LUND UNIVERSITY
Faculty of Science

Course Analysis for NUMN28 Numerical simulations of flow problems, term VT2/22

Course Information

Lecturer: Philipp Birken
Teaching assistants: -
Number of students: 3
3 newly registered and 0 re-registered.
3 students answered the course evaluation.

Examination

Project: 1 students passed.
Oral examination: 1 students passed.

Final grades:
In all, 1 students, including 0 re-registered students, have got their final grade.
0 passed with distinction.
1 passed.

Course Evaluation

Summary of student's answers:
In addition to three students from the master program, there were 3 PhD students in the course. Of these six, three filled out the questionaire, but I did not include a question about their background.
Of the three who answered, it seems that one student was dissatisfied with the course and the learning outcome, whereas the other two were satisfied. One student invested only 8 hour per week into the course, which is not enough for a satisfactory outcome.
One student gave the following statement about the course:
"The fact that about half way through the topic completely shifted was a bit strange as it felt more like two courses than one, and it meant that the second half felt a lot more rushed. Furthermore the second lecture about the Navier Stokes equation felt a bit out of place as we covered this complex case and then throughout the rest of the course we only consider simple cases and never really tied back to the complex case. Also the assignments on dune did not really introduce how to use dune just telling us to use it."

Teachers' comments:
The course had
- 2 Lectures per week
- 5 Weekly assignments and one final project

The assignments were corrected to give the students feedback. Student handins of the assignments was lackluster. Talking with the students, it became clear that most did not invest the necessary amount of time in the course. This was due to various reasons, such as Lundakarneval, a too high course load and private life.
The final project was mandatory, and then there was an oral exam based on this.

Changes from the previous course realisation:
The course was given for the first time in this form. It was created from two previous courses

Suggestions for the next course realisation:
I agree with the student statement cited above. In the next realization, I will cut a bit of content from the first half and extend the second half. I will also adjust the assignments so that the students work with more complex flow problems. We might add a separate lecture on DUNE.
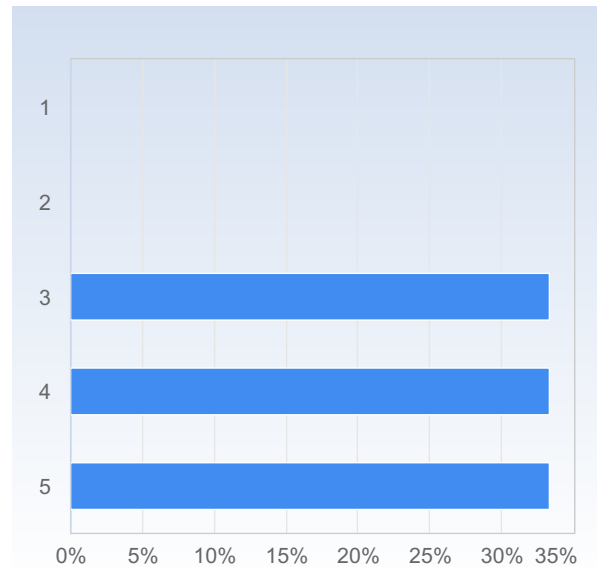
Numerical Simulation of Flow Problems 2022

Answer Count: 3

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	1 (33,3%)
4	1 (33,3%)
5	1 (33,3%)
Total	3 (100,0%)

	Mean	Standard Deviation
2. My prior knowledge has been sufficient to assimilate the contents of this course.	4,0	1,0

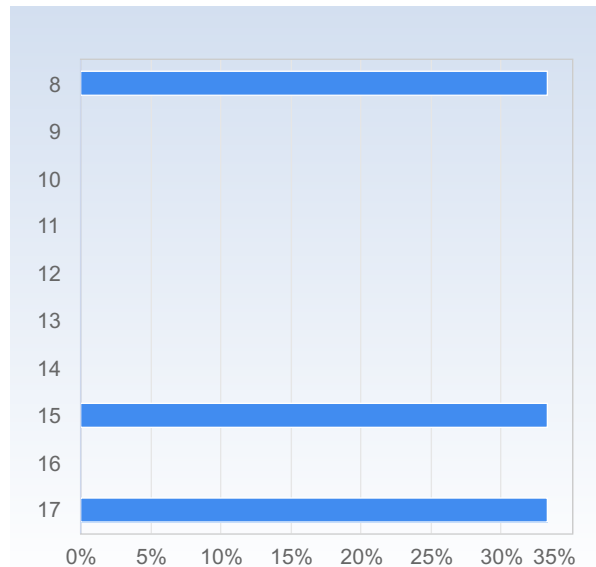## 3. I have participated actively in the course.

3. I have participated actively in the course.	Number of responses
1	0 (0,0%)
2	0 (0,0%)
3	0 (0,0%)
4	1 (33,3%)
5	2 (66,7%)
Total	3 (100,0%)
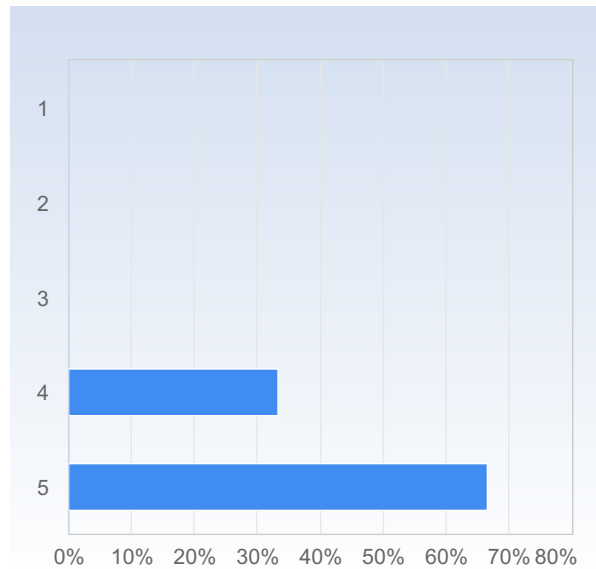
	Mean	Standard Deviation
3. I have participated actively in the course.	4,7	0,6

# 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
8	1 (33,3%)
9	0 (0,0%)
10	0 (0,0%)
11	0 (0,0%)
12	0 (0,0%)
13	0 (0,0%)
14	0 (0,0%)
15	1 (33,3%)
16	0 (0,0%)
17	1 (33,3%)
Total	3 (100,0%)

	Mean	Standard Deviation
Average number of hours spent in total on the course per week (including scheduled activities):	13,3	4,7

The course in general
On the scale 1-5 select the option that best matches your opinion:1= disagree completely → 3= partly agree → 5= agree completely

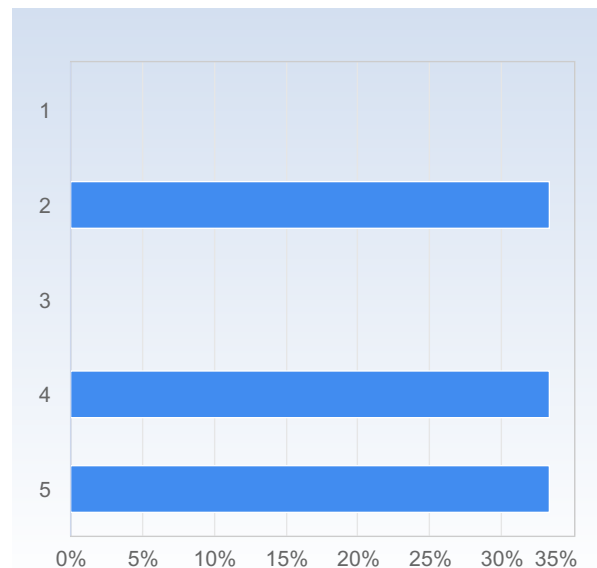## The way the course was taught and organised suited me.

The way the course was taught and organised suited me.	Number of responses
1	0 (0,0%)
2	0 (0,0%)
3	1 (33,3%)
4	2 (66,7%)
5	0 (0,0%)
Total	3 (100,0%)
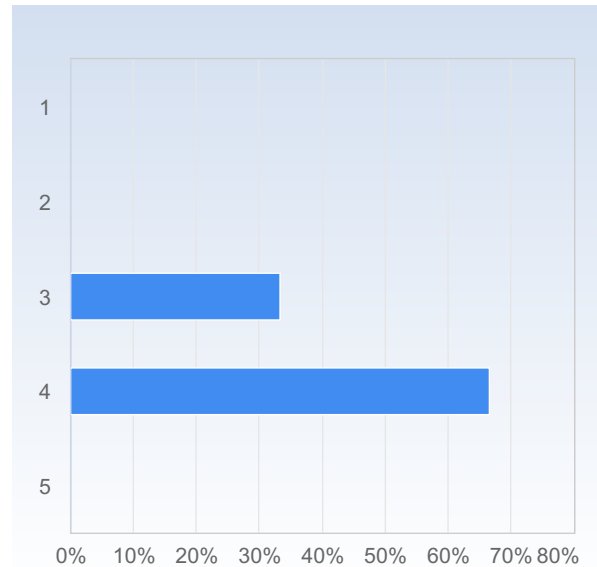
	Mean	Standard Deviation
The way the course was taught and organised suited me.	3,7	0,6

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

The number of teacher lead activities (lectures, seminars etc.) has been satisfactory.	Number of responses
1	0 (0,0%)
2	1 (33,3%)
3	0 (0,0%)
4	1 (33,3%)
5	1 (33,3%)
Total	3 (100,0%)

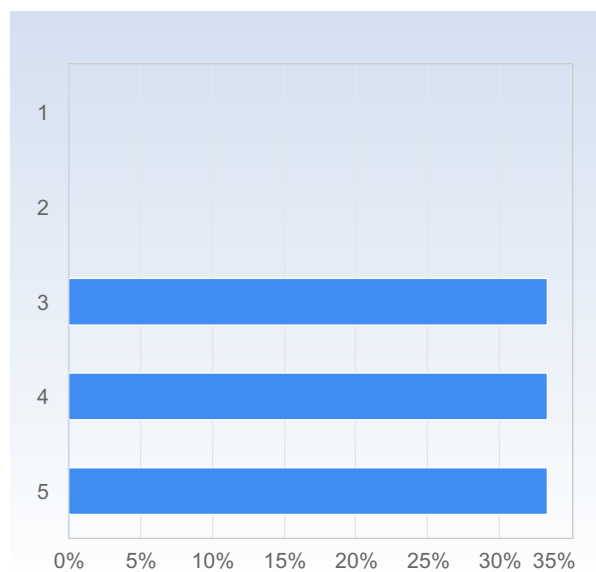|	Mean	Standard Deviation
The number of teacher lead activities (lectures, seminars etc.) has been satisfactory.	3,7	1,5

The lectures were valuable for my learning.

The lectures were valuable for my learning.	Number of responses
1	0 (0,0%)
2	0 (0,0%)
3	0 (0,0%)
4	2 (66,7%)
5	1 (33,3%)
Total	3 (100,0%)
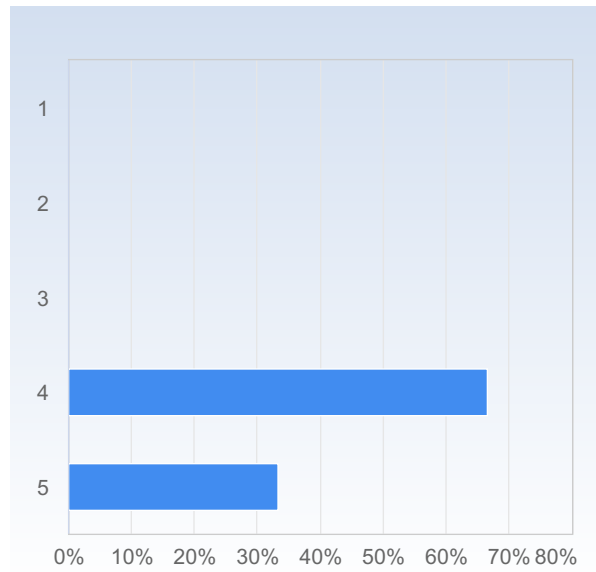
	Mean	Standard Deviation
The lectures were valuable for my learning.	4,3	0,6

The assignments were valuable for my learning.

The assignments were valuable for my learning.	Number of responses
1	0 (0,0%)
2	0 (0,0%)
3	1 (33,3%)
4	1 (33,3%)
5	1 (33,3%)
Total	3 (100,0%)

	Mean	Standard Deviation
The assignments were valuable for my learning.	4,0	1,0

Studying on my own was valuable for my learning.

Studying on my own was valuable for my learning.	Number of responses
1	0 (0,0%)
2	1 (33,3%)
3	0 (0,0%)
4	0 (0,0%)
5	2 (66,7%)
Total	3 (100,0%)
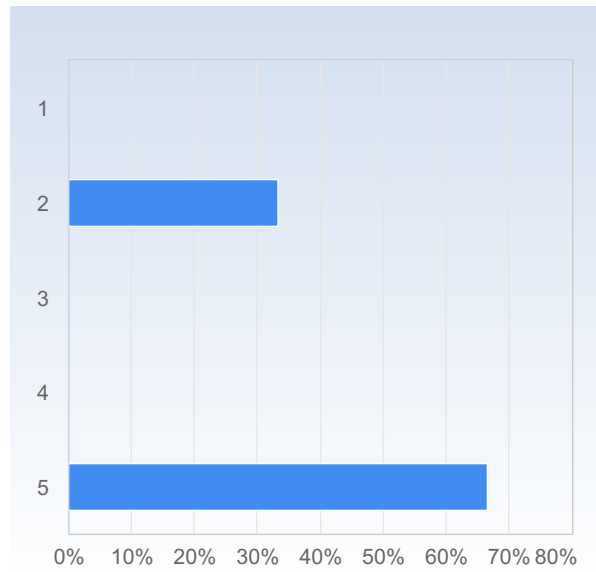
	Mean	Standard Deviation
Studying on my own was valuable for my learning.	4,0	1,7

The course literature/material was a valuable learning resource.

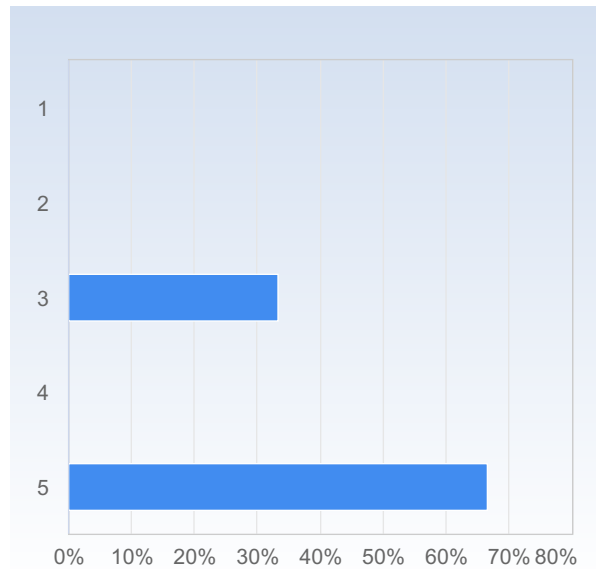| The course literature/material was a valuable learning resource.	Number of responses
1	1 (33,3%)
2	0 (0,0%)
3	0 (0,0%)
4	0 (0,0%)
5	2 (66,7%)
Total	3 (100,0%)
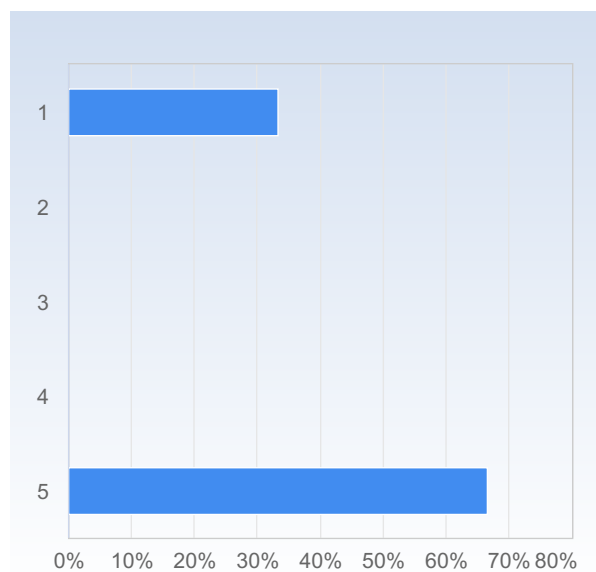
	Mean	Standard Deviation
The course literature/material was a valuable learning resource.	3,7	2,3

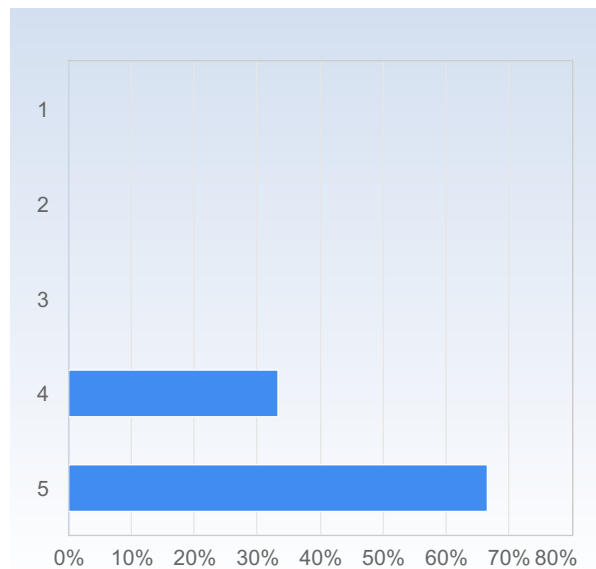## The information I received before the course start was satisfactory.

The information I received before the course start was satisfactory.	Number of responses
1	0 (0,0%)
2	0 (0,0%)
3	1 (33,3%)
4	0 (0,0%)
5	2 (66,7%)
Total	3 (100,0%)

	Mean	Standard Deviation
The information I received before the course start was satisfactory.	4,3	1,2

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

The communication with the teaching staff during the course was good.	Number of responses
1	0 (0,0%)
2	0 (0,0%)
3	0 (0,0%)
4	1 (33,3%)
5	2 (66,7%)
Total	3 (100,0%)

	Mean	Standard Deviation
The communication with the teaching staff during the course was good.	4,7	0,6

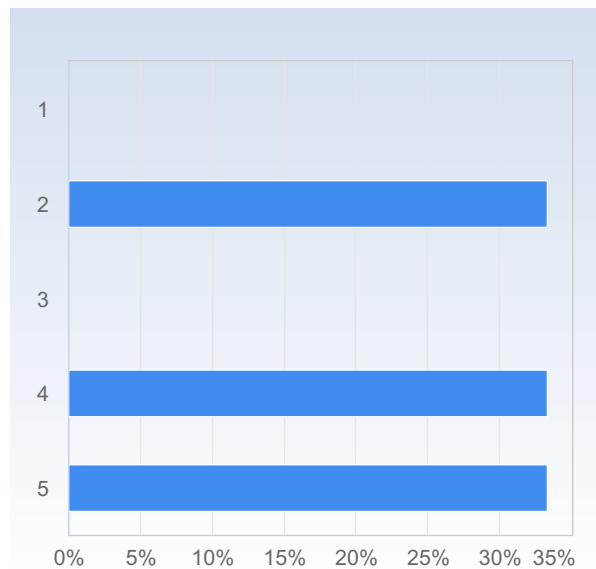## It was clear throughout the course what was expected of me.

It was clear throughout the course what was expected of me.	Number of responses
1	0 (0,0%)
2	0 (0,0%)
3	2 (66,7%)
4	0 (0,0%)
5	1 (33,3%)
Total	3 (100,0%)
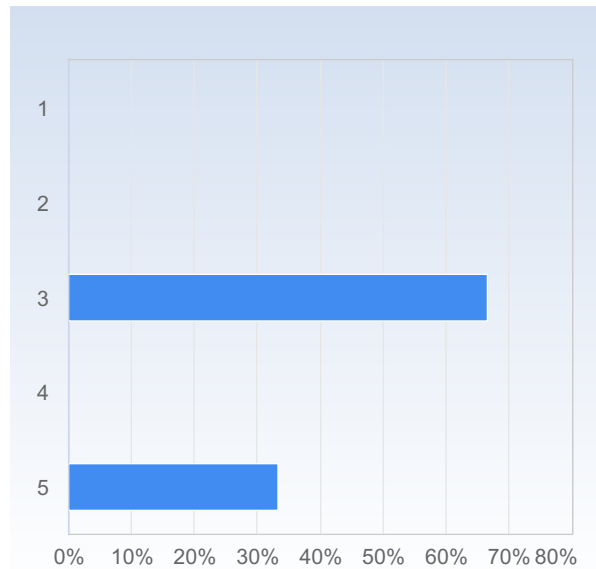
	Mean	Standard Deviation
It was clear throughout the course what was expected of me.	3,7	1,2

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

I have received valuable feedback from my teacher/teachers during the course.	Number of responses
1	0 (0,0%)
2	1 (33,3%)
3	0 (0,0%)
4	1 (33,3%)
5	1 (33,3%)
Total	3 (100,0%)

	Mean	Standard Deviation
I have received valuable feedback from my teacher/teachers during the course.	3,7	1,5

The course had a reasonable workload.

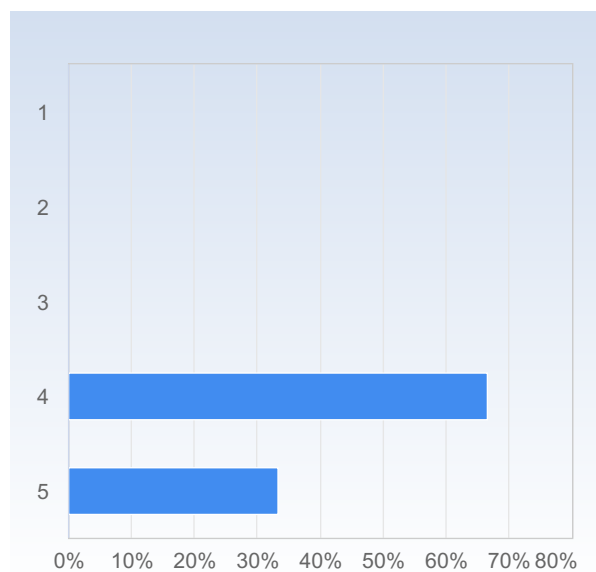| The course had a reasonable workload.	Number of responses
1	0 (0,0%)
2	1 (33,3%)
3	1 (33,3%)
4	1 (33,3%)
5	0 (0,0%)
Total	3 (100,0%)
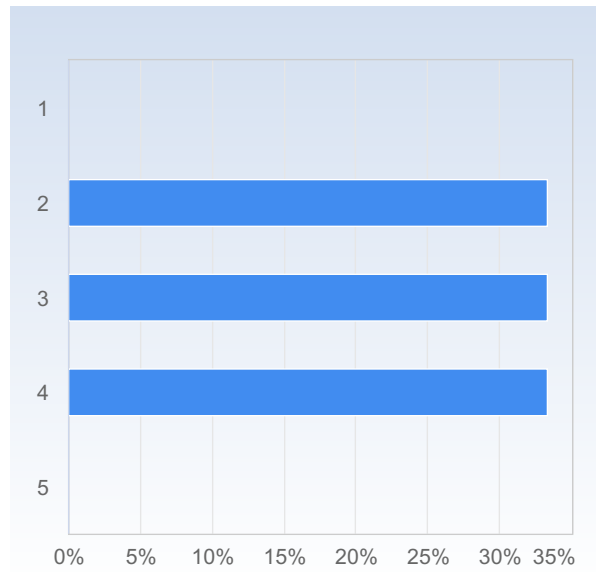
	Mean	Standard Deviation
The course had a reasonable workload.	3,0	1,0

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	0 (0,0%)
4	2 (66,7%)
5	1 (33,3%)
Total	3 (100,0%)

	Mean	Standard Deviation
The examination matched the contents and level of the course.	4,3	0,6

Overall, I am satisfied with the course.

Overall, I am satisfied with the course.	Number of responses
1	0 (0,0%)
2	0 (0,0%)
3	0 (0,0%)
4	2 (66,7%)
5	1 (33,3%)
Total	3 (100,0%)
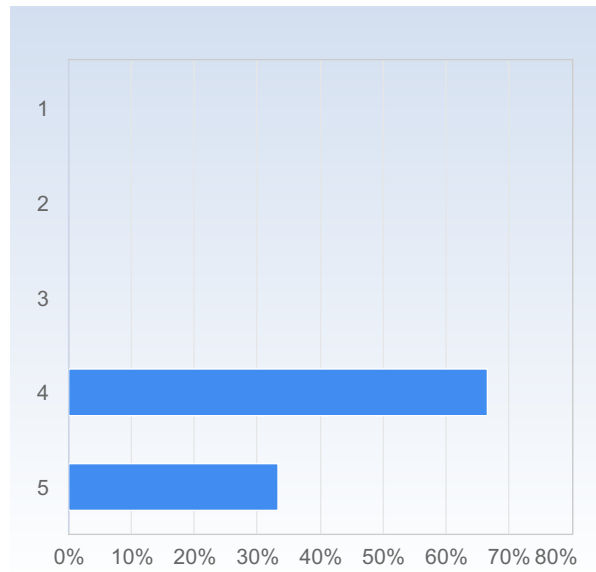
	Mean	Standard Deviation
Overall, I am satisfied with the course.	4,3	0,6

The workload was evenly distributed throughout the course.

The workload was evenly distributed throughout the course.	Number of responses
1	0 (0,0%)
2	1 (33,3%)
3	0 (0,0%)
4	1 (33,3%)
5	1 (33,3%)
Total	3 (100,0%)
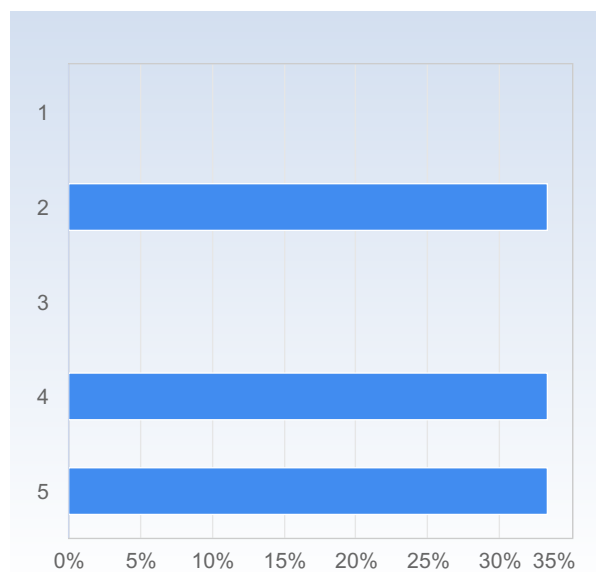
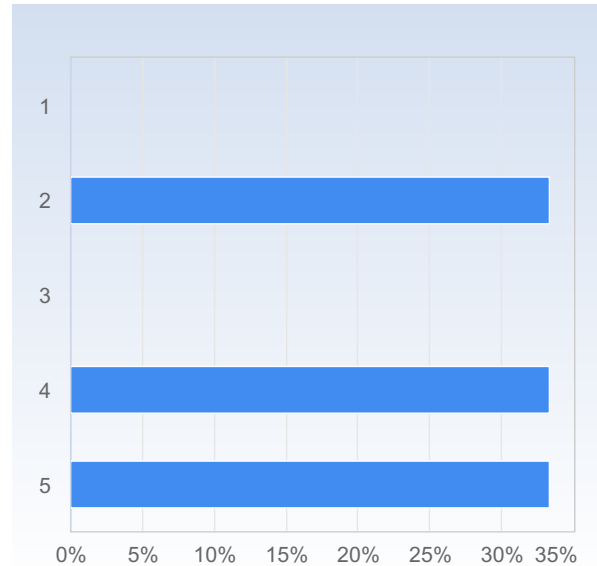|	Mean	Standard Deviation
The workload was evenly distributed throughout the course.	3,7	1,5

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

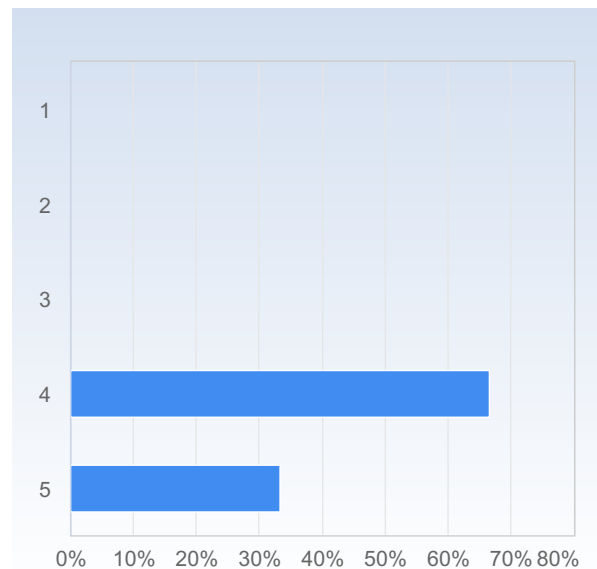### The course has increased my ability to read a mathematical text.

The course has increased my ability to read a mathematical text.	Number of responses
1	0 (0,0%)
2	1 (33,3%)
3	0 (0,0%)
4	1 (33,3%)
5	1 (33,3%)
Total	3 (100,0%)

	Mean	Standard Deviation
The course has increased my ability to read a mathematical text.	3,7	1,5

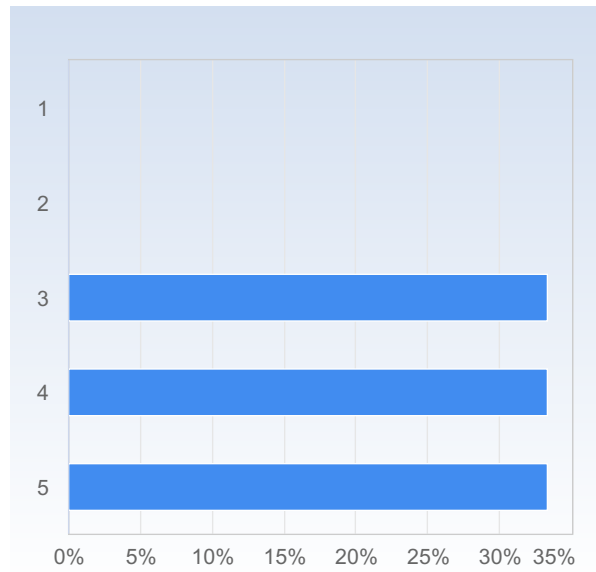### The course has increased my ability to communicate the subject in writing.

The course has increased my ability to communicate the subject in writing.	Number of responses
1	0 (0,0%)
2	0 (0,0%)
3	0 (0,0%)
4	2 (66,7%)
5	1 (33,3%)
Total	3 (100,0%)

	Mean	Standard Deviation
The course has increased my ability to communicate the subject in writing.	4,3	0,6

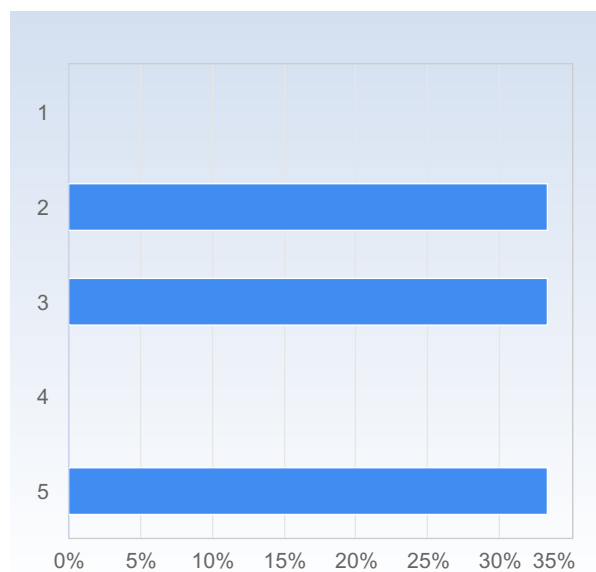# The course has increased my ability to communicate the subject orally.

The course has increased my ability to communicate the subject orally.	Number of responses
1	0 (0,0%)
2	0 (0,0%)
3	1 (33,3%)
4	1 (33,3%)
5	1 (33,3%)
Total	3 (100,0%)

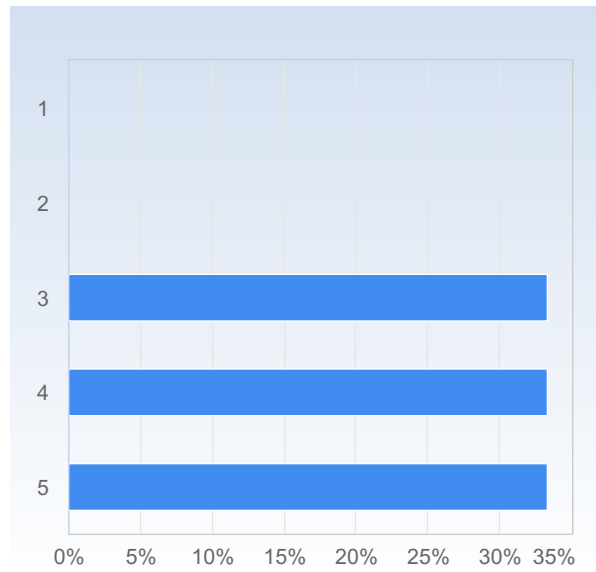|	Mean	Standard Deviation
The course has increased my ability to communicate the subject orally.	4,0	1,0

The course has increased my ability to collaborate.

The course has increased my ability to collaborate.	Number of responses
1	0 (0,0%)
2	1 (33,3%)
3	1 (33,3%)
4	0 (0,0%)
5	1 (33,3%)
Total	3 (100,0%)

	Mean	Standard Deviation
The course has increased my ability to collaborate.	3,3	1,5

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

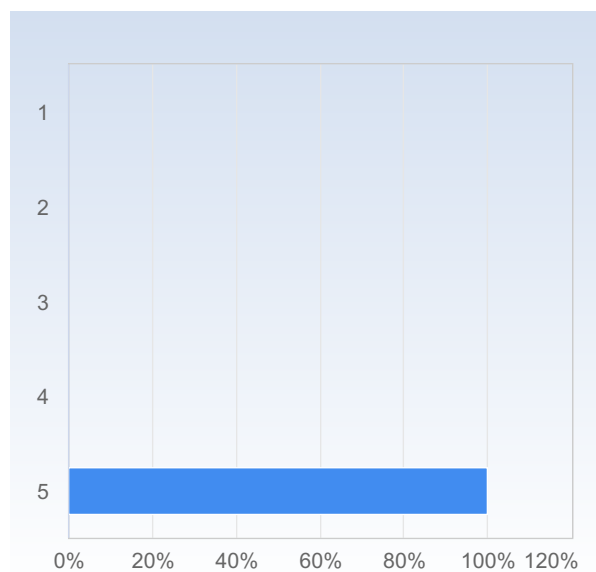| The course has increased my ability to search and process information.	Number of responses
1	0 (0,0%)
2	0 (0,0%)
3	1 (33,3%)
4	1 (33,3%)
5	1 (33,3%)
Total	3 (100,0%)

	Mean	Standard Deviation
The course has increased my ability to search and process information.	4,0	1,0

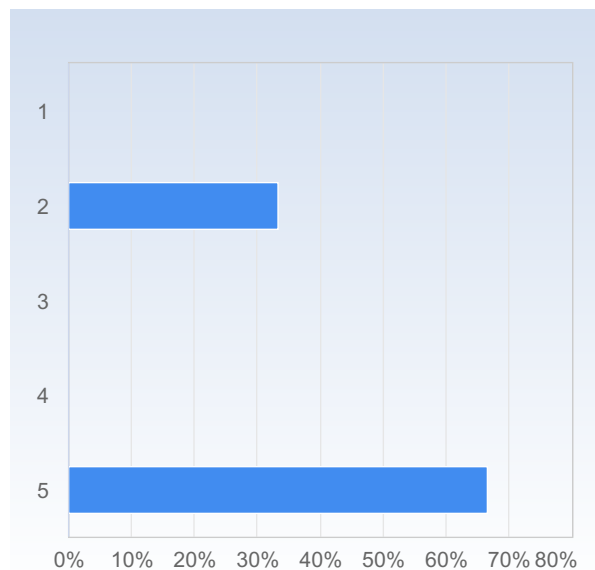## The course has increased my ability to analyze and solve problems.

The course has increased my ability to analyze and solve problems.	Number of responses
1	0 (0,0%)
2	0 (0,0%)
3	0 (0,0%)
4	0 (0,0%)
5	3 (100,0%)
Total	3 (100,0%)

	Mean	Standard Deviation
The course has increased my ability to analyze and solve problems.	5,0	0,0

As a result of this course, I feel confident about tackling unfamiliar problems.

As a result of this course, I feel confident about tackling unfamiliar problems.	Number of responses
1	0 (0,0%)
2	1 (33,3%)
3	0 (0,0%)
4	0 (0,0%)
5	2 (66,7%)
Total	3 (100,0%)

	Mean	Standard Deviation
As a result of this course, I feel confident about tackling unfamiliar problems.	4,0	1,7

What did you appreciate most with the course?

What did you appreciate most with the course?
The lectures were very clear and good to understand
I really liked the final project. It was nice to see and to write a fully functional implicit FVM method with my own non linear solver.

What do you think should be improved?

What do you think should be improved?
The corrections in the assignments were sometimes very brief
The fact that about half way through the topic completely shifted was a bit strange as it felt more like two courses than one, and it meant that the second half felt a lot more rushed. Furthermore the second lecture about the Navier Stokes equation felt a bit out of place as we covered this complex case and then throughout the rest of the course we only consider simple cases and never really tied back to the complex case. Also the assignments on dune did not really introduce how to use dune just telling us to use it.

Have you during this course experienced course literature, staff or teaching methods to be discriminatory in any way (gender, ethnicity, etc.)?

Have you during this course experienced course literature, staff or teaching methods to be discriminatory in any way (gender, ethnicity, etc.)?
in no way
Nope