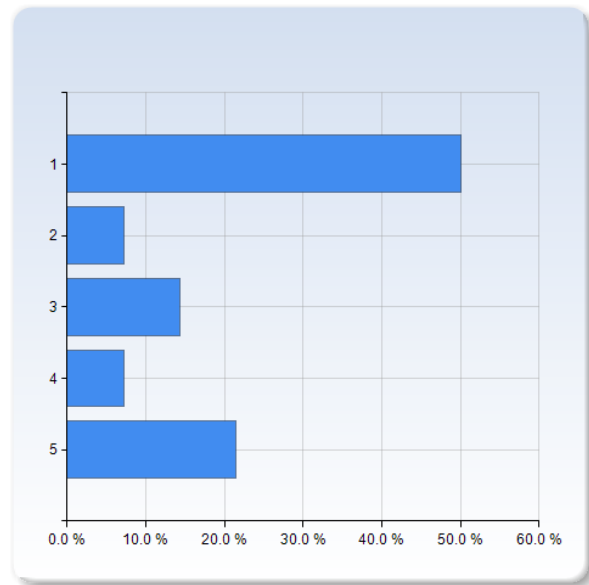
| It was clear throughout the course what was expected of me. | Number of Responses |
|---|---------------------|
| 1 | 4 (28.6%) |
| 2 | 0 (0.0%) |
| 3 | 4 (28.6%) |
| 4 | 0 (0.0%) |
| 5 | 6 (42.9%) |
| Total | 14 (100.0%) |



| It was clear throughout the course what was expected of me. | Mean | Standard Deviation |
|---|------|--------------------|
| | 3.3 | 1.7 |

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

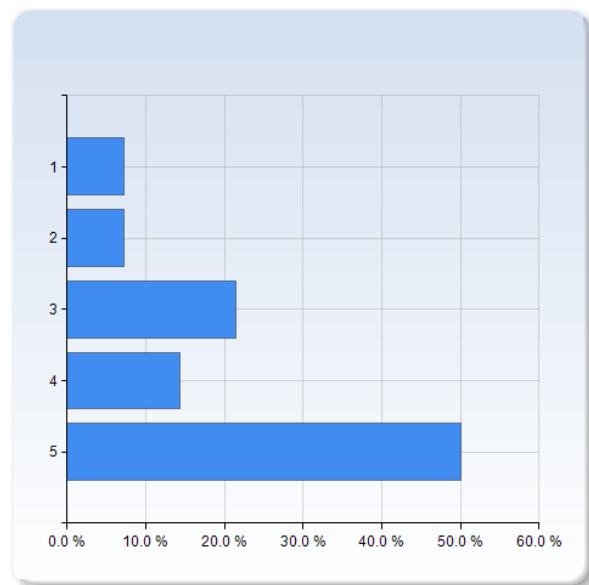
| I have received valuable feedback from my teacher /teachers during the course. | Number of Responses |
|--|---------------------|
| 1 | 7 (50.0%) |
| 2 | 1 (7.1%) |
| 3 | 2 (14.3%) |
| 4 | 1 (7.1%) |
| 5 | 3 (21.4%) |
| Total | 14 (100.0%) |



| I have received valuable feedback from my teacher/teachers during the course. | Mean | Standard Deviation |
|---|------|--------------------|
| | 2.4 | 1.7 |

The course had a reasonable workload.

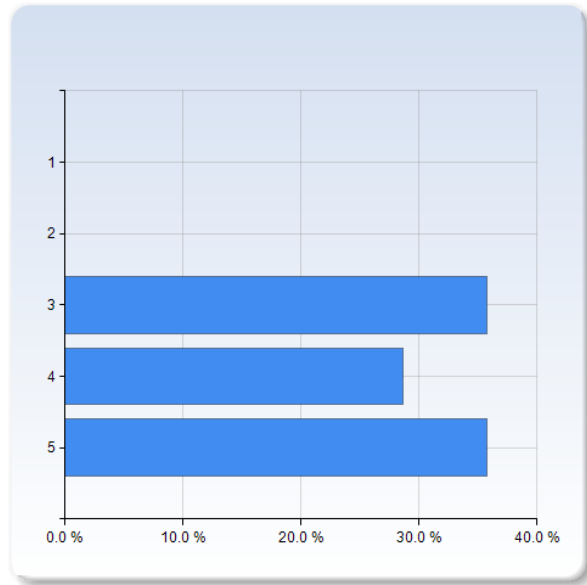
| The course had a reasonable workload. | Number of Responses |
|---------------------------------------|---------------------|
| 1 | 1 (7.1%) |
| 2 | 1 (7.1%) |
| 3 | 3 (21.4%) |
| 4 | 2 (14.3%) |
| 5 | 7 (50.0%) |
| Total | 14 (100.0%) |



| The course had a reasonable workload. | Mean | Standard Deviation |
|---------------------------------------|------|--------------------|
| | 3.9 | 1.3 |

The workload was evenly distributed throughout the course.

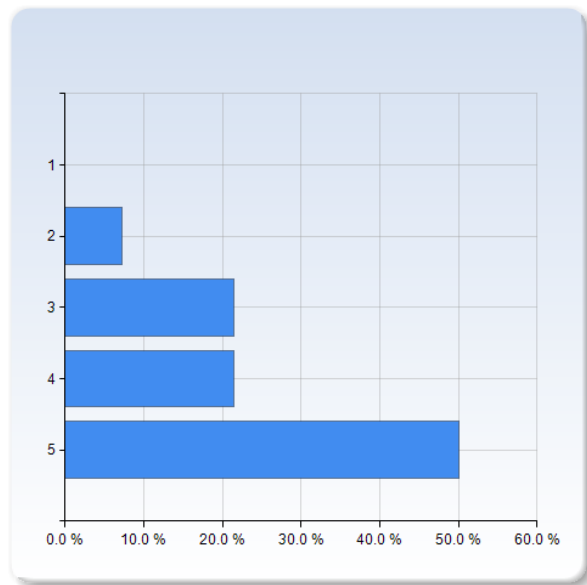
| The workload was evenly distributed throughout the course. | Number of Responses |
|--|---------------------|
| 1 | 0 (0.0%) |
| 2 | 0 (0.0%) |
| 3 | 5 (35.7%) |
| 4 | 4 (28.6%) |
| 5 | 5 (35.7%) |
| Total | 14 (100.0%) |



| | Mean | Standard Deviation |
|--|------|--------------------|
| The workload was evenly distributed throughout the course. | 4.0 | 0.9 |

The examination matched the contents and level of the course.

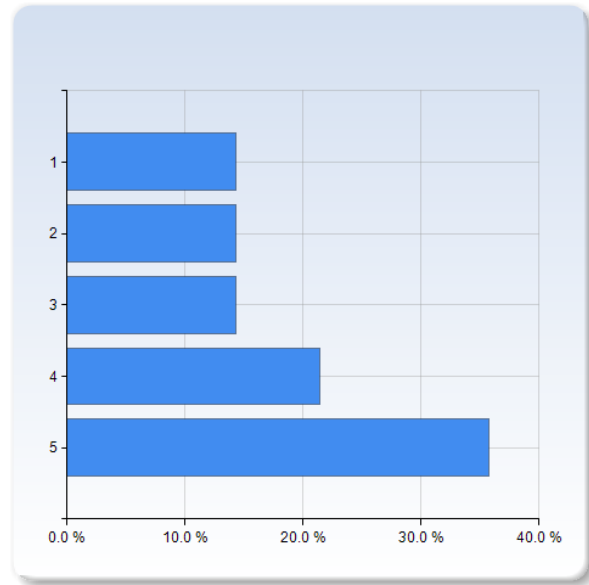
| The examination matched the contents and level of the course. | Number of Responses |
|---|---------------------|
| 1 | 0 (0.0%) |
| 2 | 1 (7.1%) |
| 3 | 3 (21.4%) |
| 4 | 3 (21.4%) |
| 5 | 7 (50.0%) |
| Total | 14 (100.0%) |



| | Mean | Standard Deviation |
|---|------|--------------------|
| The examination matched the contents and level of the course. | 4.1 | 1.0 |

Overall, I am satisfied with the course.

| Overall, I am satisfied with the course. | Number of Responses |
|--|---------------------|
| 1 | 2 (14.3%) |
| 2 | 2 (14.3%) |
| 3 | 2 (14.3%) |
| 4 | 3 (21.4%) |
| 5 | 5 (35.7%) |
| Total | 14 (100.0%) |

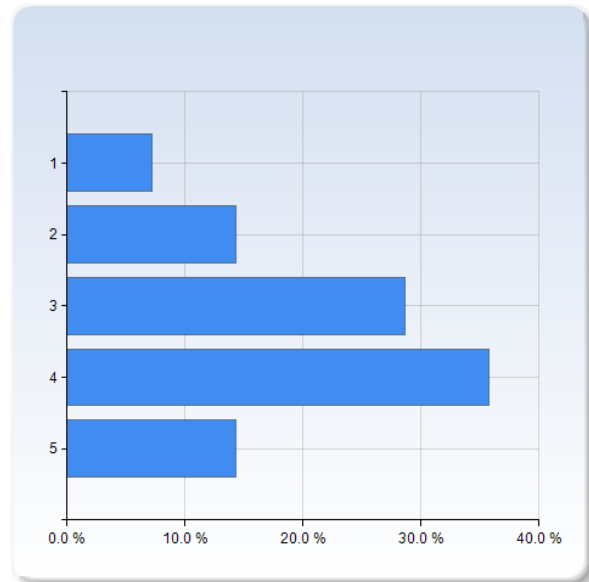


| | Mean | Standard Deviation |
|--|------|--------------------|
| Overall, I am satisfied with the course. | 3.5 | 1.5 |

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.

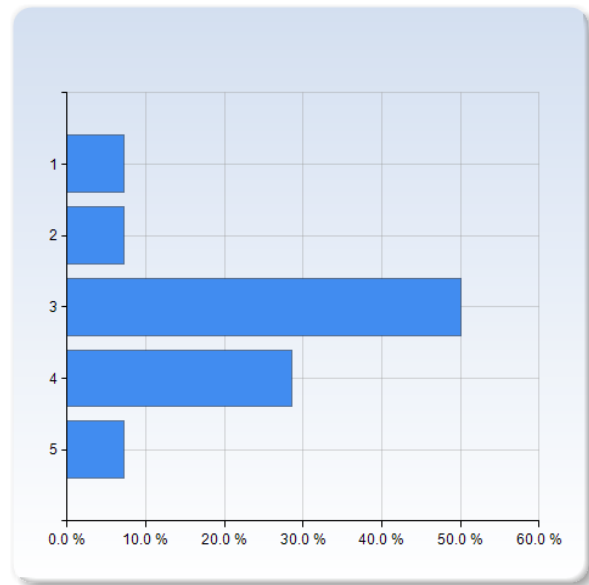
| The course has increased my ability to read a mathematical text. | Number of Responses |
|--|---------------------|
| 1 | 1 (7.1%) |
| 2 | 2 (14.3%) |
| 3 | 4 (28.6%) |
| 4 | 5 (35.7%) |
| 5 | 2 (14.3%) |
| Total | 14 (100.0%) |



| | Mean | Standard Deviation |
|--|------|--------------------|
| The course has increased my ability to read a mathematical text. | 3.4 | 1.2 |

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

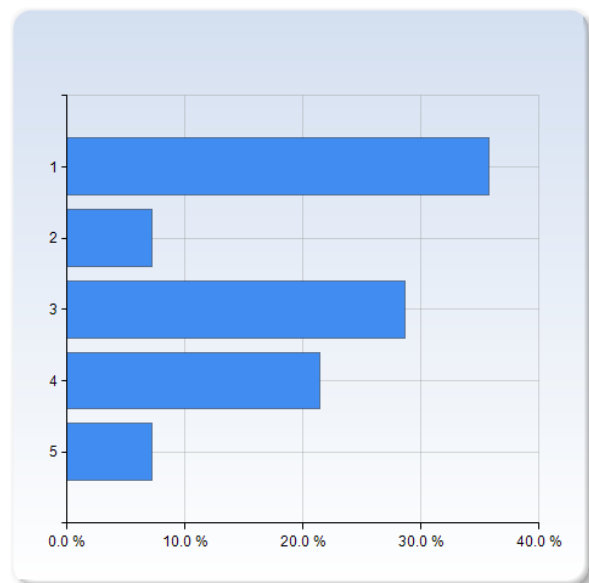
| The course has increased my ability to communicate the subject in writing. | Number of Responses |
|--|---------------------|
| 1 | 1 (7.1%) |
| 2 | 1 (7.1%) |
| 3 | 7 (50.0%) |
| 4 | 4 (28.6%) |
| 5 | 1 (7.1%) |
| Total | 14 (100.0%) |



| | Mean | Standard Deviation |
|--|------|--------------------|
| The course has increased my ability to communicate the subject in writing. | 3.2 | 1.0 |

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

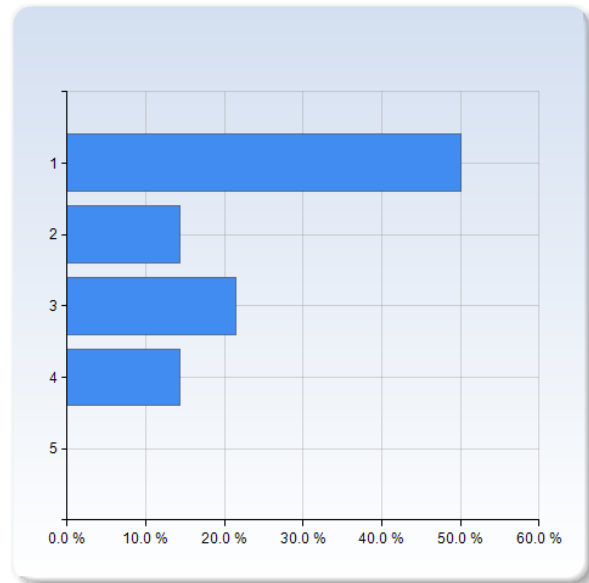
| The course has increased my ability to communicate the subject orally. | Number of Responses |
|--|---------------------|
| 1 | 5 (35.7%) |
| 2 | 1 (7.1%) |
| 3 | 4 (28.6%) |
| 4 | 3 (21.4%) |
| 5 | 1 (7.1%) |
| Total | 14 (100.0%) |



| | Mean | Standard Deviation |
|--|------|--------------------|
| The course has increased my ability to communicate the subject orally. | 2.6 | 1.4 |

The course has increased my ability to cooperate.

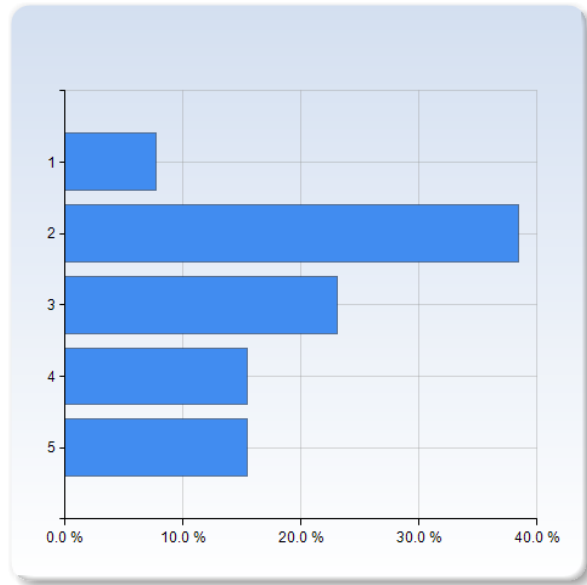
| The course has increased my ability to cooperate. | Number of Responses |
|---|---------------------|
| 1 | 7 (50.0%) |
| 2 | 2 (14.3%) |
| 3 | 3 (21.4%) |
| 4 | 2 (14.3%) |
| 5 | 0 (0.0%) |
| Total | 14 (100.0%) |



| | Mean | Standard Deviation |
|---|------|--------------------|
| The course has increased my ability to cooperate. | 2.0 | 1.2 |

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

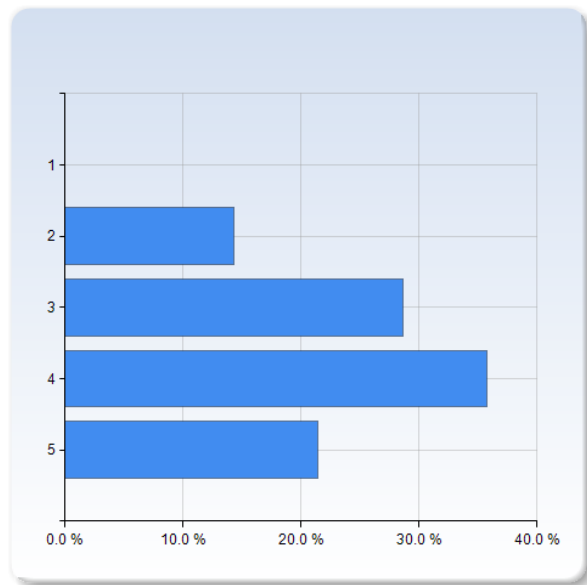
| The course has increased my ability to search and process information. | Number of Responses |
|--|---------------------|
| 1 | 1 (7.7%) |
| 2 | 5 (38.5%) |
| 3 | 3 (23.1%) |
| 4 | 2 (15.4%) |
| 5 | 2 (15.4%) |
| Total | 13 (100.0%) |



| The course has increased my ability to search and process information. | Mean | Standard Deviation |
|--|------|--------------------|
| | 2.9 | 1.3 |

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

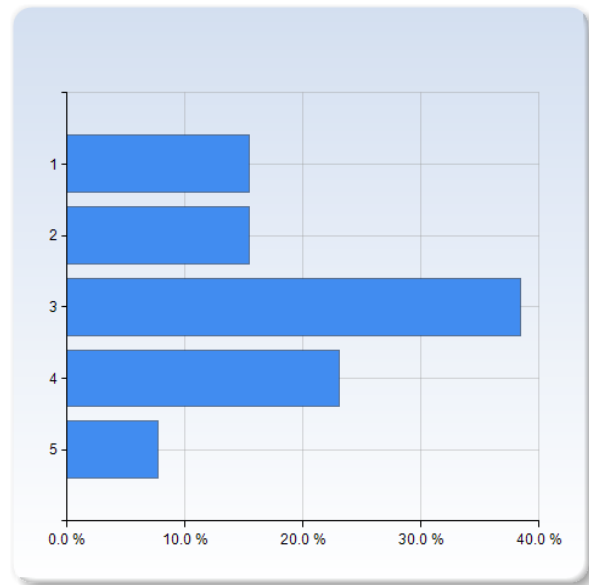
| The course has increased my ability to analyze and solve problems. | Number of Responses |
|--|---------------------|
| 1 | 0 (0.0%) |
| 2 | 2 (14.3%) |
| 3 | 4 (28.6%) |
| 4 | 5 (35.7%) |
| 5 | 3 (21.4%) |
| Total | 14 (100.0%) |



| The course has increased my ability to analyze and solve problems. | Mean | Standard Deviation |
|--|------|--------------------|
| | 3.6 | 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 | 2 (15.4%) |
| 2 | 2 (15.4%) |
| 3 | 5 (38.5%) |
| 4 | 3 (23.1%) |
| 5 | 1 (7.7%) |
| Total | 13 (100.0%) |



| | Mean | Standard Deviation |
|--|------|--------------------|
| As a result of this course, I feel confident about tackling unfamiliar problems. | 2.9 | 1.2 |

What did you appreciate most with the course?

What did you appreciate most with the course?

I really appreciated that we were given the lecture notes in addition to the course literature. Having more material to resort to gave me a better understanding of the course content. The distribution of work load was also very good, and that we in the beginning were given a rough schedule was good. Also that the lectures were done live was good.

I appreciated the intuitive approach to teaching. I think, however, that because of the distance learning situation this was very difficult to do effectively, of no fault of the teaching staff.

The seminars were good

Marcus and Bartosz they are great!

Thorough working out of problems in the seminar.

Lecturer communicates well.

Structured schedule with problems to solve everyday

I loved attending the lectures because of the lecturer's knowledge and humor, same goes for the seminars, so I felt very motivated to partake in them and learn.

Our seminar teacher Bartosz. Without him this course would've been almost impossible to understand without help from youtube videos etc. He has been very pedagogical and well structured, both with the seminar schedule and with his solutions. He uploaded full solutions on canvas the day before the seminar and also went through the more important ones during the seminar. He was very encouraging with us to ask questions and he was very good at explaining. Everything I know from this course Bartosz taught me. He also always replied to emails.

What do you think should be improved?

What do you think should be improved?

I think the most difficult part of the course, not for me personally, but for others, was that information was given on a very short notice. The time for the lectures was given perhaps half an hour before hand, and the information regarding the examination was given also on a very, very short notice. Of course it's understandable that it's a difficult situation for everybody, but I do feel like the teachers could have made more of an effort. Also, as the information was given on such short notice, I don't think the way the students were given responsibility over the whole situation (and honestly not always in a very polite way), was entirely fair. Agagin, the department/teachers could have made more of an effort.

This course was disappointing to me. I was expecting much more rigor. My largest complaint is that this course does not really provide many true mathematical definitions. In particular I think the course literature is completely inappropriate; it is intended for engineers who will use these mathematical tools as a supplement to the work they already do. This course felt like a physics or engineering course without the physics/engineering. As such I would appreciate some projects/assignments that might provide this link and develop better intuition through guided problem solving.

I think we could have handled more content.

The lectures were confusing

Marcus is one of the great teachers at Lund and it is enjoyable to listen to his lectures. His strong qualities are he is informal and not stuck up which makes it easier to listen to him and his conceptual skills are great.

He would become even better if he is a bit more prepared in the sense of having better lecture notes with fewer errors, being prepared with the technical stuffs and so forth.

Using some other book and better explanation of the lectures.

When learning how to solve problems I feel like I'm just learning to memorise different scenarios for problems that come on the exam, and I feel like I would rather have understood the concepts behind applying formulas more in depth, but I wouldn't have enough time for both of that to pass the exam. The theory is definitely presented to us in the lectures but sometimes in a skim over kind of way. Don't get me wrong I have learned a lot from this course but I think I will forget things faster than if the focus would have been on mathematical concepts and proofs.

Right now corona made it a lot more challenging to study in general, so that was probably the biggest obstacle

One simply does not exhibit results of any kind for others to see. This is a matter of principle and it is highly disrespectful to the personal integrity of the students to send out the exam results with names, as done via mail by Marcus. Maybe you find the administration required to send out personal messages tedious, and that is too bad, but it is what I expect you to do; it is your job.

I don't think I could give any valuable comment on this since this course was done online due to the coronavirus outbreak, so this course was and will be regarded as an anomaly, but good solution to the crisis, well done! :)

Marcus. I did not learn much during his lectures at all, he rushed through everything even though he already shortened the lectures by 30 minutes. His notes were full of errors/mistakes which he said he would correct but never did. He encouraged us to ask questions but most of the times the answer was very confusing and not helpful at all.

It seemed like he didn't prepare what so ever before the lectures which was annoying for many reasons. One reason is that the lecture notes were full of mistakes. Another reason is that he wasn't sure what to go through, once he did two lectures in one by mistake. A third reason is that when he did examples, he got the wrong answer almost every time and when someone pointed that out he just said "ah well it's just stupid computations whatever". I mean it's stupid computations for him but not for me who am trying to learn. Here I can also add that Marcus was very reluctant to do examples at all and only did them after someone requested them. He always reacted with "UUUGH fine".

Once someone asked him to do an exam question on the board a couple of days before the exam and he just said that he didn't want to, the person asked him again to do it and he said that maybe he would upload the solution to canvas later on, he never did.

Yet another thing that was annoying with the fact that he didn't prepare any lectures was that he could easily spend 15 minutes trying to make the Apple pen work on his iPad. This happened 3 times and wasting 15 minutes on that when the lecture is already 30 minutes shorter than it should be is not okay.

He never replied to emails.

Regarding the exam and how it was delt, I think the way Marcus handle it was a disaster. He knew that a traditional exam was not gonna take place, he also said in the lecture weeks before the exam that it was gonna take place over Zoom with surveillance. Still, less than 24 hours before the exam he sends out an email saying that if you cannot arrange your phone and laptop in a way so that he can see your laptop while you're writing the exam you cannot take the exam and will have to wait until a traditional exam can take place. Less than 24 hours before the exam he announced this. I don't understand why he wasn't able to send that out a week before the exam. Many other courses had exams the same way, why couldn't he inform us better?

Another thing that I found inappropriate was that he was talking a lot about corona in the first lectures. He said stuff about what to do and not to do and a lot of stuff that I felt wasn't okay for him to say. He isn't an expert in that field and he should leave recommendations about the virus to Folkhälsomyndigheten. It definitely doesn't belong in the lectures for analysis in several variables 2.

I must say that I haven't met a teacher with such a lack of respect for the students before taking this course. Marcus really didn't seem to care at all about our learning and I must say that he hasn't taught me much at all, and I attended every single lecture.

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!
no
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No :)
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