Kursbokslut, Course review MATB21 Analysis in several variables 1, autumn term 2020

Course responsible: Marcus Carlsson
Other teachers: Daniele Gerosa
Number of students: 61.
Grades: 10 VG, 29 G, 22 U.

Evaluation

It was the second time we arranged teaching via Zoom, p.g.a. Coronavirus. Overall 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. During the spring the courses were held by me going through prewritten pdf-lecture notes, with occasional breaks for using an iPad to explain some detail or exercise. This was not optimal, so in this course I had ordinary lectures which I streamed via zoom. In summary, it is unclear which teaching form was most appreciated by the students. One thing that needs improvement, regardless, is the quality of the camera while lecturing over zoom. This is now available through the department.

Sammanfattning av kursvärderingen, student evaluation:

Students are overall happy with all key factors, except lectures, which they considered poorly planned.

Lärarnas kommentarer, teachers comments:

In house teaching is much better. Hard to connect to the students via zoom.

Evaluation of changes:

Online teaching is not as good as in class teaching

Suggestion for changes:

Return to classroom teaching when the pandemic allows for it.

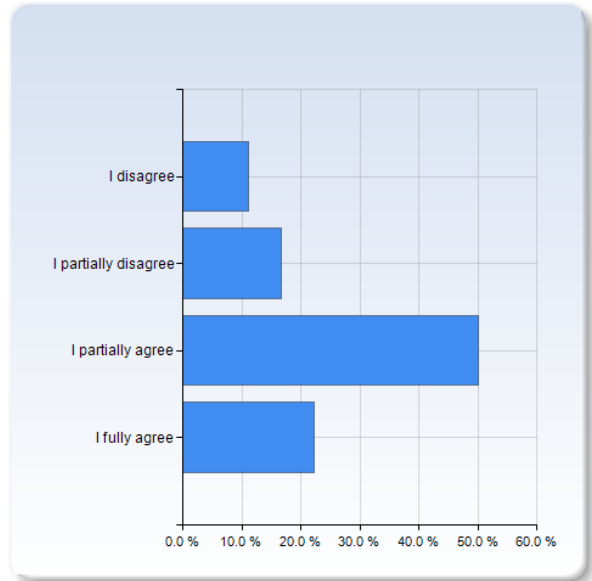**Evaluator:** Marcus Carlsson, 20 Dec 2020.

Answer Count: 18

The course in general

The content of the course matched my expectations.

The content of the course matched my expectations.	Number of Responses
I disagree	2 (11.1%)
I partially disagree	3 (16.7%)
I partially agree	9 (50.0%)
I fully agree	4 (22.2%)
Total	18 (100.0%)

	Mean	Standard Deviation
The content of the course matched my expectations.	2.8	0.9

The information about the course (schedule, exam etc.) via Internet has been satisfactory.
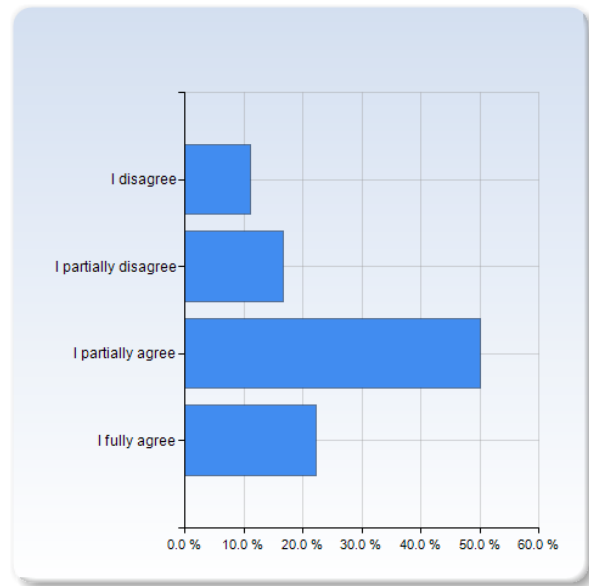
The information about the course (schedule, exam etc.) via Internet has been satisfactory.	Number of Responses
I disagree	3 (16.7%)
I partially disagree	1 (5.6%)
I partially agree	10 (55.6%)
I fully agree	4 (22.2%)
Total	18 (100.0%)
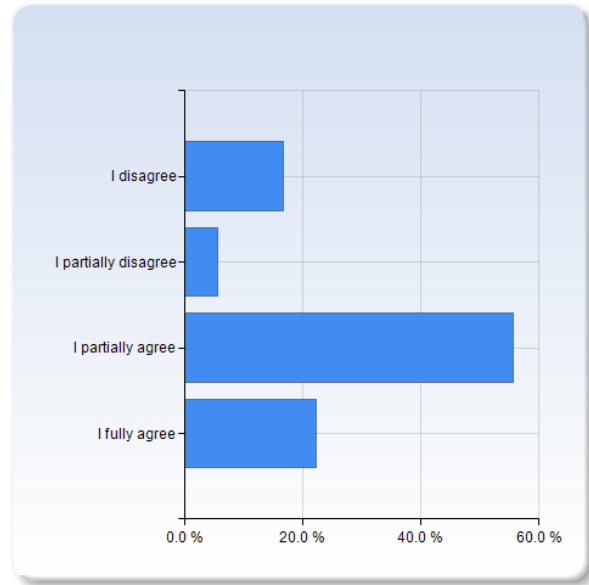
	Mean	Standard Deviation
The information about the course (schedule, exam etc.) via Internet has been satisfactory.	2.8	1.0

The information about the course (schedules, exam etc.) via lectures/and seminars has been satisfactory.

The information about the course (schedules, exam etc.) via lectures/and seminars has been satisfactory.	Number of Responses
I disagree	2 (11.1%)
I partially disagree	3 (16.7%)
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I fully agree	4 (22.2%)
Total	18 (100.0%)

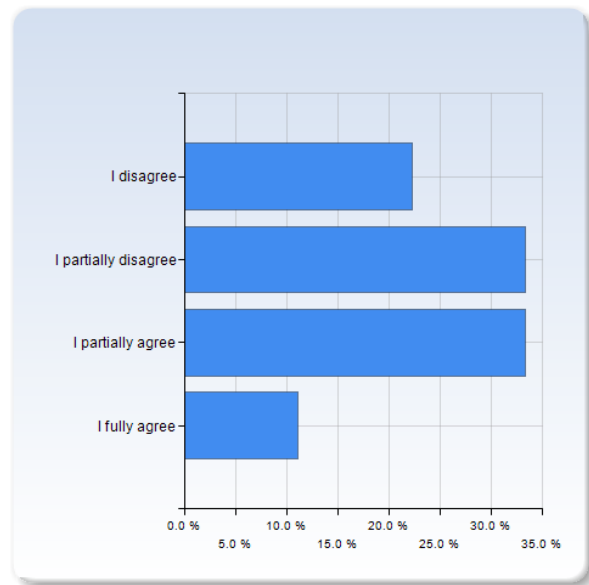|	Mean	Standard Deviation
The information about the course (schedules, exam etc.) via lectures/and seminars has been satisfactory.	2.8	0.9

The course was organized in a satisfactory manner.

The course was organized in a satisfactory manner.	Number of Responses
I disagree	7 (38.9%)
I partially disagree	5 (27.8%)
I partially agree	3 (16.7%)
I fully agree	3 (16.7%)
Total	18 (100.0%)
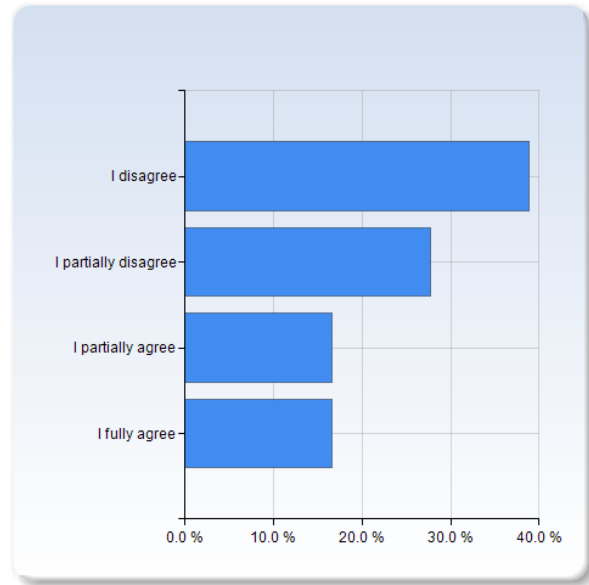
	Mean	Standard Deviation
The course was organized in a satisfactory manner.	2.1	1.1

The course material has been comprehensible.

The course material has been comprehensible.	Number of Responses
I disagree	4 (22.2%)
I partially disagree	6 (33.3%)
I partially agree	6 (33.3%)
I fully agree	2 (11.1%)
Total	18 (100.0%)

	Mean	Standard Deviation
The course material has been comprehensible.	2.3	1.0

My prior knowledge has been sufficient in order to be able to assimilate the contents of the course.

My prior knowledge has been sufficient in order to be able to assimilate the contents of the course.	Number of Responses
I disagree	1 (5.6%)
I partially disagree	3 (16.7%)
I partially agree	9 (50.0%)
I fully agree	5 (27.8%)
Total	18 (100.0%)
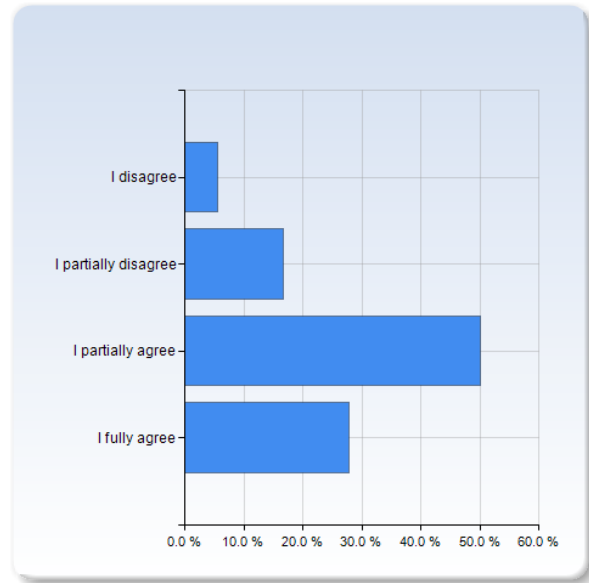
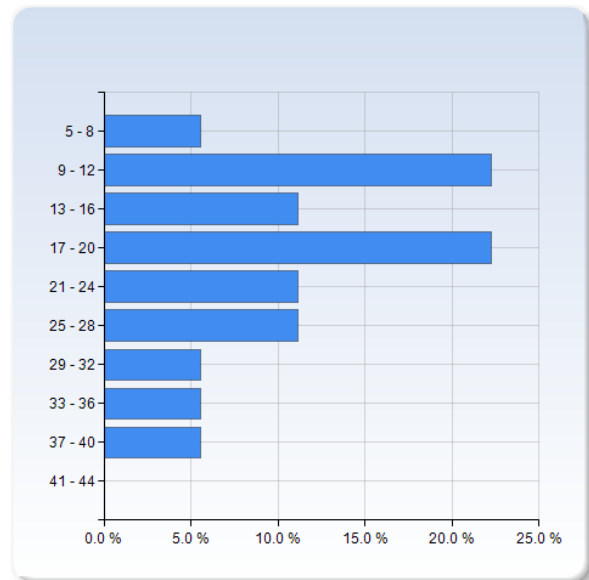|	Mean	Standard Deviation
My prior knowledge has been sufficient in order to be able to assimilate the contents of the course.	3.0	0.8

How many hours per week have you spent on studying for this course, including scheduled hours?

How many hours per week have you spent on studying for this course, including scheduled hours? - From

How many hours per week have you spent on studying for this course, including scheduled hours? - From	Number of Responses
5 - 8	1 (5.6%)
9 - 12	4 (22.2%)
13 - 16	2 (11.1%)
17 - 20	4 (22.2%)
21 - 24	2 (11.1%)
25 - 28	2 (11.1%)
29 - 32	1 (5.6%)
33 - 36	1 (5.6%)
37 - 40	1 (5.6%)
41 - 44	0 (0.0%)
Total	18 (100.0%)

	Mean	Standard Deviation
How many hours per week have you spent on studying for this course, including scheduled hours? - From	20.2	8.9

How many hours per week have you spent on studying for this course, including scheduled hours? - To

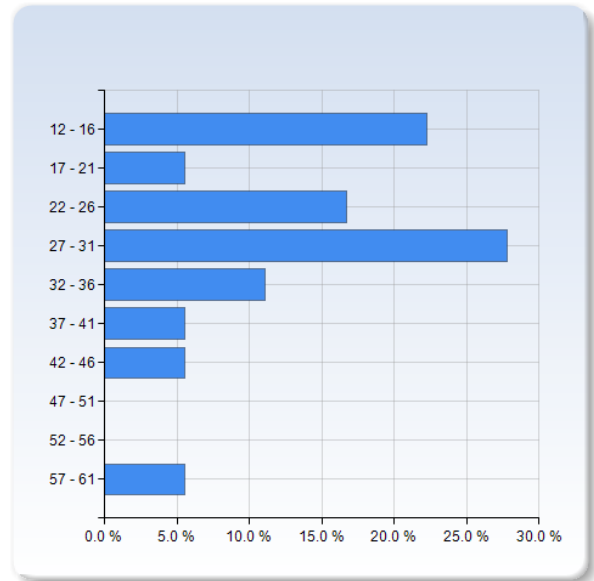| How many hours per week have you spent on studying for this course, including scheduled hours? - To	Number of Responses
12 - 16	4 (22.2%)
17 - 21	1 (5.6%)
22 - 26	3 (16.7%)
27 - 31	5 (27.8%)
32 - 36	2 (11.1%)
37 - 41	1 (5.6%)
42 - 46	1 (5.6%)
47 - 51	0 (0.0%)
52 - 56	0 (0.0%)
57 - 61	1 (5.6%)
Total	18 (100.0%)

	Mean	Standard Deviation
How many hours per week have you spent on studying for this course, including scheduled hours? - To	28.4	12.0

Course literature, course material

### The course literature has been informative and relevant.

The course literature has been informative and relevant.	Number of Responses
I totally disagree.	1 (5.6%)
I partially disagree.	3 (16.7%)
I partially agree.	8 (44.4%)
I completely agree.	6 (33.3%)
Total	18 (100.0%)
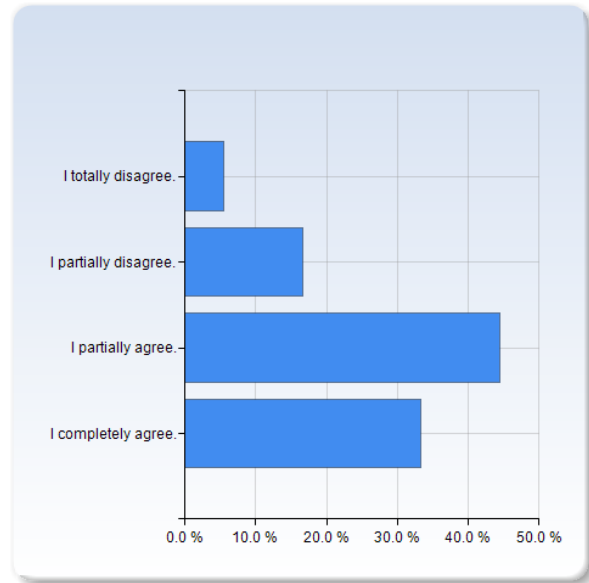
	Mean	Standard Deviation
The course literature has been informative and relevant.	3.1	0.9

I have used the course literature and material extensively.

| I have used the course literature and material extensively.	Number of Responses
I totally disagree.	2 (11.1%)
I partially disagree.	1 (5.6%)
I partially agree.	9 (50.0%)
I completely agree.	6 (33.3%)
Total	18 (100.0%)
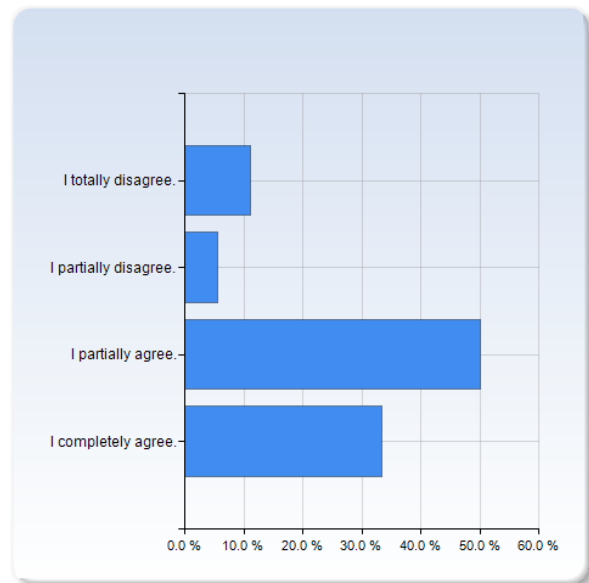
	Mean	Standard Deviation
I have used the course literature and material extensively.	3.1	0.9

The complementary course material has been satisfactory.

| The complementary course material has been satisfactory.	Number of Responses
I totally disagree.	1 (5.9%)
I partially disagree.	6 (35.3%)
I partially agree.	6 (35.3%)
I completely agree.	4 (23.5%)
Total	17 (100.0%)
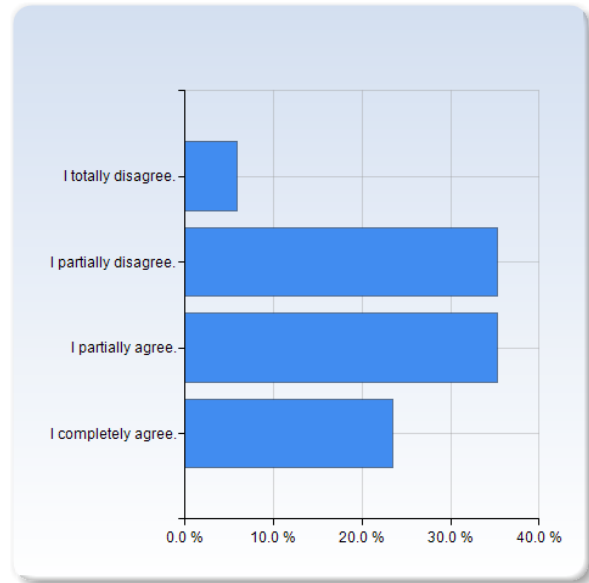
	Mean	Standard Deviation
The complementary course material has been satisfactory.	2.8	0.9

The course website

The course website was easy to reach and navigate.

The course website was easy to reach and navigate.	Number of Responses
I totally disagree.	1 (5.6%)
I partially disagree.	1 (5.6%)
I partially agree.	7 (38.9%)
I totally agree.	9 (50.0%)
Total	18 (100.0%)
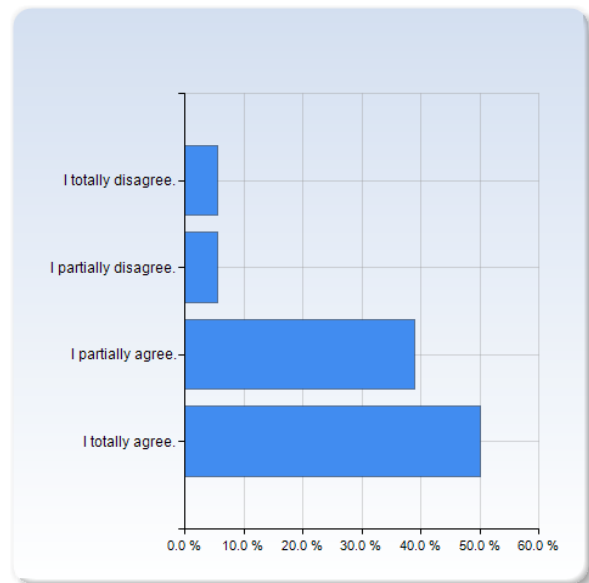
	Mean	Standard Deviation
The course website was easy to reach and navigate.	3.3	0.8

I have used the course website extensively during the course.

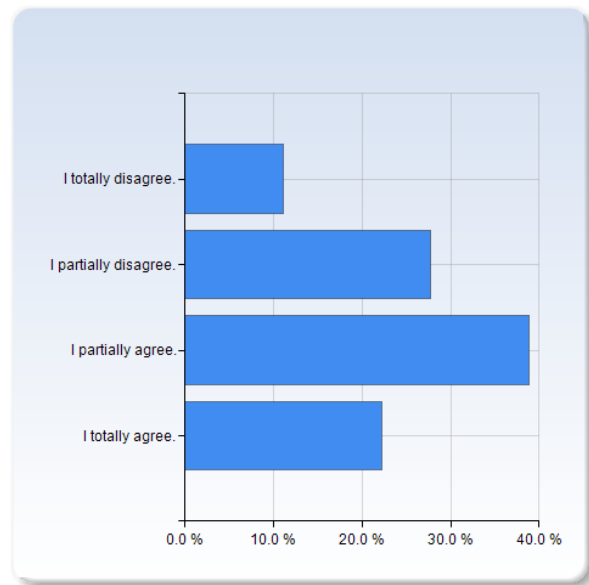| I have used the course website extensively during the course.	Number of Responses
I totally disagree.	0 (0.0%)
I partially disagree.	2 (11.1%)
I partially agree.	9 (50.0%)
I totally agree.	7 (38.9%)
Total	18 (100.0%)
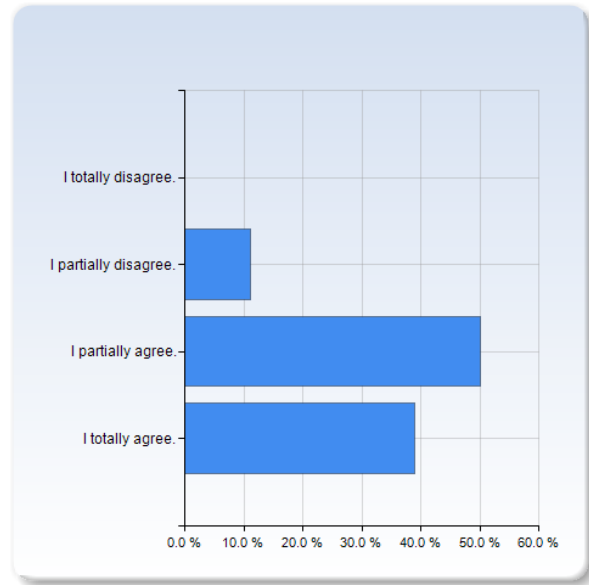
	Mean	Standard Deviation
I have used the course website extensively during the course.	3.3	0.7

The information posted on the course website has been satisfactory.

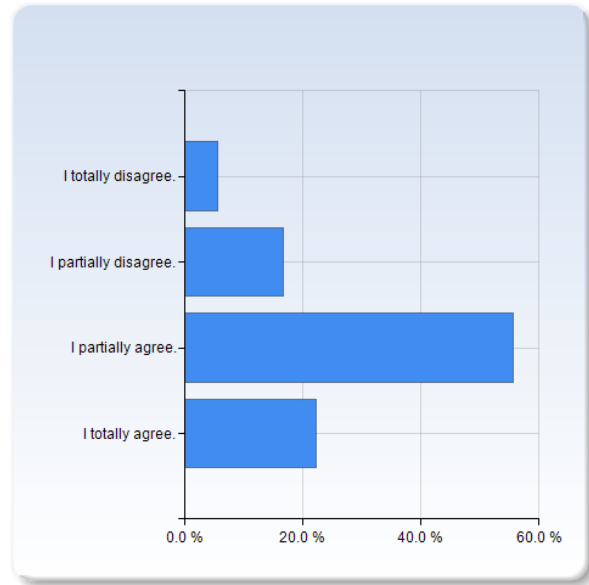| The information posted on the course website has been satisfactory.	Number of Responses
I totally disagree.	2 (11.1%)
I partially disagree.	5 (27.8%)
I partially agree.	7 (38.9%)
I totally agree.	4 (22.2%)
Total	18 (100.0%)

	Mean	Standard Deviation
The information posted on the course website has been satisfactory.	2.7	1.0

The material posted on the course website has been relevant.

The material posted on the course website has been relevant.	Number of Responses
I totally disagree.	1 (5.6%)
I partially disagree.	3 (16.7%)
I partially agree.	10 (55.6%)
I totally agree.	4 (22.2%)
Total	18 (100.0%)

	Mean	Standard Deviation
The material posted on the course website has been relevant.	2.9	0.8

Other comments about the course in general:

Other comments about the course in general:
Näe
Course literature does not go deep enough for the course.
The lectures were not that informative
There were some technical issues with the lectures that resulted in it sometimes being very hard to read what was written on the blackboard.
In general the course was very hard due to lack in the lecturer's lectures and the lack of support from the lecturer.
Marcus seems like a really cool and knowledge person in general but he is not very good lecturer. Very lazy and unengaged, he literally told us during a lecture, when a student asked a specific question about an exercise, that it was not his job to answer.. Like really? I don't like to roast him completely, but honeslty his teaching methods are 5/10 tops.

What did you like the most about the course?

What did you like the most about the course?
The nature of the subject itself was very interesting and lays the foundation for what is to come later.
Seminars
Nothing special really
The math and the different applications that's possible
Seminars were good
Good teachers! It was really good that the lectures and seminars where recorded and uploaded. I had to retake the exam and going through the recordings helped a lot in improving my understanding of the areas I hade trouble with.
No much
The seminar teacher showed how to solve exersices very well so it was easely understood and he also answered questions clearly and thoroughly.
The programming project highlighted interesting aspects of the course and were at a suitable difficulty level. The lecture notes were well-written and gave a suitable combination of theorems, proofs and examples.
Seminars

What features of the course need improvement?

| What features of the course need improvement? |
|---|
| The teacher needs to be more rigorous when going through some examples that are perhaps more computationally heavy instead of hand waving through. The same can be said about the proofs given. The lectures on zoom felt rather disorganised at times. |
| Lectures |
| Nothing special really |
| The lectures could use some more structure to it, that is instead of reading from a piece of paper or just talking about the lecture notes, writing everything from scratch on the blackboard would've been better. |
| Lectures are performed in a way so that the lecturer can do as little as possible. Incredibly lazy lecturer |
| Make exams that you are able to prepare for by doing the old exams and with material that are similar to them. Make the exams more clearly. Always grad ALL exams fully and don't be lazy when doing so. |
| The seminars worked poorly when they were essentially non-interactive. It was hard to follow on problems I had gotten stuck on. |
| The lecturer lacked organisation in the lectures and they were very hard to follow. He also mainly used a handwritten pdf file to point at during most of the lectures and that made it almost impossible to follow and to take notes on the lectures. He also refused to answer questions via messages in canvas and just ignored the messages and did not even bother to ask the students to ask the questions at the lectures because he did not find it important enough. And sometimes when a question was asked in the lectures he could not answer it because he did not bring the book to the lecture and asked if one could ask the seminar teacher instead. In every other course one has been able to ask questions via messages in canvas outside of the lectures so I do not see why it is so hard now. |
| The structure and the way of teaching |
| Information about exams came too late. The lectures where messy, unstructured, and unengaged. The information given in the lectures was not useable at all studying for the exam. It didn't feel like the lecturer wanted to hold the course at all! |
| SI |
| The lectures lacked coherent structure and often confused instead of clarified. |
| Clearer lectures |

Lectures

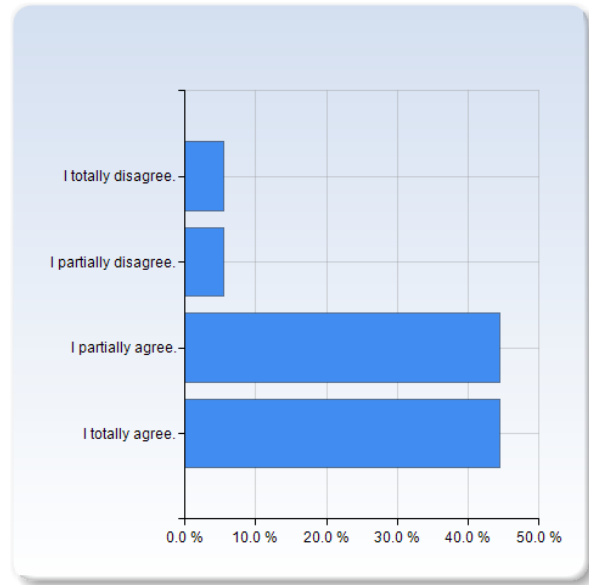## The planning of the lectures has been satisfactory.

The planning of the lectures has been satisfactory.	Number of Responses
I totally disagree.	5 (27.8%)
I partially disagree.	5 (27.8%)
I partially agree.	5 (27.8%)
I totally agree.	3 (16.7%)
Total	18 (100.0%)
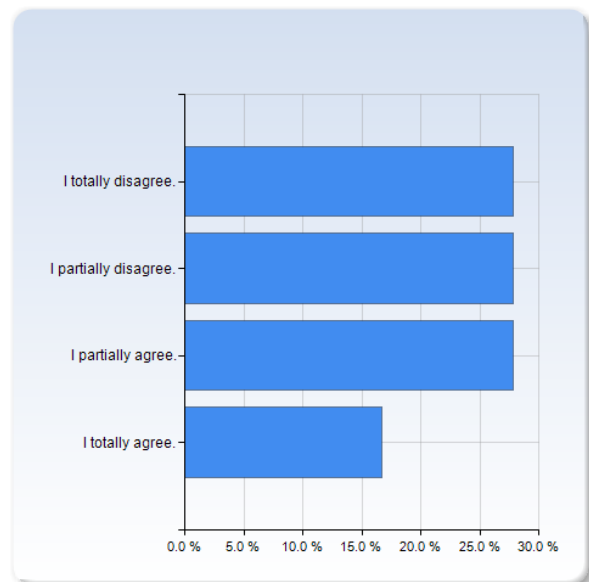
	Mean	Standard Deviation
The planning of the lectures has been satisfactory.	2.3	1.1

The number of lectures has been satisfactory.

The number of lectures has been satisfactory.	Number of Responses
I totally disagree.	1 (5.6%)
I partially disagree.	1 (5.6%)
I partially agree.	8 (44.4%)
I totally agree.	8 (44.4%)
Total	18 (100.0%)

	Mean	Standard Deviation
The number of lectures has been satisfactory.	3.3	0.8

The pace of the lectures matched the content of the course.

The pace of the lectures matched the content of the course.	Number of Responses
I totally disagree.	5 (27.8%)
I partially disagree.	3 (16.7%)
I partially agree.	5 (27.8%)
I totally agree.	5 (27.8%)
Total	18 (100.0%)
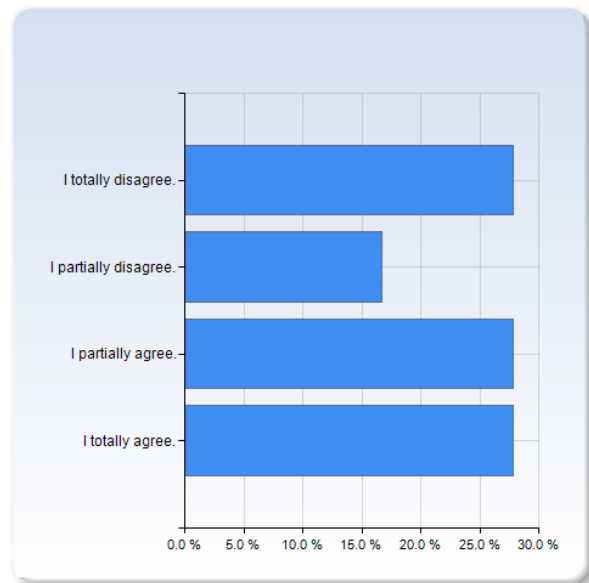
	Mean	Standard Deviation
The pace of the lectures matched the content of the course.	2.6	1.2

The lecturer presented the material in a pedagogical manner.

| The lecturer presented the material in a pedagogical manner.	Number of Responses
I totally disagree.	7 (41.2%)
I partially disagree.	8 (47.1%)
I partially agree.	2 (11.8%)
I totally agree.	0 (0.0%)
Total	17 (100.0%)
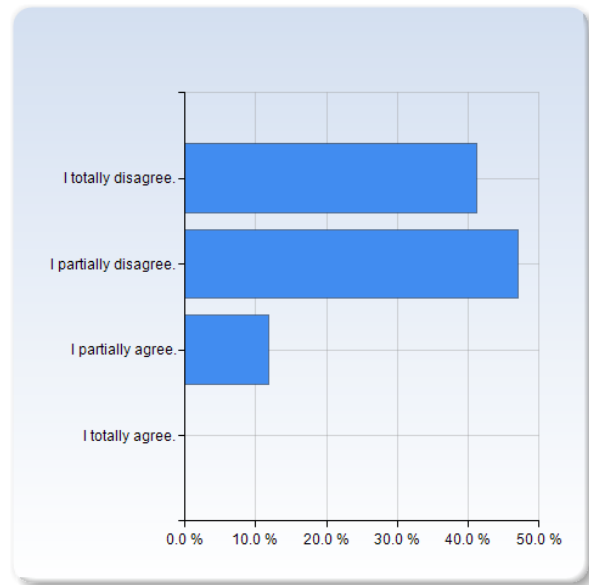
	Mean	Standard Deviation
The lecturer presented the material in a pedagogical manner.	1.7	0.7

To which extent did you attend the lectures? (percentage)

To which extent did you attend the lectures? (percentage)	Number of Responses
16 - 24	1 (5.6%)
25 - 33	1 (5.6%)
34 - 42	0 (0.0%)
43 - 51	0 (0.0%)
52 - 60	1 (5.6%)
61 - 69	0 (0.0%)
70 - 78	1 (5.6%)
79 - 87	0 (0.0%)
88 - 96	2 (11.1%)
97 - 105	12 (66.7%)
Total	18 (100.0%)
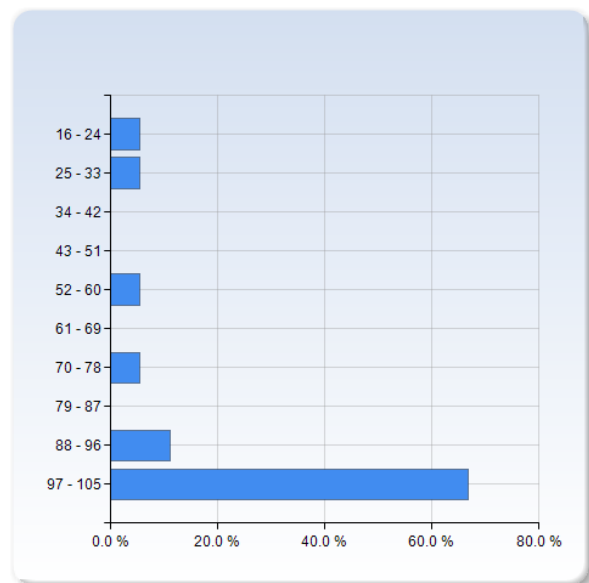
	Mean	Standard Deviation
To which extent did you attend the lectures? (percentage)	86.9	25.0

Other comments regarding the lectures:

| Other comments regarding the lectures: |
| --- |
| Personally, I found that the lectures were not presented in a clean manner and sometimes had a poor flow. This made it so that certain more important concepts and skills were not covered. |
| No real structure, hard do follow. |
| As stated before they should've had more structure to it. |
| Lectures have no structure what so ever. Most of the time lecturer blindly reads through some scanned notes |
| I would have preferred less lectures and have more time to do exercises/read the book. |
| The examples and similes were often confusing. |
| I am counting attendence as the amount of lectures that has been consumed. Though a lot of them where "attended" via the recorded lectures on youtube. That was a great addition. |
| The lecturer somtimes hasted in some of the content because he did not find the subject interesting enough or he thought that it was very easy and did not think about how the majority of the students felt about it. |
| Very bad, gave information not really used. My notes were useless |
| The lecturer used other notation, other formulations of key theorems and alternative (and occasionally incorrect) proofs as compared to the literature. It would be better to stick mainly to the lecture notes (which were very nicely organised and covered all relevant topics), giving clarifications and additional examples as needed. |
| hard to follow |

Seminars

The number of seminars has been satisfactory.

The number of seminars has been satisfactory.	Number of Responses
I totally disagree.	0 (0.0%)
I partially disagree.	2 (11.8%)
I partially agree.	5 (29.4%)
I totally agree.	10 (58.8%)
Total	17 (100.0%)
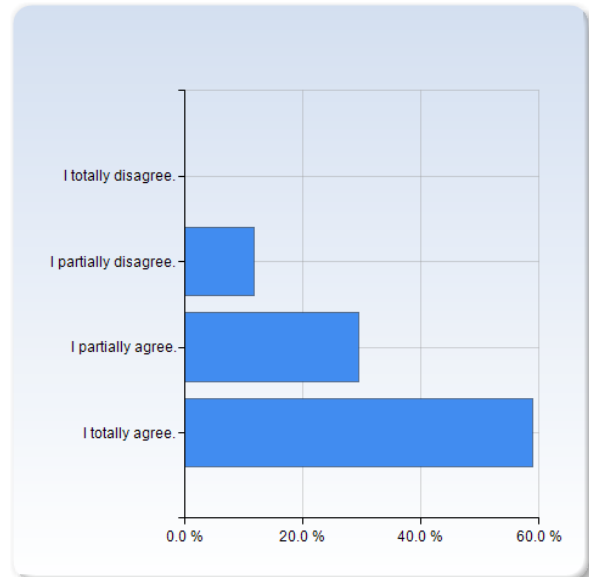
	Mean	Standard Deviation
The number of seminars has been satisfactory.	3.5	0.7

The teaching form and planning of the seminars has been satisfactory.

| The teaching form and planning of the seminars has been satisfactory.	Number of Responses
I totally disagree.	2 (11.1%)
I partially disagree.	3 (16.7%)
I partially agree.	7 (38.9%)
I totally agree.	6 (33.3%)
Total	18 (100.0%)
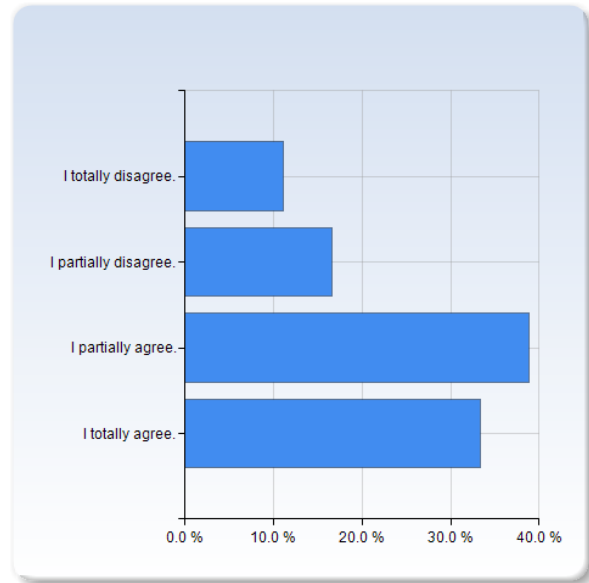
	Mean	Standard Deviation
The teaching form and planning of the seminars has been satisfactory.	2.9	1.0

## The seminars contributed to increase my understanding of the subject.

The seminars contributed to increase my understanding of the subject.	Number of Responses
I totally disagree.	3 (16.7%)
I partially disagree.	2 (11.1%)
I partially agree.	6 (33.3%)
I totally agree.	7 (38.9%)
Total	18 (100.0%)
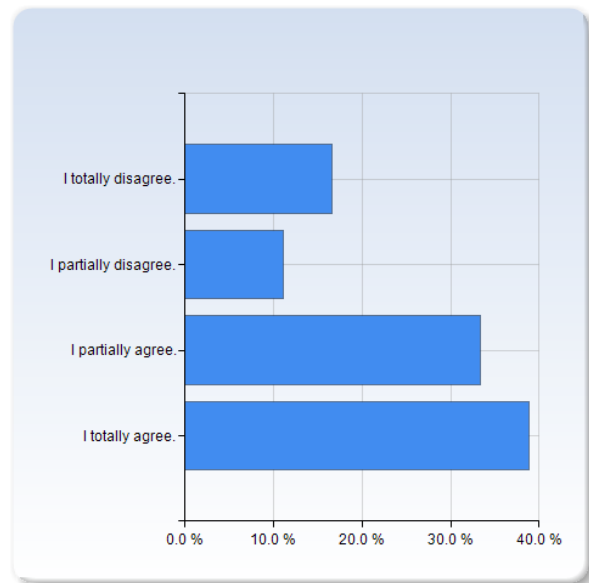
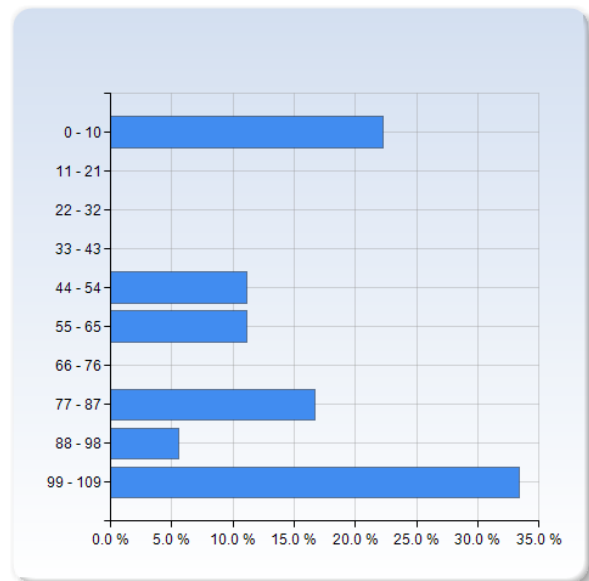|	Mean	Standard Deviation
The seminars contributed to increase my understanding of the subject.	2.9	1.1

I have actively participated in the seminars.

I have actively participated in the seminars.	Number of Responses
I totally disagree.	3 (16.7%)
I partially disagree.	4 (22.2%)
I partially agree.	6 (33.3%)
I totally agree.	5 (27.8%)
Total	18 (100.0%)
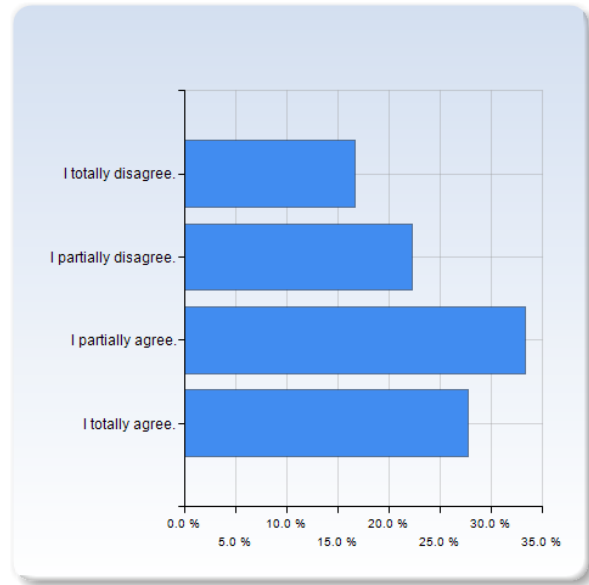
	Mean	Standard Deviation
I have actively participated in the seminars.	2.7	1.1

To which extent did you attend the seminars? (percentage)

To which extent did you attend the seminars? (percentage)	Number of Responses
0 - 10	4 (22.2%)
11 - 21	0 (0.0%)
22 - 32	0 (0.0%)
33 - 43	0 (0.0%)
44 - 54	2 (11.1%)
55 - 65	2 (11.1%)
66 - 76	0 (0.0%)
77 - 87	3 (16.7%)
88 - 98	1 (5.6%)
99 - 109	6 (33.3%)
Total	18 (100.0%)

	Mean	Standard Deviation
To which extent did you attend the seminars? (percentage)	64.7	37.7

How many hours did you spend to prepare for the seminars?

How many hours did you spend to prepare for the seminars?	Number of Responses
0 - 1	6 (42.9%)
2 - 3	7 (50.0%)
4 - 5	0 (0.0%)
6 - 7	0 (0.0%)
8 - 9	0 (0.0%)
10 - 11	1 (7.1%)
12 - 13	0 (0.0%)
14 - 15	0 (0.0%)
16 - 17	0 (0.0%)
18 - 19	0 (0.0%)
Total	14 (100.0%)
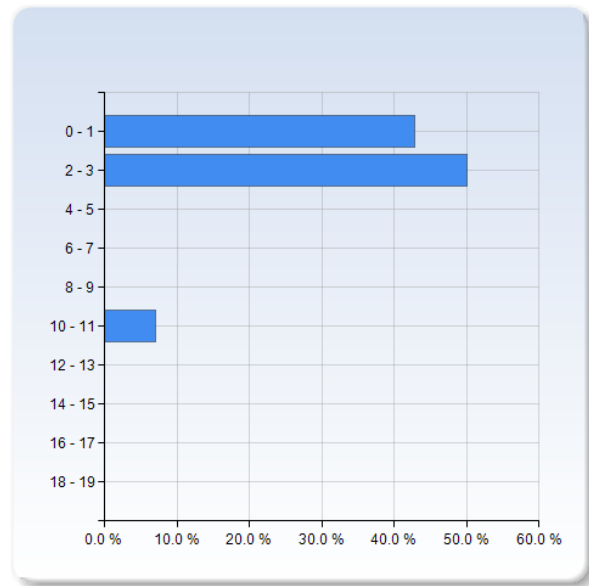
	Mean	Standard Deviation
How many hours did you spend to prepare for the seminars?	2.1	2.5

Other comments regarding the seminars.

| Other comments regarding the seminars. |
|---|
| I did not really attend the seminars, as I preferred to go through the problems and find the solutions on my own. From what I saw, the teacher was competent and clear in their presentation of the course material. |
| Great help. |
| They were good, quick paced and informative, but I decided they weren't necessary for my progression |
| Daniele was great! Really helped the learning process. |
| The structure didn't work for me. |
| The teacher during the seminars did a great job and was vital for my understanding of the course and was the only one I felt comfortable asking questions to. |
| The seminars were well-prepared and the solutions were presented in a pedagogical way. |
| well presented, but not as helpful as they would have been in person |

Projects, assignments

## The degree of difficulty of the assignments matched the content of the course.

The degree of difficulty of the assignments matched the content of the course.	Number of Responses
I totally disagree.	0 (0.0%)
I partially disagree.	2 (12.5%)
I partially agree.	6 (37.5%)
I totally agree.	8 (50.0%)
Total	16 (100.0%)
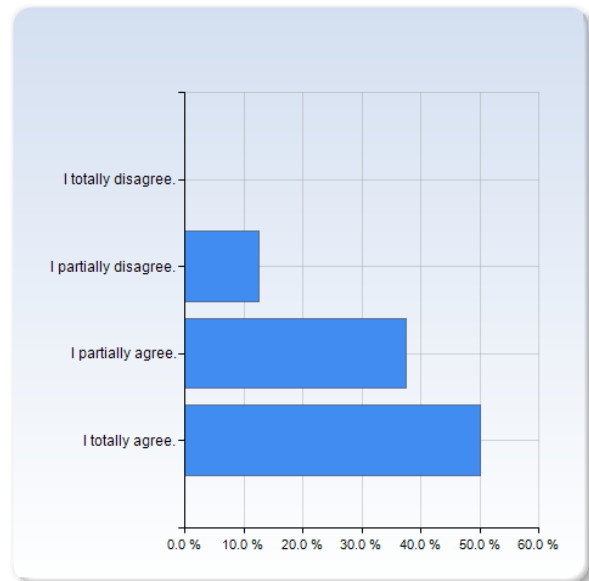
	Mean	Standard Deviation
The degree of difficulty of the assignments matched the content of the course.	3.4	0.7

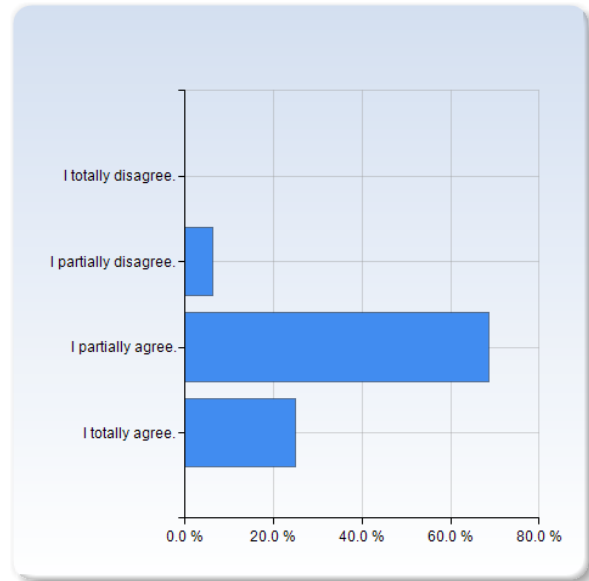## The assignments contributed to increase my understanding of the subject.

The assignments contributed to increase my understanding of the subject.	Number of Responses
I totally disagree.	1 (6.3%)
I partially disagree.	0 (0.0%)
I partially agree.	10 (62.5%)
I totally agree.	5 (31.3%)
Total	16 (100.0%)
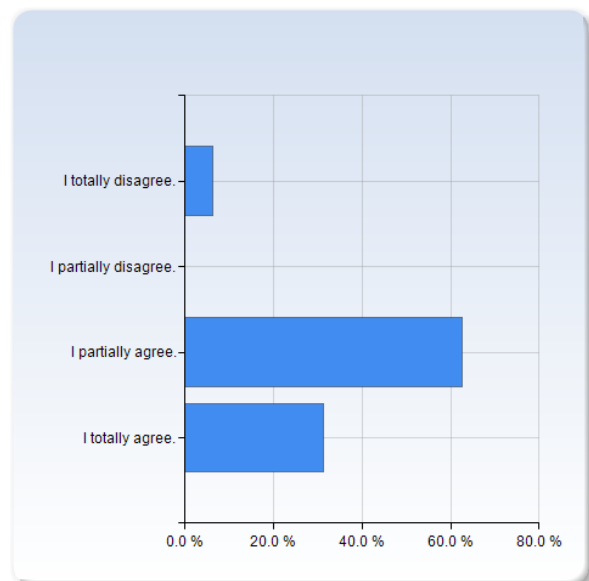
	Mean	Standard Deviation
The assignments contributed to increase my understanding of the subject.	3.2	0.8

The assignments contributed to increase my ability to communicate my mathematical knowledge.

The assignments contributed to increase my ability to communicate my mathematical knowledge.	Number of Responses
I totally disagree.	0 (0.0%)
I partially disagree.	1 (6.3%)
I partially agree.	11 (68.8%)
I totally agree.	4 (25.0%)
Total	16 (100.0%)

	Mean	Standard Deviation
The assignments contributed to increase my ability to communicate my mathematical knowledge.	3.2	0.5

The planning and implementation of the assignments has been satisfactory.

The planning and implementation of the assignments has been satisfactory.	Number of Responses
I totally disagree.	0 (0.0%)
I partially disagree.	5 (31.3%)
I partially agree.	6 (37.5%)
I totally agree.	5 (31.3%)
Total	16 (100.0%)
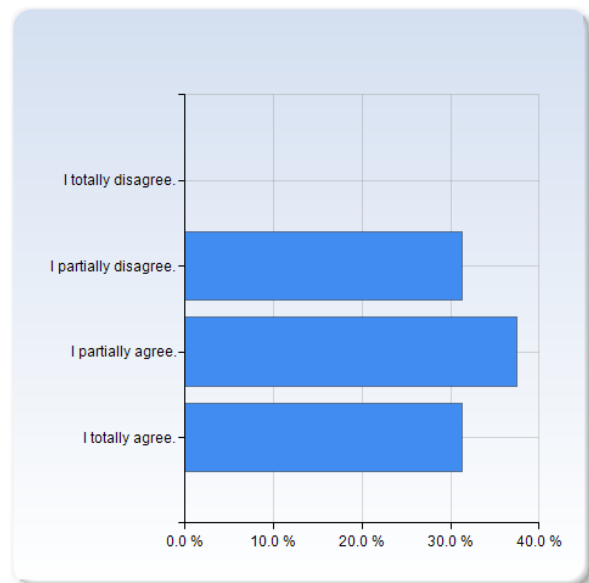
	Mean	Standard Deviation
The planning and implementation of the assignments has been satisfactory.	3.0	0.8

Other comments about the assignments:

| Other comments about the assignments: |
|---|
| Feel like it was more focus on making the programming very difficult rather than applying the actual mathematical concepts |
| Were there projects/assignments? |
| The assingment had its presentation after the course exam and collided with the new courses that started the week after the exam. This should maybe be looked into in the future. |
| To little help was given. Should have been scheduled times where we could ask questions because the communication through canvas was really bad |
| Good, pretty easy, not really necessary |

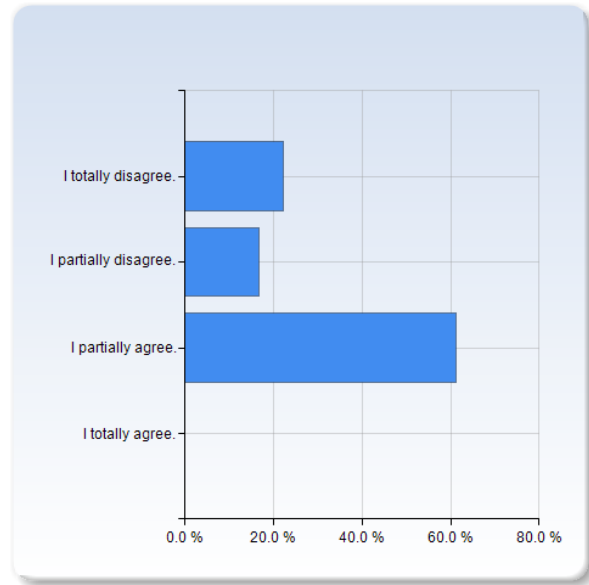## Examination

The examination form has been satisfactory.

The examination form has been satisfactory.	Number of Responses
I totally disagree.	4 (22.2%)
I partially disagree.	4 (22.2%)
I partially agree.	9 (50.0%)
I totally agree.	1 (5.6%)
Total	18 (100.0%)
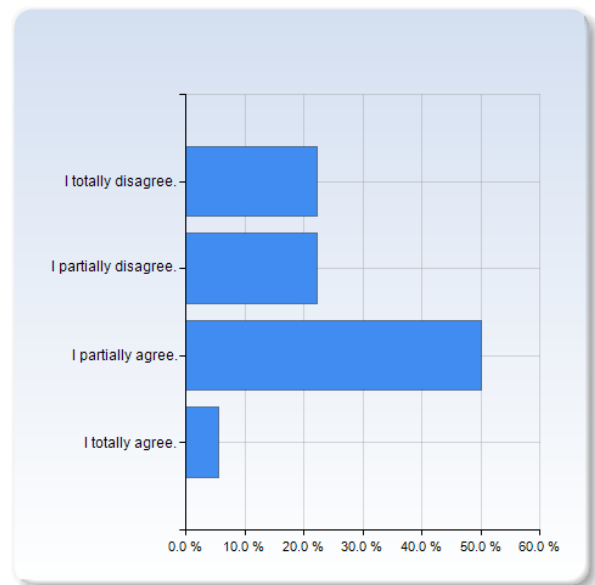
	Mean	Standard Deviation
The examination form has been satisfactory.	2.4	0.9

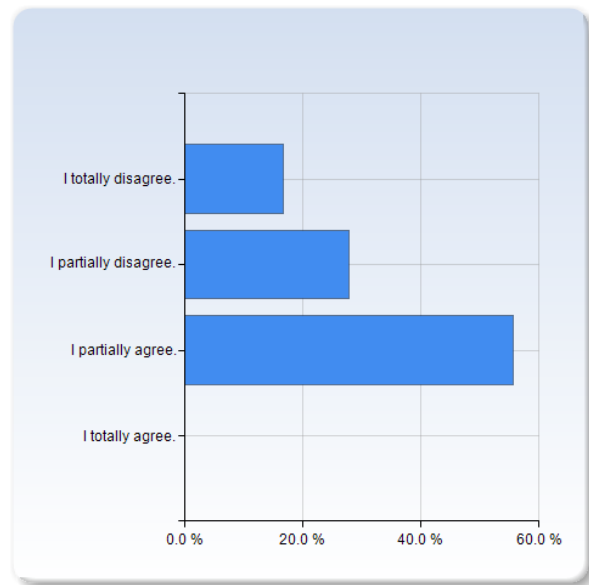## The degree of difficulty of the examination matched the content of the course.

The degree of difficulty of the examination matched the content of the course.	Number of Responses
I totally disagree.	4 (22.2%)
I partially disagree.	3 (16.7%)
I partially agree.	11 (61.1%)
I totally agree.	0 (0.0%)
Total	18 (100.0%)

	Mean	Standard Deviation
The degree of difficulty of the examination matched the content of the course.	2.4	0.8

The exam questions reflected the content of the course and matched the learning objectives.
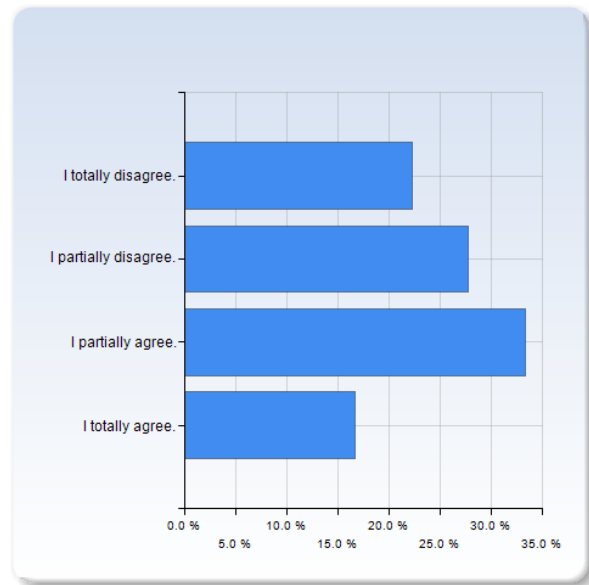
The exam questions reflected the content of the course and matched the learning objectives.	Number of Responses
I totally disagree.	3 (16.7%)
I partially disagree.	5 (27.8%)
I partially agree.	10 (55.6%)
I totally agree.	0 (0.0%)
Total	18 (100.0%)

	Mean	Standard Deviation
The exam questions reflected the content of the course and matched the learning objectives.	2.4	0.8

The grade that I received on the exam reflects my work during the course.

The grade that I received on the exam reflects my work during the course.	Number of Responses
I totally disagree.	4 (22.2%)
I partially disagree.	5 (27.8%)
I partially agree.	6 (33.3%)
I totally agree.	3 (16.7%)
Total	18 (100.0%)

	Mean	Standard Deviation
The grade that I received on the exam reflects my work during the course.	2.4	1.0

Other comments regarding the examination:

Other comments regarding the examination:
Whereas the rather unorthodox substitution for question 1 hindered my confidence going forward, I still found that the question itself was fair, and in hindsight, I should have been able to navigate the question using my prior knowledge. However, I found that the exam was heavily biased towards optimisation, leaving concepts that I had personally dedicated quite a bit of time towards understanding such as PDEs completely off the exam. While the exam was relatively easy, and my grade is due primarily to my own shortcomings and not exclusively due to the given exam, I still feel that the exam did a poor job of properly representing the material of the course.
Make exams that are somewhat like the old once
It's frustrating when there are questions that entirely hinge on knowing the specifics of a term that was mentioned in a lecture but which I don't recall any exercises on. It feel like I'm being tested on minutia instead of the meat of the course.
The exam was, in my opinion, unpredictable and unnecessarily tricky. While fairly covering the course subjects a lot of questions where clad in ambiguity making them harder than they needed to be. Even compared to the wide range of past exams this one was particularly tricky.
The way the examination was taken should be improved if it is done from home again because it was 5 hours straight where we were survailanced over zoom which made it a bit more difficult to go to the bathroom and it could have made it more possible for people to cheat and people who did not cheat to feel uncertain of going to the bathroom and risking suspicion.
Receiving responses on questions during the exam was occasionally very slow. There should be several people supervising these online exams and not just one.

What is your opinion about this course evaluation form?

What is your opinion about this course evaluation form?
Bit long but goes quickly anyway
The bit about projects/assignments threw me off.
Good to allow feedback even though i didnt have a lot of constructive feedback to give myself.
It is good so one maybe could affect the course to the better for the students taking it in the fututre.