Summary for Algebraic Structures, MATM31, Spring semester 2021.

Course responsible: Arne Meurman
Other teachers: None
Number of students: 27
Grade at first exam: 2 V, 7 G, 8 U

Evaluation

Teachers comment: Hopefully the course can be given with normal lectures in a class room the next time the course is given (as opposed to Zoom-streamed lectures). It will probably be useful for the teachers of the courses Algebraic Structures and Discrete Mathematics, to continue discussing the overlap between the courses. This is still felt to be too large by some students.

Evaluation of changes since last time the course was given: In accordance with the new general study plan, error correcting codes have been replaced by structure theory of finite fields. The lectures on finite fields were felt to be too rushed by some students.

Suggestion of changes until next time the course is given: None.

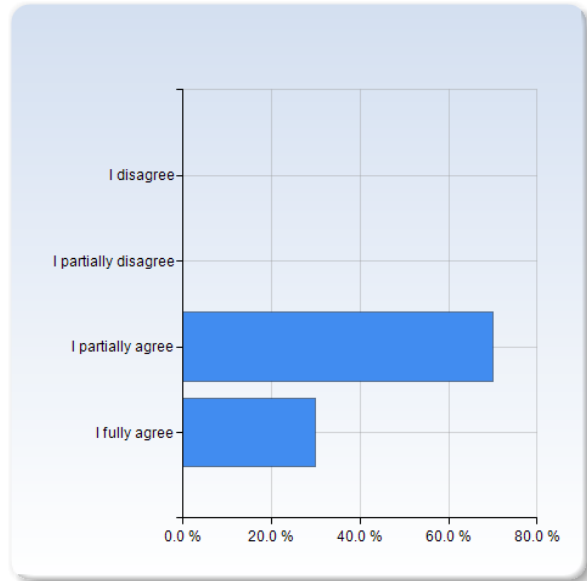**Responsible and date for this summary:** Arne Meurman, 4 May, 2021.

Answer Count: 10

The course in general
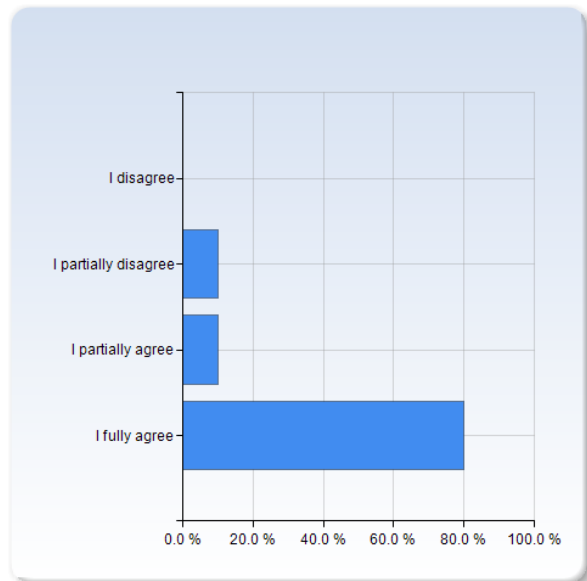
The content of the course matched my expectations.

The content of the course matched my expectations.	Number of Responses
I disagree	0 (0.0%)
I partially disagree	0 (0.0%)
I partially agree	7 (70.0%)
I fully agree	3 (30.0%)
Total	10 (100.0%)

	Mean	Standard Deviation
The content of the course matched my expectations.	3.3	0.5

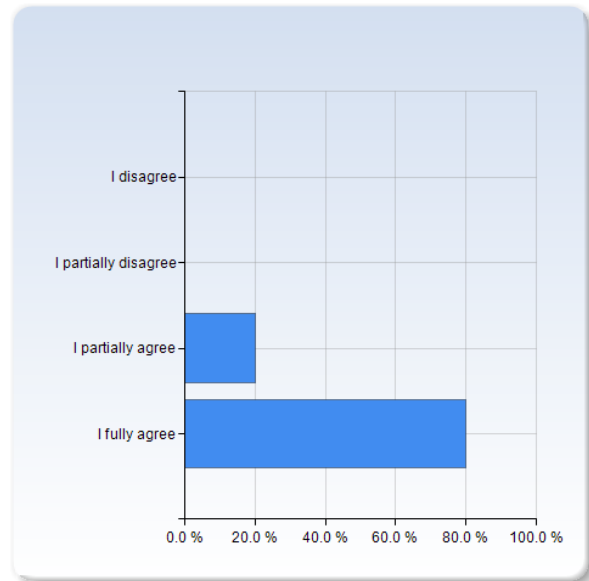### The information about the course (schedule, exam etc.) via Internet has been satisfactory.

The information about the course (schedule, exam etc.) via Internet has been satisfactory.	Number of Responses
I disagree	0 (0.0%)
I partially disagree	1 (10.0%)
I partially agree	1 (10.0%)
I fully agree	8 (80.0%)
Total	10 (100.0%)

	Mean	Standard Deviation
The information about the course (schedule, exam etc.) via Internet has been satisfactory.	3.7	0.7

## 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	0 (0.0%)
I partially disagree	0 (0.0%)
I partially agree	2 (20.0%)
I fully agree	8 (80.0%)
Total	10 (100.0%)

	Mean	Standard Deviation
The information about the course (schedules, exam etc.) via lectures/and seminars has been satisfactory.	3.8	0.4

## The course was organized in a satisfactory manner.

The course was organized in a satisfactory manner.	Number of Responses
I disagree	0 (0.0%)
I partially disagree	2 (20.0%)
I partially agree	2 (20.0%)
I fully agree	6 (60.0%)
Total	10 (100.0%)
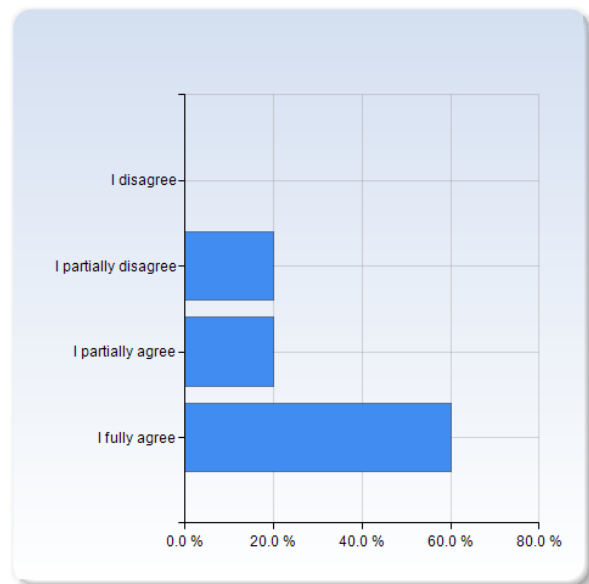
	Mean	Standard Deviation
The course was organized in a satisfactory manner.	3.4	0.8

The course material has been comprehensible.

The course material has been comprehensible.	Number of Responses
I disagree	0 (0.0%)
I partially disagree	0 (0.0%)
I partially agree	1 (10.0%)
I fully agree	9 (90.0%)
Total	10 (100.0%)
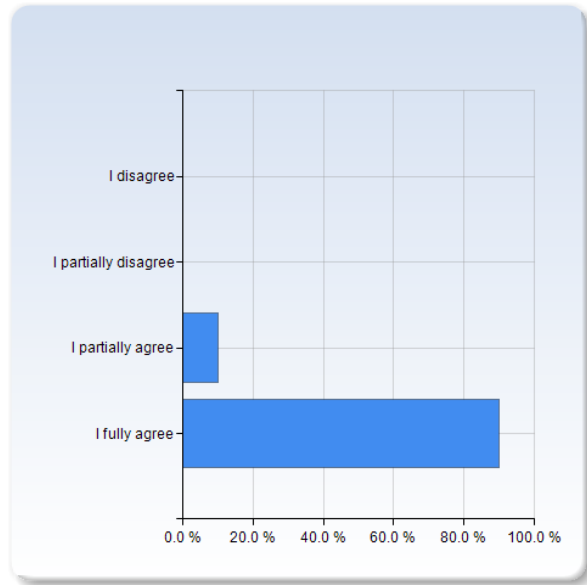
	Mean	Standard Deviation
The course material has been comprehensible.	3.9	0.3

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	0 (0.0%)
I partially disagree	0 (0.0%)
I partially agree	1 (10.0%)
I fully agree	9 (90.0%)
Total	10 (100.0%)

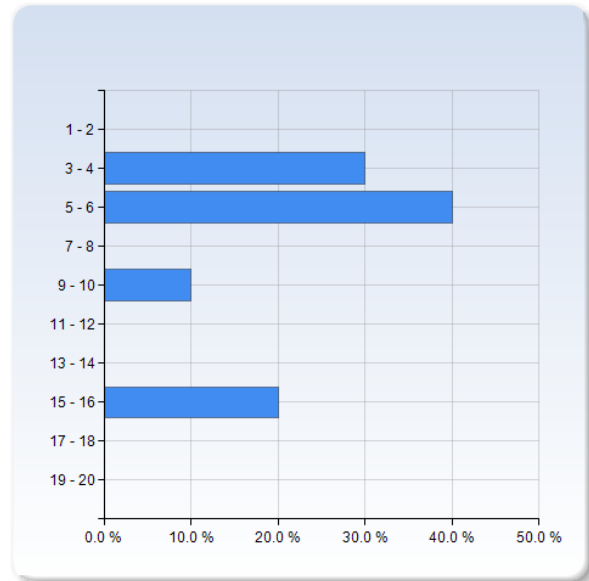|	Mean	Standard Deviation
My prior knowledge has been sufficient in order to be able to assimilate the contents of the course.	3.9	0.3

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
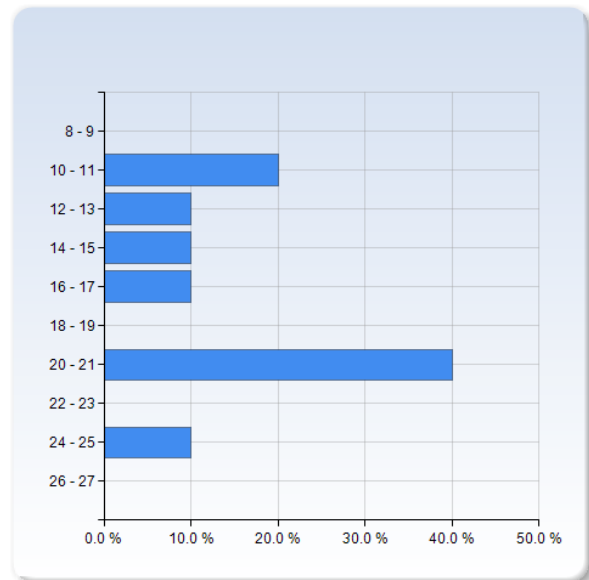
How many hours per week have you spent on studying for this course, including scheduled hours? - From	Number of Responses
1 - 2	0 (0.0%)
3 - 4	3 (30.0%)
5 - 6	4 (40.0%)
7 - 8	0 (0.0%)
9 - 10	1 (10.0%)
11 - 12	0 (0.0%)
13 - 14	0 (0.0%)
15 - 16	2 (20.0%)
17 - 18	0 (0.0%)
19 - 20	0 (0.0%)
Total	10 (100.0%)

	Mean	Standard Deviation
How many hours per week have you spent on studying for this course, including scheduled hours? - From	7.7	4.5

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
8 - 9	0 (0.0%)
10 - 11	2 (20.0%)
12 - 13	1 (10.0%)
14 - 15	1 (10.0%)
16 - 17	1 (10.0%)
18 - 19	0 (0.0%)
20 - 21	4 (40.0%)
22 - 23	0 (0.0%)
24 - 25	1 (10.0%)
26 - 27	0 (0.0%)
Total	10 (100.0%)

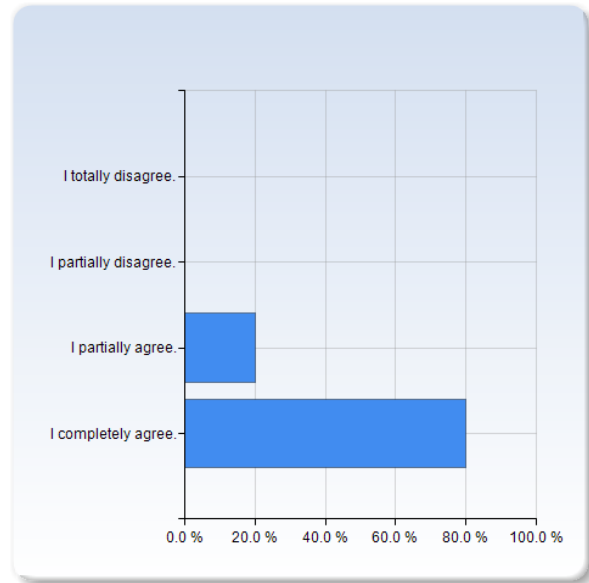|	Mean	Standard Deviation
How many hours per week have you spent on studying for this course, including scheduled hours? - To	16.7	4.9

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.	0 (0.0%)
I partially disagree.	0 (0.0%)
I partially agree.	2 (20.0%)
I completely agree.	8 (80.0%)
Total	10 (100.0%)

	Mean	Standard Deviation
The course literature has been informative and relevant.	3.8	0.4

I have used the course literature and material extensively.

| I have used the course literature and material extensively.	Number of Responses
I totally disagree.	0 (0.0%)
I partially disagree.	1 (10.0%)
I partially agree.	1 (10.0%)
I completely agree.	8 (80.0%)
Total	10 (100.0%)
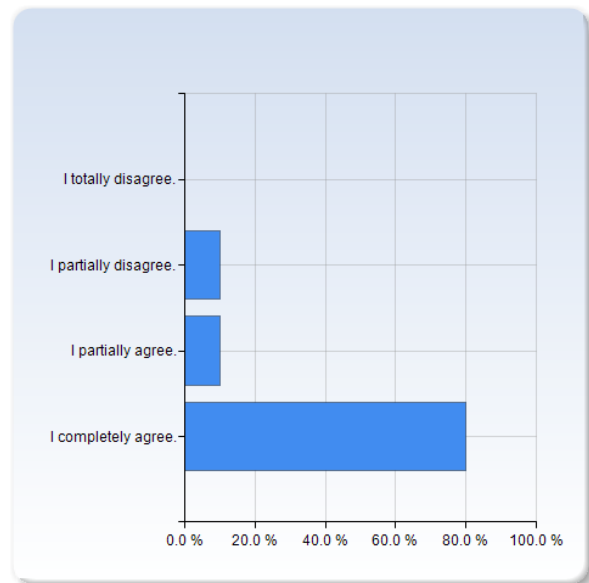
	Mean	Standard Deviation
I have used the course literature and material extensively.	3.7	0.7

The complementary course material has been satisfactory.

The complementary course material has been satisfactory.	Number of Responses
I totally disagree.	1 (11.1%)
I partially disagree.	3 (33.3%)
I partially agree.	1 (11.1%)
I completely agree.	4 (44.4%)
Total	9 (100.0%)
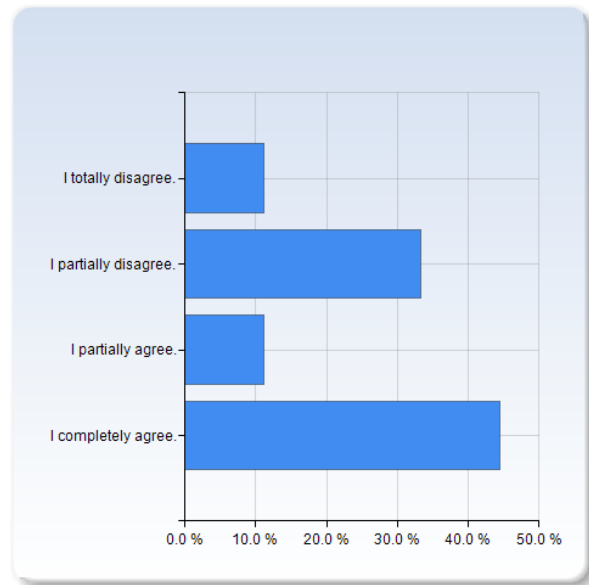
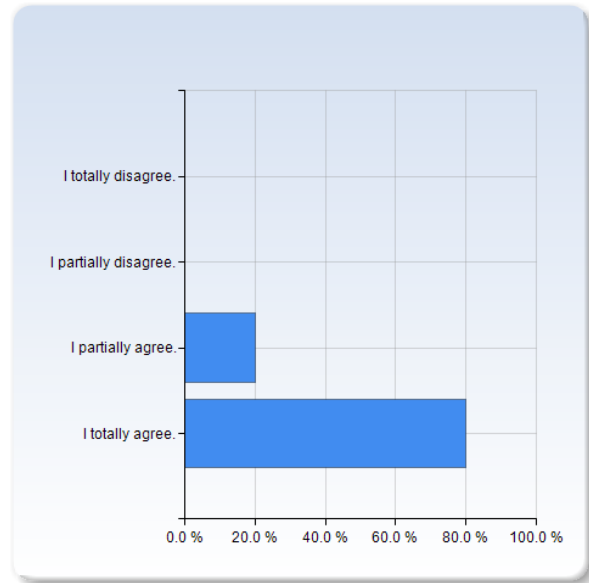|	Mean	Standard Deviation
The complementary course material has been satisfactory.	2.9	1.2

The course website
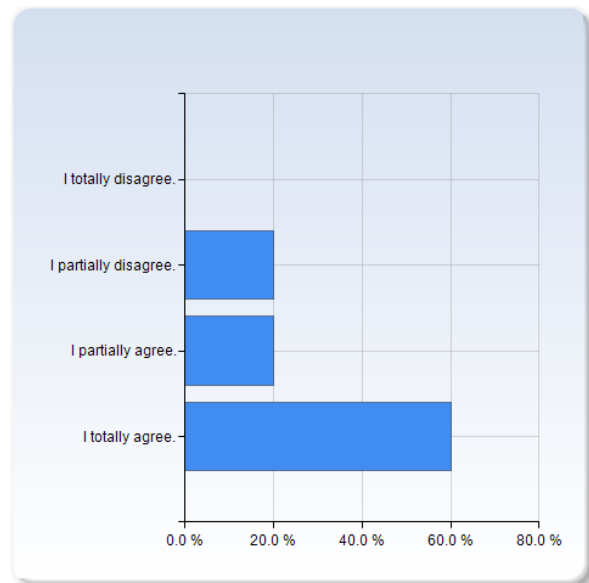
The course website was easy to reach and navigate.

The course website was easy to reach and navigate.	Number of Responses
I totally disagree.	0 (0.0%)
I partially disagree.	0 (0.0%)
I partially agree.	2 (20.0%)
I totally agree.	8 (80.0%)
Total	10 (100.0%)

	Mean	Standard Deviation
The course website was easy to reach and navigate.	3.8	0.4

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 (20.0%)
I partially agree.	2 (20.0%)
I totally agree.	6 (60.0%)
Total	10 (100.0%)

	Mean	Standard Deviation
I have used the course website extensively during the course.	3.4	0.8

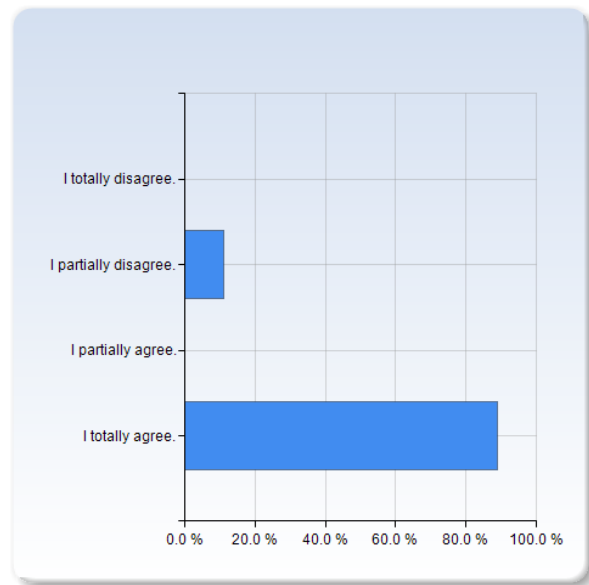## The information posted on the course website has been satisfactory.

The information posted on the course website has been satisfactory.	Number of Responses
I totally disagree.	0 (0.0%)
I partially disagree.	1 (10.0%)
I partially agree.	2 (20.0%)
I totally agree.	7 (70.0%)
Total	10 (100.0%)
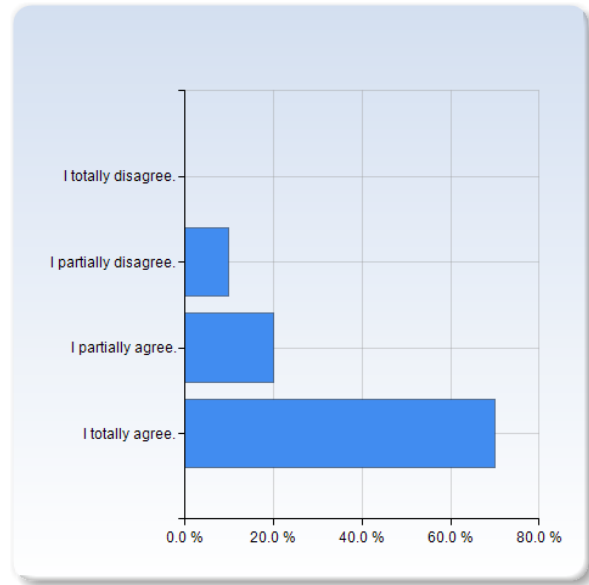
	Mean	Standard Deviation
The information posted on the course website has been satisfactory.	3.6	0.7

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.	0 (0.0%)
I partially disagree.	1 (11.1%)
I partially agree.	0 (0.0%)
I totally agree.	8 (88.9%)
Total	9 (100.0%)

	Mean	Standard Deviation
The material posted on the course website has been relevant.	3.8	0.7

Other comments about the course in general:

Other comments about the course in general:

Groups were very interesting. I would maybe have liked a little more connection to symmetry, some more help with intuition and maybe some small examples of applications.

Nice course, a bit too hard of an examination

The exam was much more difficult than the exercises we did during the course, and also more difficult than previous exams.

I think that the overlap with discrete mathematics, the Foundations of algebra and Number theory should be looked at. The first 8 lectures were essentially repetition from discrete mathematics (taken spring 2020) and foundations of algebra.

As there are not many algebra courses in Lund it feels a bit discouraging to repeat the same content in several courses.

I think Arne's teaching style was very good concerning the covid format. I liked that the course was so organised.

It misses Unique Factorisation Domains in my opinion.

What did you like the most about the course?

What did you like the most about the course?

The content of the lectures/course book.

The book was very good. The course was very good practice for mathematics in general, lots and lots of practice doing proofs. I especially liked doing lots of easy proofs. Surprisingly that has never been part of any other mathematics course.

The part about groups and
normal subgroups

Nice that the lecture notes were scanned and published on Canvas.

Well organised and the professor was good at explaining.

What features of the course need improvement?

What features of the course need improvement?

There were far too few teacher les activities. If the course had been given at campus, we students would have had been able to help each other and discuss the course among us, and then we would have not needed as mucg guidance. But since the course was given online, we did not have that possibility, which meant that we needed more teacher les activities/times to ask questions etc. There were also not enough time for the lectures I believe. There should have been more lectures.

The lectures were quite monotonous and followed the book very closely, making them feel redundant. I used the book instead.

It could have used a bit more hours, because the lectures were always a bit rushed near the end

I think the course content and exercises was too easy the first four weeks (having read discrete mathematics, it was a lot of repetition). On the other hand the exam was very difficult.

In general, I also dislike oral exams in math courses. I think written exams is a better way to show mathematical skills - then you show you are actually able to use the mathematics you have learned to solve new problems, which probably is the point of studying the course. The oral exam is just about spending hours trying to remember all proofs.

The first half of the course is too easy in my opinion (since Discrete mathematics and Foundations of Algebra are prerequisites) and then gets difficult rather fast after that. It would've been nice to spend less time on repetition.

More questions and practice exams.

The notions in the last week (Finite Fields in particular) were rushed, which has been a big issue in relation to the exam.

Lectures
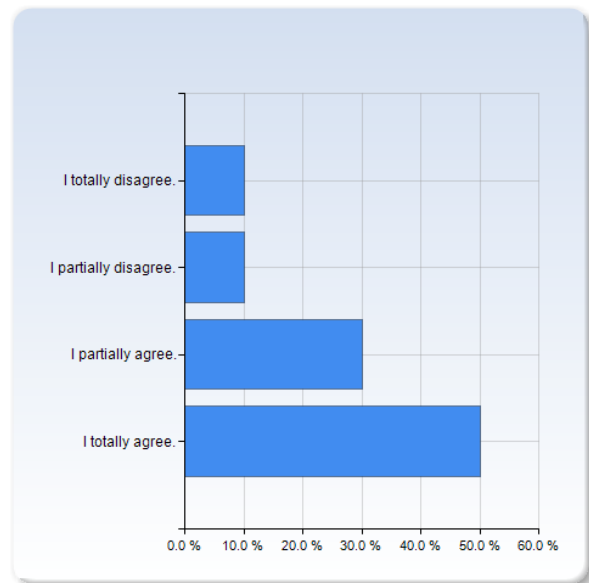
The planning of the lectures has been satisfactory.

The planning of the lectures has been satisfactory.	Number of Responses
I totally disagree.	1 (10.0%)
I partially disagree.	1 (10.0%)
I partially agree.	3 (30.0%)
I totally agree.	5 (50.0%)
Total	10 (100.0%)
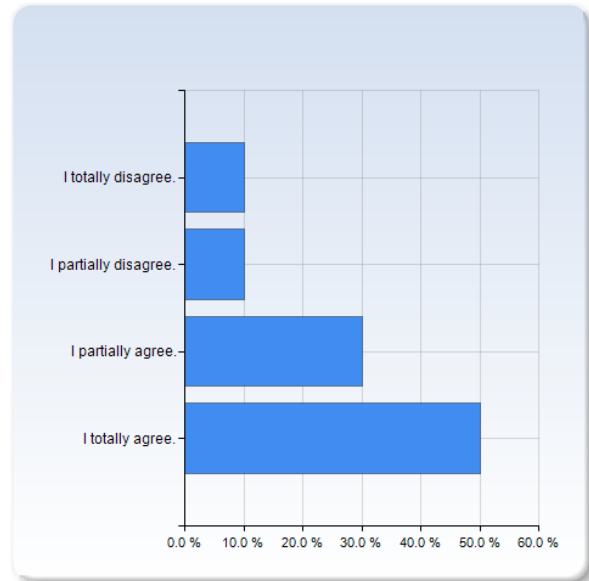
	Mean	Standard Deviation
The planning of the lectures has been satisfactory.	3.2	1.0

The number of lectures has been satisfactory.

The number of lectures has been satisfactory.	Number of Responses
I totally disagree.	1 (10.0%)
I partially disagree.	1 (10.0%)
I partially agree.	3 (30.0%)
I totally agree.	5 (50.0%)
Total	10 (100.0%)

	Mean	Standard Deviation
The number of lectures has been satisfactory.	3.2	1.0

## 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.	0 (0.0%)
I partially disagree.	2 (20.0%)
I partially agree.	2 (20.0%)
I totally agree.	6 (60.0%)
Total	10 (100.0%)
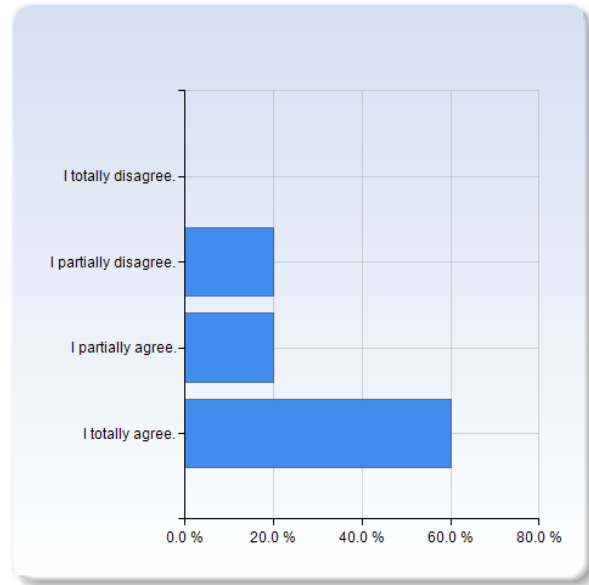
	Mean	Standard Deviation
The pace of the lectures matched the content of the course.	3.4	0.8

The lecturer presented the material in a pedagogical manner.

| The lecturer presented the material in a pedagogical manner.	Number of Responses
I totally disagree.	1 (11.1%)
I partially disagree.	0 (0.0%)
I partially agree.	3 (33.3%)
I totally agree.	5 (55.6%)
Total	9 (100.0%)
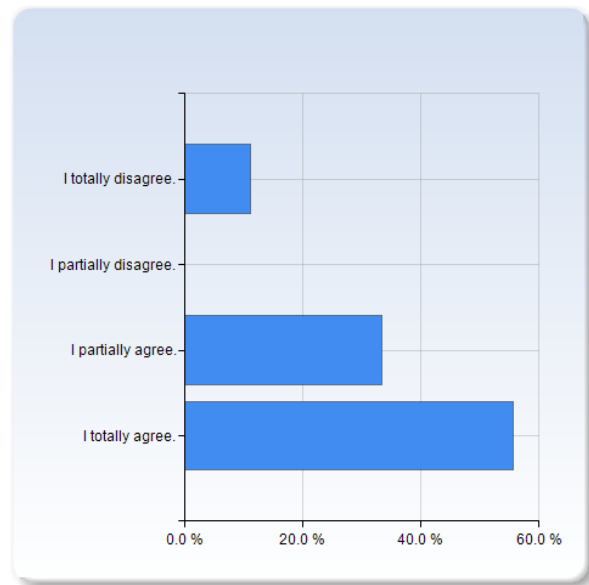
	Mean	Standard Deviation
The lecturer presented the material in a pedagogical manner.	3.3	1.0

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

To which extent did you attend the lectures? (percentage)	Number of Responses
6 - 15	2 (20.0%)
16 - 25	0 (0.0%)
26 - 35	0 (0.0%)
36 - 45	0 (0.0%)
46 - 55	0 (0.0%)
56 - 65	0 (0.0%)
66 - 75	1 (10.0%)
76 - 85	1 (10.0%)
86 - 95	1 (10.0%)
96 - 105	5 (50.0%)
Total	10 (100.0%)
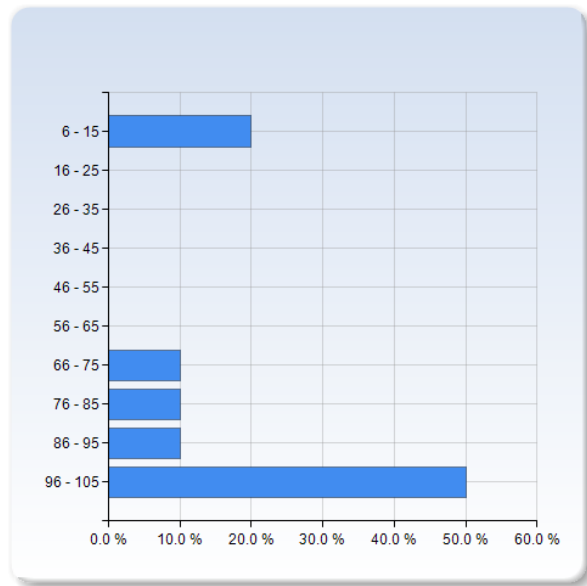
	Mean	Standard Deviation
To which extent did you attend the lectures? (percentage)	76.5	36.5

Other comments regarding the lectures:

| Other comments regarding the lectures: |
|---|
| Read before. Far too few lectures and not enough ntime to discuss the contents of the course. |
| I feel like Arne is actually very good at explaining and talking about math. The style of the lectures just didn't fit me. |
| See previous comments |
| Online lectures have been a bit hard to follow mentally, sometimes |

Seminars

The number of seminars has been satisfactory.

The number of seminars has been satisfactory.	Number of Responses
I totally disagree.	2 (25.0%)
I partially disagree.	1 (12.5%)
I partially agree.	2 (25.0%)
I totally agree.	3 (37.5%)
Total	8 (100.0%)
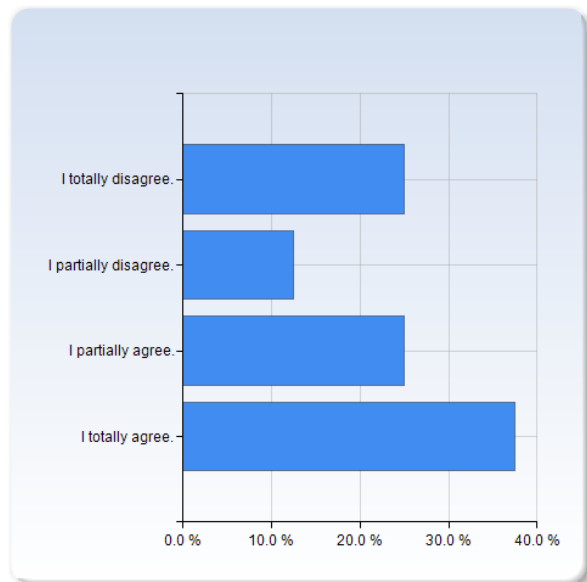
	Mean	Standard Deviation
The number of seminars has been satisfactory.	2.8	1.3

## 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.	1 (14.3%)
I partially disagree.	3 (42.9%)
I partially agree.	1 (14.3%)
I totally agree.	2 (28.6%)
Total	7 (100.0%)
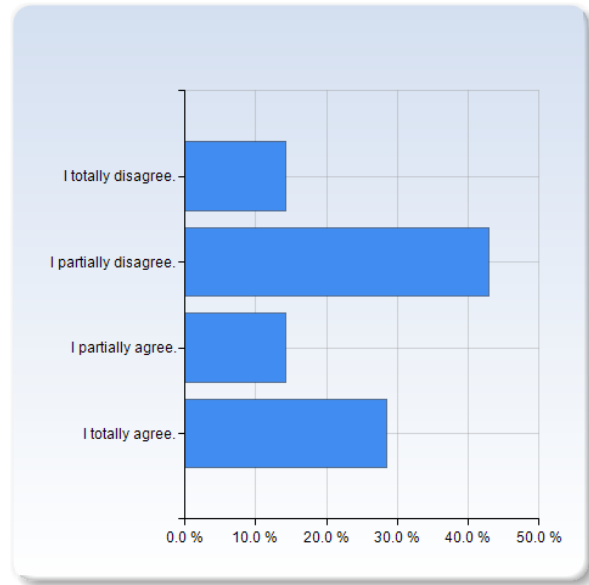
	Mean	Standard Deviation
The teaching form and planning of the seminars has been satisfactory.	2.6	1.1

## 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.	2 (33.3%)
I partially disagree.	0 (0.0%)
I partially agree.	2 (33.3%)
I totally agree.	2 (33.3%)
Total	6 (100.0%)
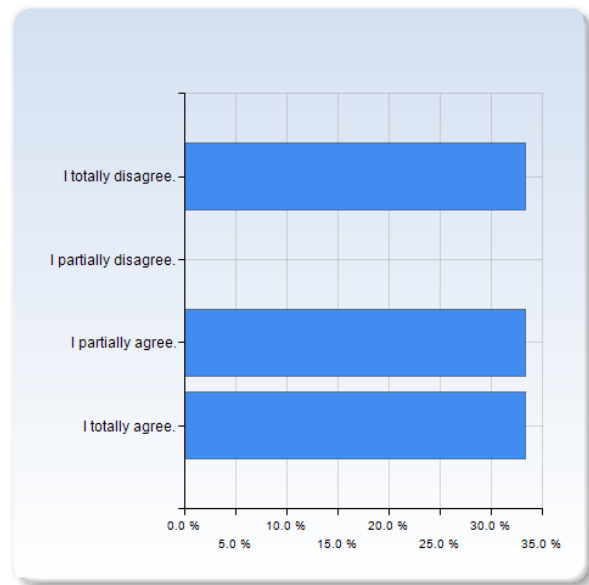
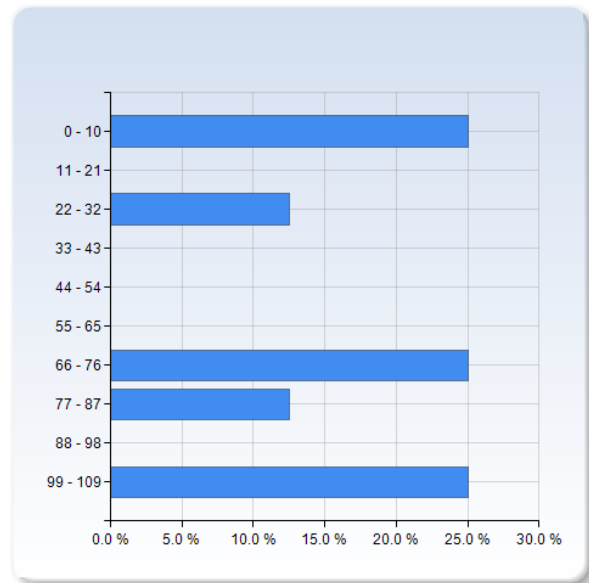|	Mean	Standard Deviation
The seminars contributed to increase my understanding of the subject.	2.7	1.4

I have actively participated in the seminars.

I have actively participated in the seminars.	Number of Responses
I totally disagree.	1 (14.3%)
I partially disagree.	2 (28.6%)
I partially agree.	3 (42.9%)
I totally agree.	1 (14.3%)
Total	7 (100.0%)
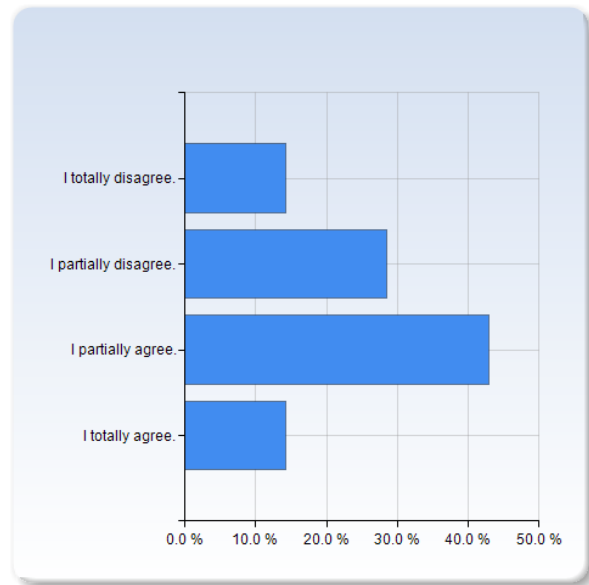
	Mean	Standard Deviation
I have actively participated in the seminars.	2.6	1.0

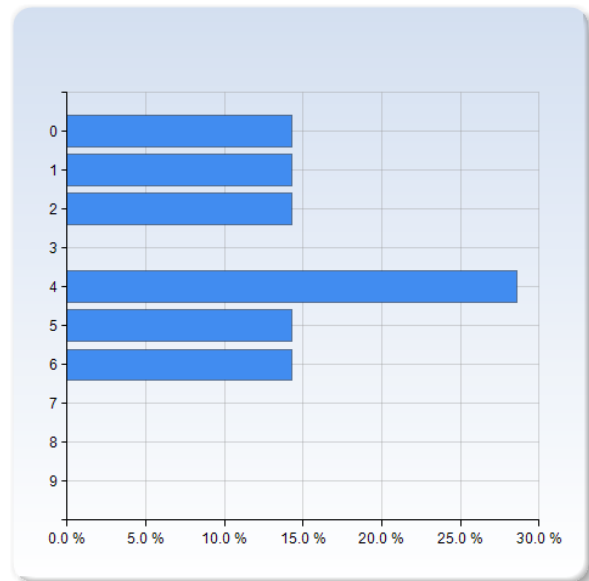## To which extent did you attend the seminars? (percentage)

To which extent did you attend the seminars? (percentage)	Number of Responses
0 - 10	2 (25.0%)
11 - 21	0 (0.0%)
22 - 32	1 (12.5%)
33 - 43	0 (0.0%)
44 - 54	0 (0.0%)
55 - 65	0 (0.0%)
66 - 76	2 (25.0%)
77 - 87	1 (12.5%)
88 - 98	0 (0.0%)
99 - 109	2 (25.0%)
Total	8 (100.0%)

	Mean	Standard Deviation
To which extent did you attend the seminars? (percentage)	55.6	41.5

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 (14.3%)
1	1 (14.3%)
2	1 (14.3%)
3	0 (0.0%)
4	2 (28.6%)
5	1 (14.3%)
6	1 (14.3%)
7	0 (0.0%)
8	0 (0.0%)
9	0 (0.0%)
Total	7 (100.0%)

	Mean	Standard Deviation
How many hours did you spend to prepare for the seminars?	3.1	2.2

Other comments regarding the seminars.

| Other comments regarding the seminars. |
|---|
| There were no seminars? |
| I thought they were the best part of the course after the book. With seminars I mean the last half hour of the lectures where we went through some problems. |
| Good thought having them in the end of each lecture, but sadly there wasn't enough time personally |
| The pace was a bit slow. |

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 (25.0%)
I partially agree.	2 (25.0%)
I totally agree.	4 (50.0%)
Total	8 (100.0%)
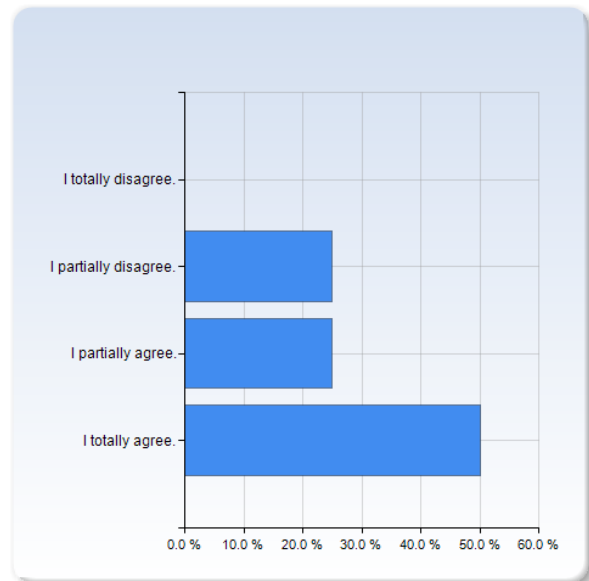
	Mean	Standard Deviation
The degree of difficulty of the assignments matched the content of the course.	3.3	0.9

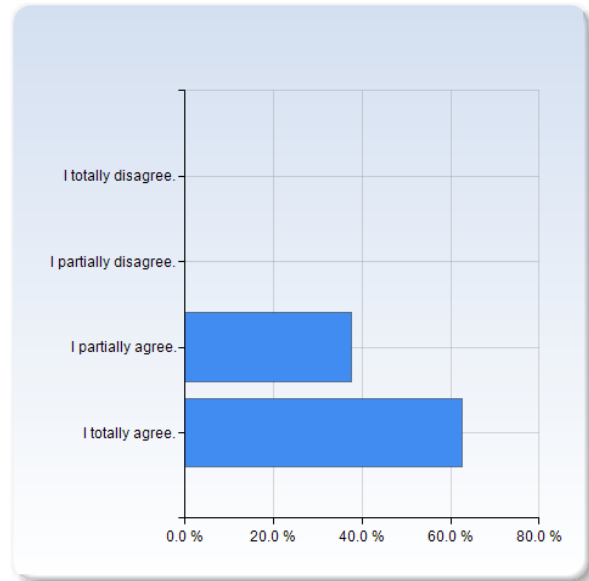### The assignments contributed to increase my understanding of the subject.

The assignments contributed to increase my understanding of the subject.	Number of Responses
I totally disagree.	1 (12.5%)
I partially disagree.	0 (0.0%)
I partially agree.	2 (25.0%)
I totally agree.	5 (62.5%)
Total	8 (100.0%)
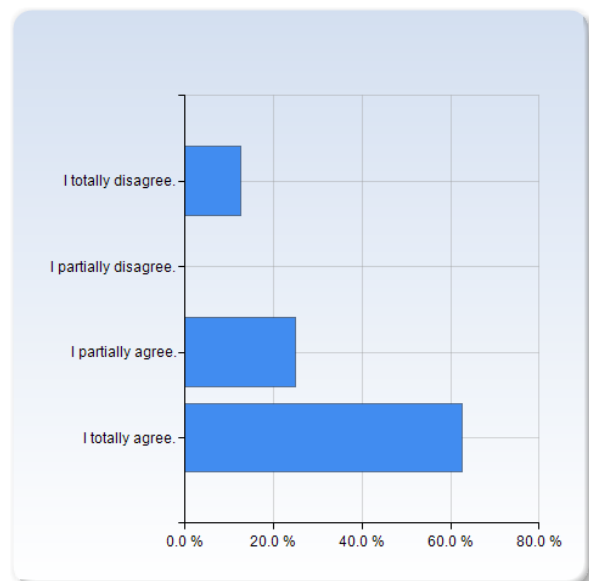
	Mean	Standard Deviation
The assignments contributed to increase my understanding of the subject.	3.4	1.1

The assignments contributed to increase my ability to communicate my mathematical knowledge.
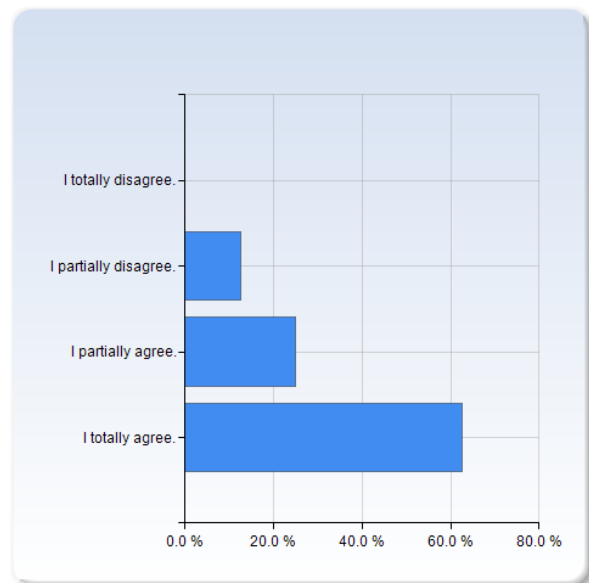
The assignments contributed to increase my ability to communicate my mathematical knowledge.	Number of Responses
I totally disagree.	0 (0.0%)
I partially disagree.	0 (0.0%)
I partially agree.	3 (37.5%)
I totally agree.	5 (62.5%)
Total	8 (100.0%)

	Mean	Standard Deviation
The assignments contributed to increase my ability to communicate my mathematical knowledge.	3.6	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.	1 (12.5%)
I partially agree.	2 (25.0%)
I totally agree.	5 (62.5%)
Total	8 (100.0%)

	Mean	Standard Deviation
The planning and implementation of the assignments has been satisfactory.	3.5	0.8

Other comments about the assignments:

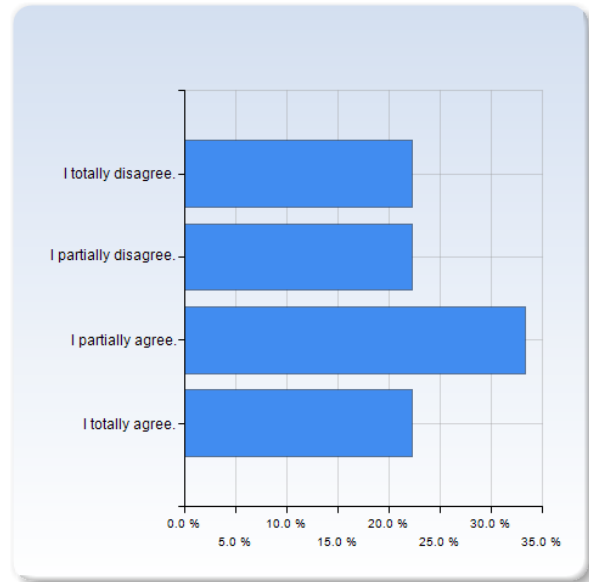| Other comments about the assignments: |
| --- |
| I felt they reasonably prepared me för the exam |
| The assignment was a bit useless. |

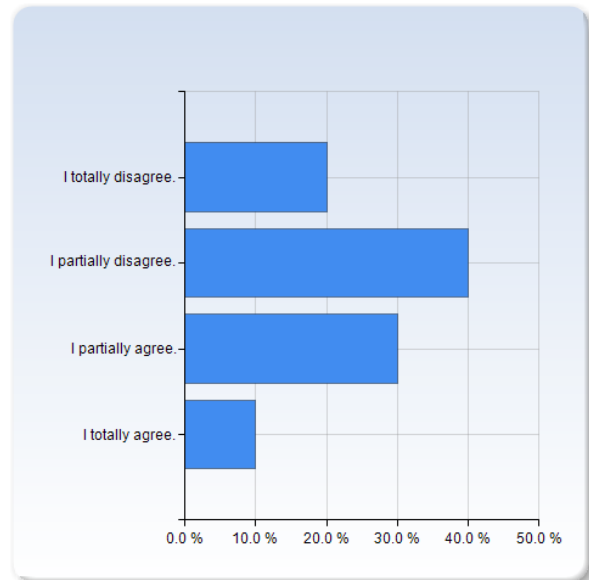# Examination

The examination form has been satisfactory.

The examination form has been satisfactory.	Number of Responses
I totally disagree.	2 (22.2%)
I partially disagree.	2 (22.2%)
I partially agree.	3 (33.3%)
I totally agree.	2 (22.2%)
Total	9 (100.0%)

	Mean	Standard Deviation
The examination form has been satisfactory.	2.6	1.1

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.	2 (20.0%)
I partially disagree.	4 (40.0%)
I partially agree.	3 (30.0%)
I totally agree.	1 (10.0%)
Total	10 (100.0%)

	Mean	Standard Deviation
The degree of difficulty of the examination matched the content of the course.	2.3	0.9

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.	1 (10.0%)
I partially disagree.	2 (20.0%)
I partially agree.	3 (30.0%)
I totally agree.	4 (40.0%)
Total	10 (100.0%)
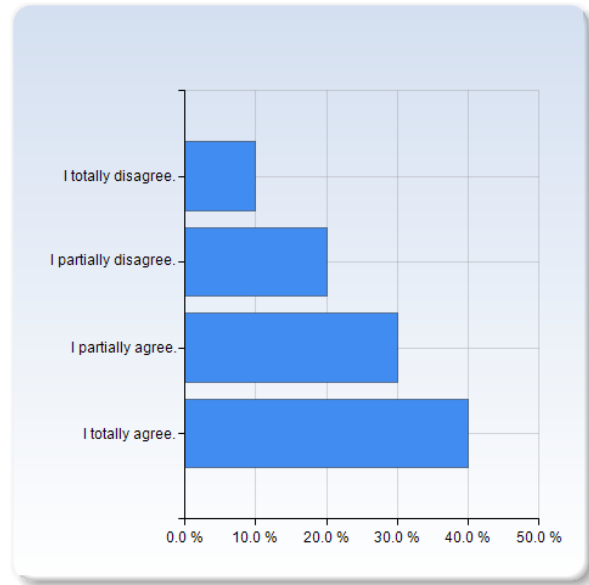
	Mean	Standard Deviation
The exam questions reflected the content of the course and matched the learning objectives.	3.0	1.1

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.	3 (37.5%)
I partially disagree.	1 (12.5%)
I partially agree.	3 (37.5%)
I totally agree.	1 (12.5%)
Total	8 (100.0%)
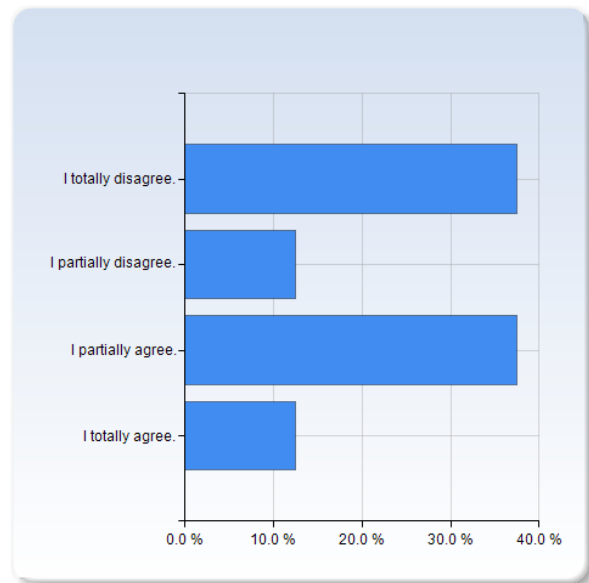
	Mean	Standard Deviation
The grade that I received on the exam reflects my work during the course.	2.3	1.2

Other comments regarding the examination:

Other comments regarding the examination:

The written ex felt very out of the blue. Grading of it felt very unfair. It was completely impossible to prepare for the exam. I passed thankfully, but in my opinion that was just sheer luck. Other student who have the same knowledge as me didn't pass, so the whole thing just seemed weird.

The problems one the exam were orders of magnitude more difficult than the hardest problems in the course book. I think some much more difficult problems should have been prescribed during the course.

Overall a reasonable, but difficult, exam. Sadly a slightly "irrelevant" last question.

It was a too difficult exam compared to the problems we solved during the course.

The camera surveilance was very distracting. I've had one prior exam in this format and did not like it at all as it was very hard to concentrate. It felt really hindering to my performance.

If I have to do another exam with this format I'll seriously consider postponing it or asking for possibility to do a normal physical exam.

As the entire grade is essentially based on one exam I feel that this camera serveilance solution was bad. I'd rather have a much more difficult home exam and a difficult oral exam than to ever have to repeat this again.

A take-home exam with more difficult questions would have been preferred (I do not like having to set up cameras and Zoom), otherwise the exam was good.

As mentioned by other students, the fact that the exams were online and Zoom-monitored added a lot of stress and pressure to the students, not knowing if there would be network disruptions or other problems which might lead to a Fail.

What is your opinion about this course evaluation form?

What is your opinion about this course evaluation form?

A bit odd to be honest.

Decent. Seems a bit like someone just grabbed a template and didn't change any words.

Good except for the first Lage that was unedited

I prefer written exams and not oral exams.

Good

You need an option in the middle!