Course Analysis - MJ2514 District heating and cooling 3 HP

Course analysis part 1

1.1 Course overview

Course name:	District heating and cooling
Course code:	MJ2514
Course instance code:	61062
School:	ITM SKOLAN
Department:	ETT TILLÄMP TERMODYN&KYLTEKN
Term:	VT25
Examiners:	Saman Nimali Gunasekara
Course coordinator:	Saman Nimali Gunasekara
Teachers:	Aditya Suswal, Johan Dalgren
Number of registered students:	1
Part of program:	
Examination modules:	PROA, SEMA
Intended learning outcomes:	After passing the course, the student should be able to:

- Describe, on a basic level, systems and components for district heating and cooling systems. Explain the difference between older and newer generations of district heating systems.

- Design and assess needs and performance for district heating and cooling systems

- Describe limitations and impediments and their consequences for these systems, and give an account of the possibilities and challenges that the district heating and the district cooling face in the future.

1.2 Reported examination modules and overall result of the course

1.2.1 PROA

1 students with reported result

A	B	C	D	E	FX	F
█	█	█	█	█	█	█

Teacher comment: A very satisfactory outcome, with overall quite good PROA outcomes with very good grades for many (in total: 48% As, 30% Bs, 18% Cs and 3% Ds, with no E, Fx or F). The grading was done considering the ILOs fulfillment along the specific tasks given in the assessment tasks.

1.2.2 SEMA

1 students with reported result

P	F
█	█

Teacher comment: Very good presentations by each and every group, followed by very good peer review and Q&A. Also the students were given feedback and suggestions which they were encouraged to apply in their final report (if they wished so), that was submitted a week after SEM session.

1.2.3 Course result

0 students with reported result

A	B	C	D	E	FX	F
█	█	█	█	█	█	█

1.3 Course evaluation results

Number of Respondents: 1

Answer Count: -

Answer Frequency: -%

The result can not be displayed, due to too few answers

9. What has worked well in the course?

Free-text responses are not available in this report.

10. What can be developed in the course?

Free-text responses are not available in this report.

2 Comments by the course coordinator

2.1 Changes made since previous course offering

- Course offering shifted to P3 (2025) from P4 (was in 2023 & 2024) per student requests in 2024
- Extended the time between the final seminar and the final report submission deadline (allowed 7 days versus 2-3 days during last years)
- PRO work description was introduced and discussed way earlier in the course, and some parts of it (concerning the same system) was also explained through some of the tutorials of Netsim
- More reminders and information were shared in Canvas about the course activities
- More reminders were shared during lectures and also via Canvas about the importance of: IRL attendance of the scheduled course activities (lectures, tutorials, PRO work sessions and Q&As), starting the PRO work early, each and every student having contributions in both modelling and report, etc., to complete the course and assessment tasks successfully
- Shortened the expected PRO work report length in-terms of word count, yet also communicated through course introduction and also later-on, that this is flexible (especially in the case when students wished to include more details)
- Added more details on the expectations on the PROA report and also presentation for SEMA (final seminar)

2.2 Compilation of course evaluation results (e.g. course evaluation board, course meeting & free text survey responses)

- a course council was instated at first lecture (course introduction), where 2 volunteers were assigned to it
- one of the course council students however de-registered from the course close to half-way through. The remaining council member agreed to still help the course and continued their work in the council, and contributed very well
- 2 meetings were held with the course council, one at course start and one at the course end. Also in-between informally the reflections were sought from them about the course and students' expectations
- a final student reflection report was shared by the course council, which can be provided upon request. (It overall has the best feedback so far (2023-2025) the course has received, and seems quite positive in many ways).
- An interesting suggestion from course council report is to offer a study visit within the course. This would indeed very nicely complement the course. However, the biggest challenge is to find a suitable time for both students and teachers, in this 3 ECTS course already squeezed into P3, which is very short. But still, we will consider this as a potential improvement, if the schedule allows.
(No free text answers received in either course evaluations sent out to different student groups)

2.3 Course coordinator's reflections on what has worked well and what can be developed in the course

What worked well:
- Giving the lectures in the first part of the course and inviting several industry speakers into some of those (which is always appreciated by students)
- Starting with the software tool Netsim (through tutorials) and then having scheduled sessions for the students to start on PRO (group) work, coupled with 4 Q&A sessions spread between scheduled PRO work sessions
- Teachers' availability on the first four PRO work sessions (pre-announced that they will be available), where the students got to ask all technical and administrative questions typical in PRO work start
- Having scheduled time slots for PRO work sessions, so that students have no (ideally) to minimal (in reality) clashes with other courses (particularly with track courses)
- Having help from a great course team, also with one teacher who is also from an industry present at several lectures, tutorials PRO sessions as well, and two other teachers in teaching the software tool (in 4 tutorials with some IRL, and 4 Q&A sessions) also from a company, all working pro-bono for the course
- Moving the course to P3
- Allowing more time between SEM and PRO report submission deadlines. That allowed them to apply the feedback they received during SEM session more into the reports, to apply improvements needed

What can be developed further:
- Communication with scheduling even more and ensure no clashes with track courses (despite many communications this year, unfortunately, somehow there have been some critical clashes)
- provide more details on what each Q&A session contained, along with each session recording
- always double check and maintain clarity in the PRO tasks description
- encourage students to ask questions if some critical need arises, even if they may occur outside the scheduled (PRO group work and Q&A) sessions

2.4 Summary of changes introduced for upcoming course offering (compile briefly)

- Ensure the course will have no clashes with the track courses and minimal clashes (if cannot avoid) with other elective courses, by closely working together with KTH Schema team
- provide more details on what each Q&A session contained, along with each session recording
- always double check and maintain clarity in the PRO work tasks description
- communicate more, that there is always flexibility in many of the tasks suggested in the course, and the students are welcome to communicate with the teaching team for their needs

Course Analysis - MJ2514 District heating and cooling 3 HP

Course analysis part 1

1.1 Course overview

Course name:	District heating and cooling
Course code:	MJ2514
Course instance code:	60320
School:	ITM SKOLAN
Department:	ETT TILLÄMP TERMODYN&KYLTEKN
Term:	VT25
Examiners:	Saman Nimali Gunasekara
Course coordinator:	Saman Nimali Gunasekara
Teachers:	Aditya Suswal, Johan Dalgren
Number of registered students:	36
Part of program:	TSUEM, TIETM, WESTLAF01, MADRID05, CITEH
Examination modules:	PROA, SEMA
Intended learning outcomes:	After passing the course, the student should be able to: - Describe, on a basic level, systems and components for district heating and cooling systems. Explain the difference between older and newer generations of district heating systems. - Design and assess needs and performance for district heating and cooling systems - Describe limitations and impediments and their consequences for these systems, and give an account of the possibilities and challenges that the district heating and the district cooling face in the future.

1.2 Reported examination modules and overall result of the course

1.2.1 PROA

33 students with reported result

A	B	C	D	E	FX	F
16 (48.48%)	10 (30.3%)	6 (18.18%)	1 (3.03%)	0 (0%)	0 (0%)	0 (0%)

1.2.2 SEMA

33 students with reported result

P	F
33 (100%)	0 (0%)

1.2.3 Course result

0 students with reported result

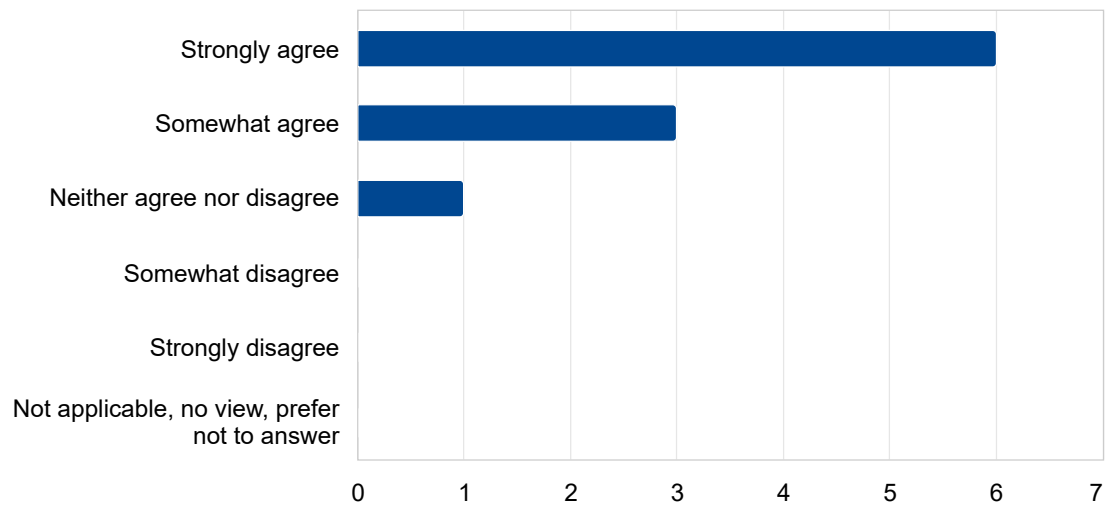| A	B	C	D	E	FX	F
16 (0%)	10 (0%)	6 (0%)	1 (0%)	0 (0%)	0 (0%)	0 (0%)

1.3 Course evaluation results

Number of Respondents: 36

Answer Count: 10

Answer Frequency: 27.78%%

1. The course information was well organised, with clear learning objectives and expectations.
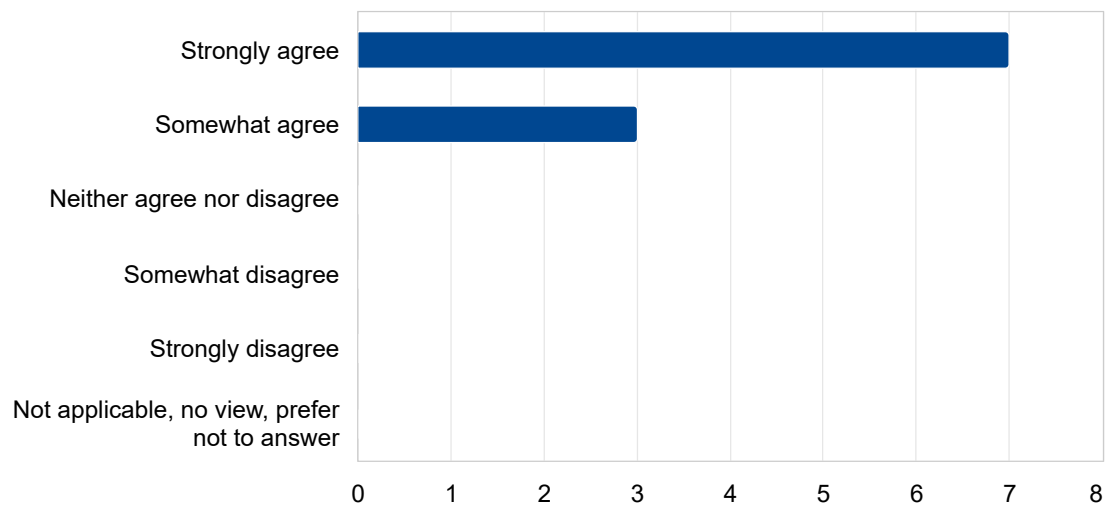

	Mean
The course information was well organised, with clear learning objectives and expectations.	4.5

The course information was well organised, with clear learning objectives and expectations.	**Number of responses**
Strongly agree	6 (60.0%)
Somewhat agree	3 (30.0%)
Neither agree nor disagree	1 (10.0%)
Somewhat disagree	0 (0.0%)
Strongly disagree	0 (0.0%)
Not applicable, no view, prefer not to answer	0 (0.0%)
Total	**10 (100.0%)**

2. The course design provided good support for my learning.
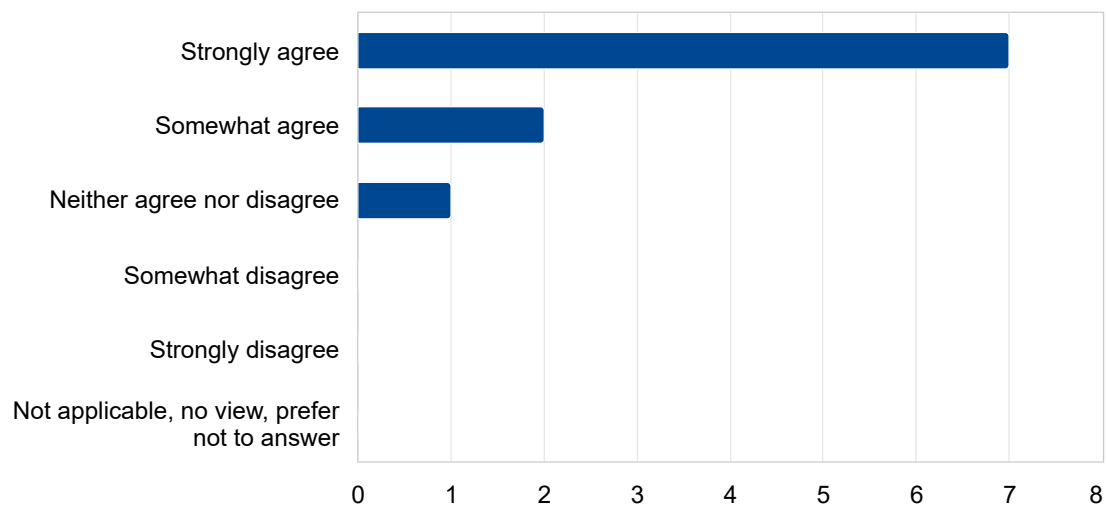

	Mean
The course design provided good support for my learning.	4.7

The course design provided good support for my learning.	Number of responses
Strongly agree	7 (70.0%)
Somewhat agree	3 (30.0%)
Neither agree nor disagree	0 (0.0%)
Somewhat disagree	0 (0.0%)
Strongly disagree	0 (0.0%)
Not applicable, no view, prefer not to answer	0 (0.0%)
Total	**10 (100.0%)**

3. The course gave opportunities for monitoring my own progress and understand what I needed to do in order to succeed with the course.
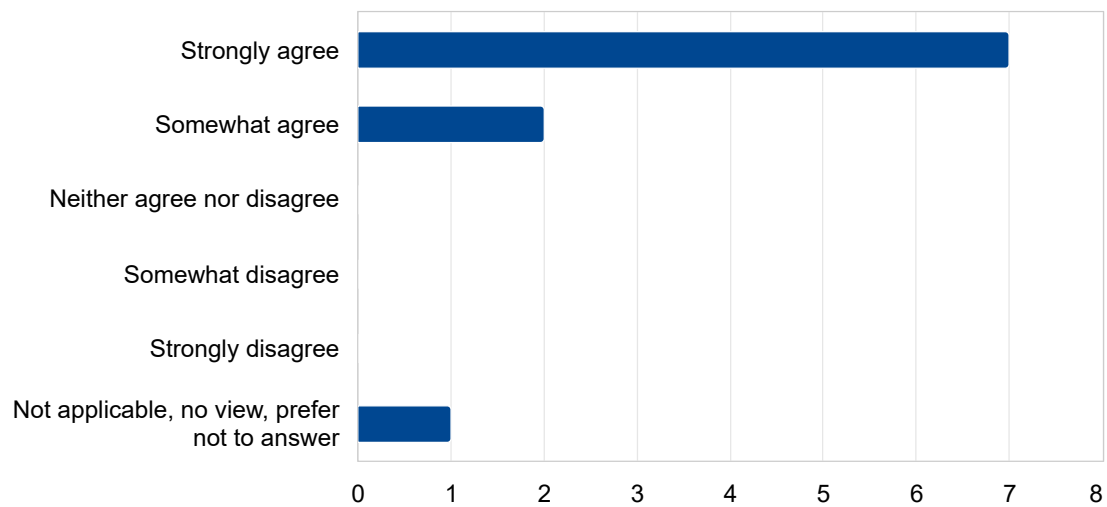

	Mean
The course gave opportunities for monitoring my own progress and understand what I needed to do in order to succeed with the course.	4.6

The course gave opportunities for monitoring my own progress and understand what I needed to do in order to succeed with the course.	**Number of responses**
Strongly agree	7 (70.0%)
Somewhat agree	2 (20.0%)
Neither agree nor disagree	1 (10.0%)
Somewhat disagree	0 (0.0%)
Strongly disagree	0 (0.0%)
Not applicable, no view, prefer not to answer	0 (0.0%)
Total	**10 (100.0%)**

4. I participated actively in the different parts of the course and studied continuously.
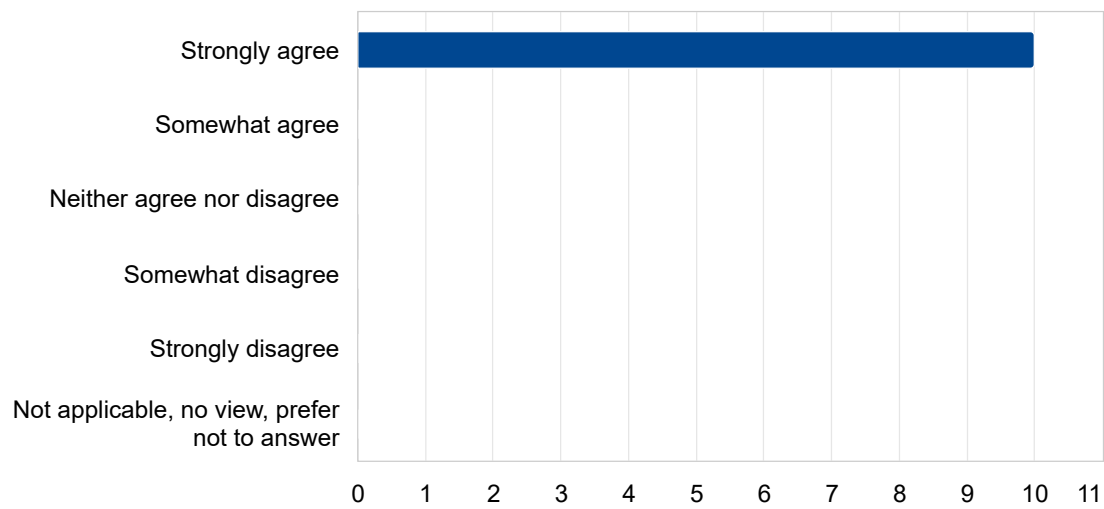

	Mean
I participated actively in the different parts of the course and studied continuously.	4.8

I participated actively in the different parts of the course and studied continuously.	**Number of responses**
Strongly agree	7 (70.0%)
Somewhat agree	2 (20.0%)
Neither agree nor disagree	0 (0.0%)
Somewhat disagree	0 (0.0%)
Strongly disagree	0 (0.0%)
Not applicable, no view, prefer not to answer	1 (10.0%)
Total	**10 (100.0%)**

5. I felt included and respected in this class.

	Mean
I felt included and respected in this class.	5.0

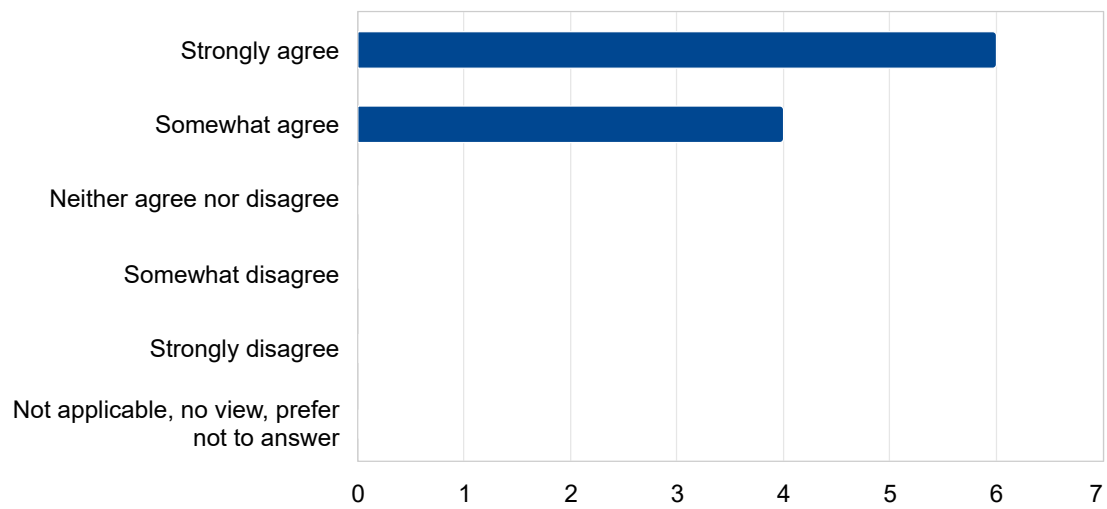| I felt included and respected in this class.	Number of responses
Strongly agree	10 (100.0%)
Somewhat agree	0 (0.0%)
Neither agree nor disagree	0 (0.0%)
Somewhat disagree	0 (0.0%)
Strongly disagree	0 (0.0%)
Not applicable, no view, prefer not to answer	0 (0.0%)
Total	**10 (100.0%)**

6. The course had reasonable scope and workload.
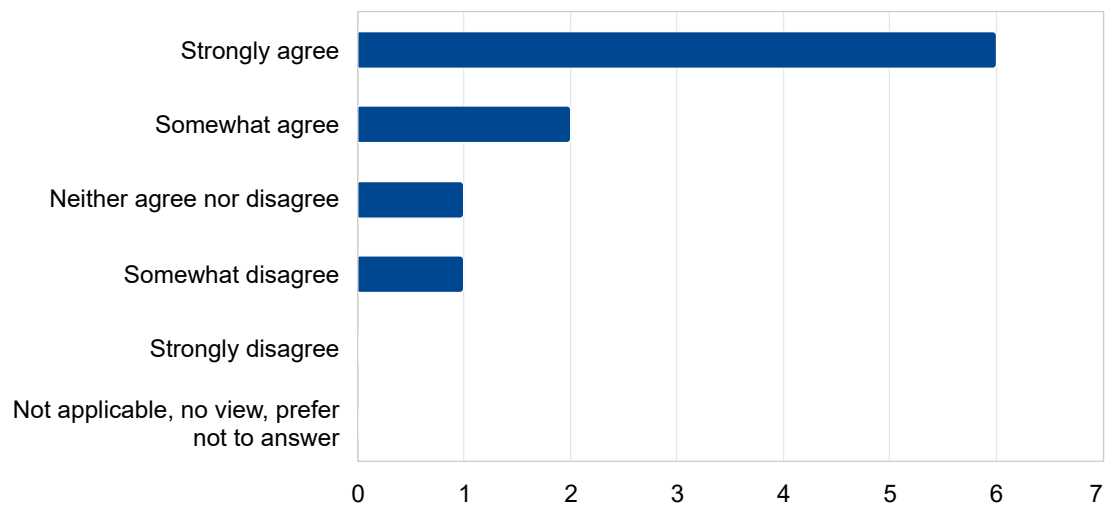
	Mean
The course had reasonable scope and workload.	4.3

The course had reasonable scope and workload.	**Number of responses**
Strongly agree	6 (60.0%)
Somewhat agree	2 (20.0%)
Neither agree nor disagree	1 (10.0%)
Somewhat disagree	1 (10.0%)
Strongly disagree	0 (0.0%)
Not applicable, no view, prefer not to answer	0 (0.0%)
Total	**10 (100.0%)**

7. The assessment was meaningful.

	Mean
The assessment was meaningful.	4.6

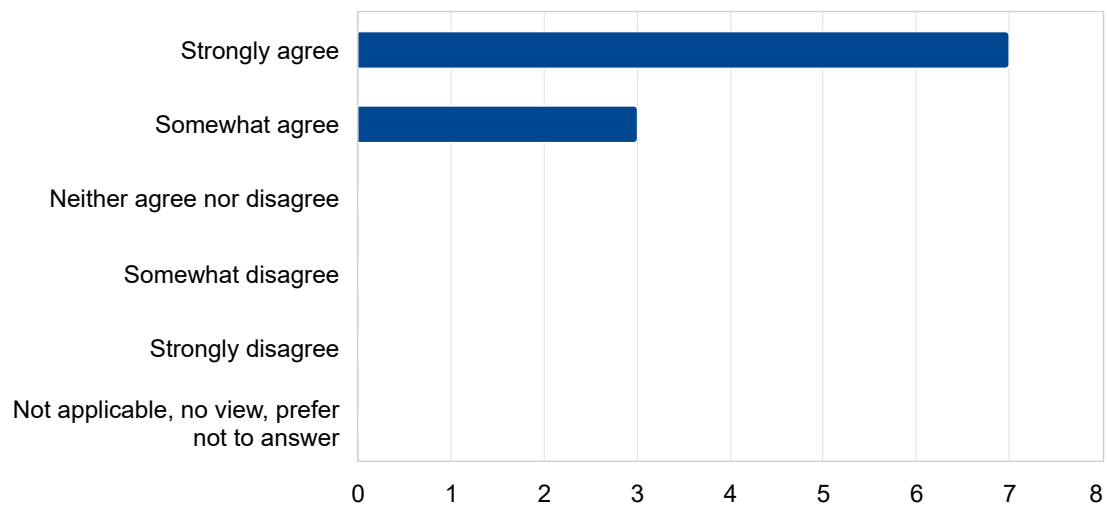| The assessment was meaningful.	Number of responses
Strongly agree	6 (60.0%)
Somewhat agree	4 (40.0%)
Neither agree nor disagree	0 (0.0%)
Somewhat disagree	0 (0.0%)
Strongly disagree	0 (0.0%)
Not applicable, no view, prefer not to answer	0 (0.0%)
Total	**10 (100.0%)**

8. The course feels relevant and I have developed my competence.

	Mean
The course feels relevant and I have developed my competence.	4.7

| The course feels relevant and I have developed my competence.	Number of responses
Strongly agree	7 (70.0%)
Somewhat agree	3 (30.0%)
Neither agree nor disagree	0 (0.0%)
Somewhat disagree	0 (0.0%)
Strongly disagree	0 (0.0%)
Not applicable, no view, prefer not to answer	0 (0.0%)
Total	**10 (100.0%)**

9. What has worked well in the course?

Free-text responses are not available in this report.

10. What can be developed in the course?

Free-text responses are not available in this report.

11. My overall impression of the course regarding both implementation and content is that it is good.
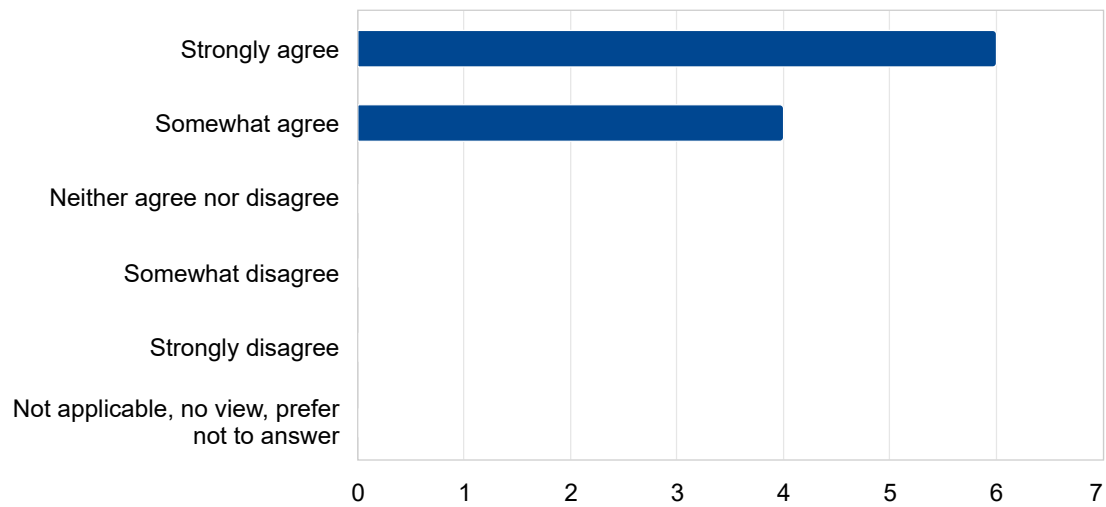
	Mean
My overall impression of the course regarding both implementation and content is that it is good.	4.6

My overall impression of the course regarding both implementation and content is that it is good.	Number of responses
Strongly agree	6 (60.0%)
Somewhat agree	4 (40.0%)
Neither agree nor disagree	0 (0.0%)
Somewhat disagree	0 (0.0%)
Strongly disagree	0 (0.0%)
Not applicable, no view, prefer not to answer	0 (0.0%)
Total	**10 (100.0%)**

2 Comments by the course coordinator