Hydroponic Systems in Horticultural Production and Public Environment BI1233, 20083.2223

15 Hp
Pace of study = 100%
Education cycle = Basic
Course leader = Anna Karin Rosberg

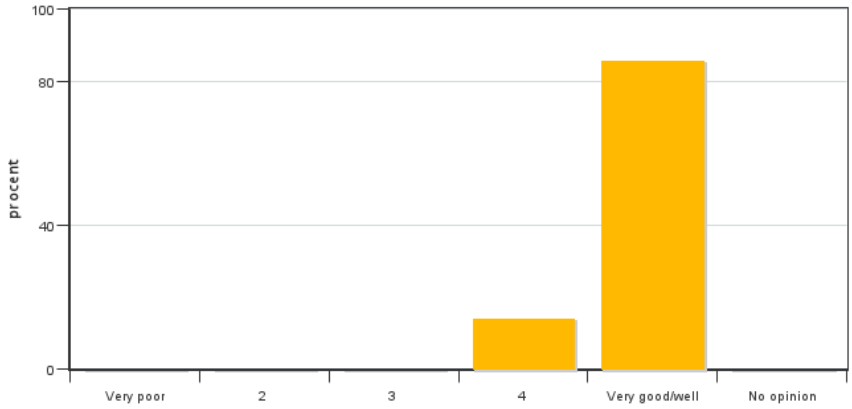
Evaluation report

Evaluation period: 2023-01-08 - 2023-01-29

Answers	7
Number of students	20
Answer frequency	35 %

Mandatory standard questions

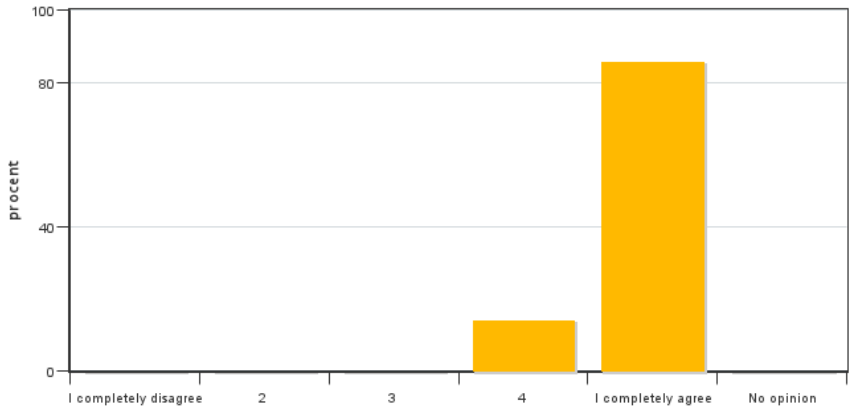
1. My overall impression of the course is:



Number of answers: 7
Average: 4,9
Median: 5

Very poor : 0
2: 0
3: 0
4: 1
Very good/well: 6
No opinion: 0

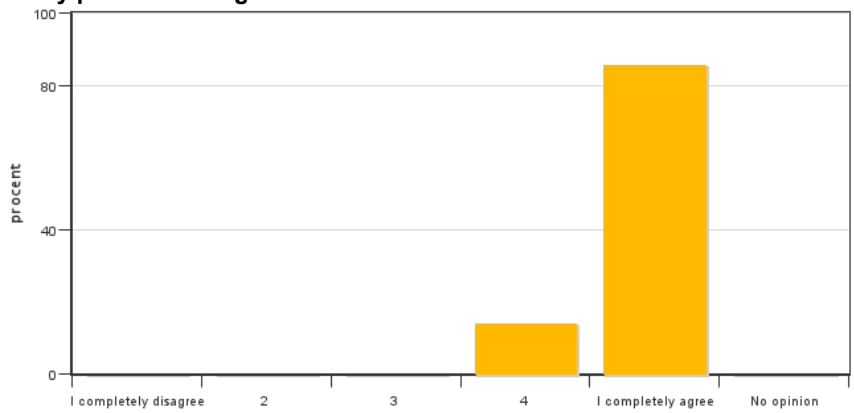
2. I found the course content to have clear links to the learning objectives of the course.



Number of answers: 7
Average: 4,9
Median: 5

I completely disagree: 0
2: 0
3: 0
4: 1
I completely agree: 6
No opinion: 0

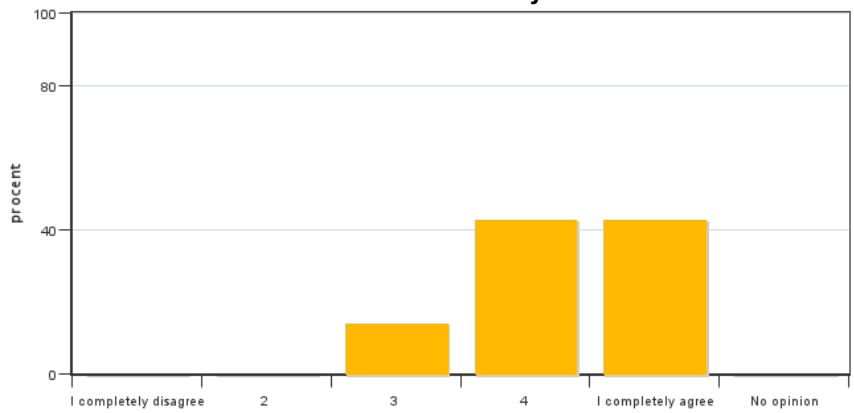
3. My prior knowledge was sufficient for me to benefit from the course.



Number of answers: 7
Average: 4,9
Median: 5

I completely disagree: 0
2: 0
3: 0
4: 1
I completely agree: 6
No opinion: 0

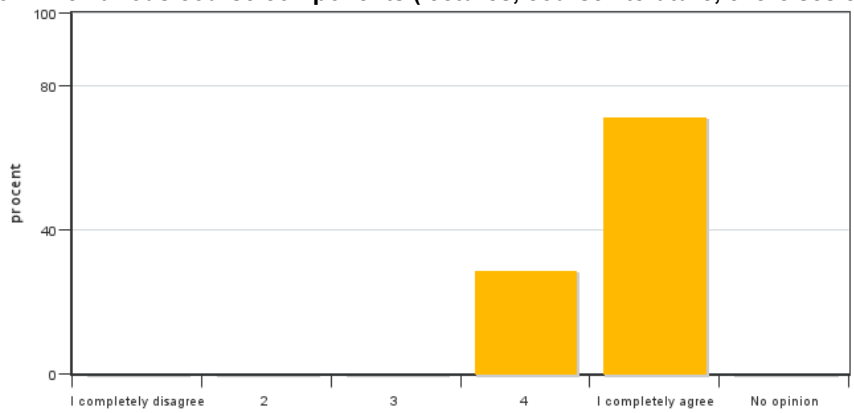
4. The information about the course was easily accessible.



Number of answers: 7
Average: 4,3
Median: 4

I completely disagree: 0
2: 0
3: 1
4: 3
I completely agree: 3
No opinion: 0

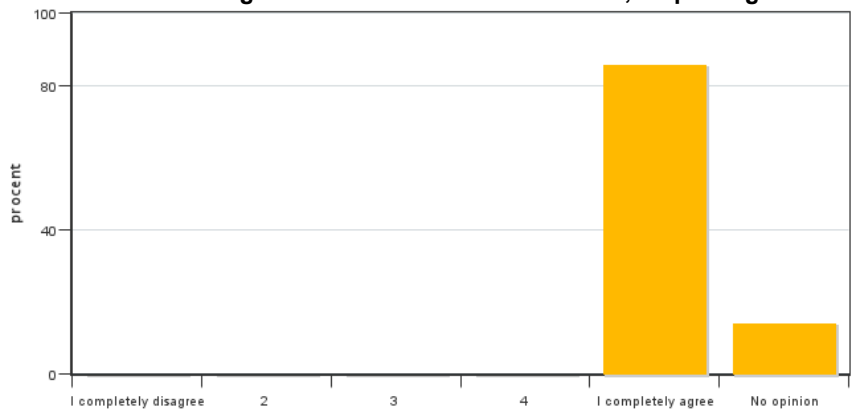
5. The various course components (lectures, course literature, exercises etc.) have supported my learning.



Number of answers: 7
Average: 4,7
Median: 5

I completely disagree: 0
2: 0
3: 0
4: 2
I completely agree: 5
No opinion: 0

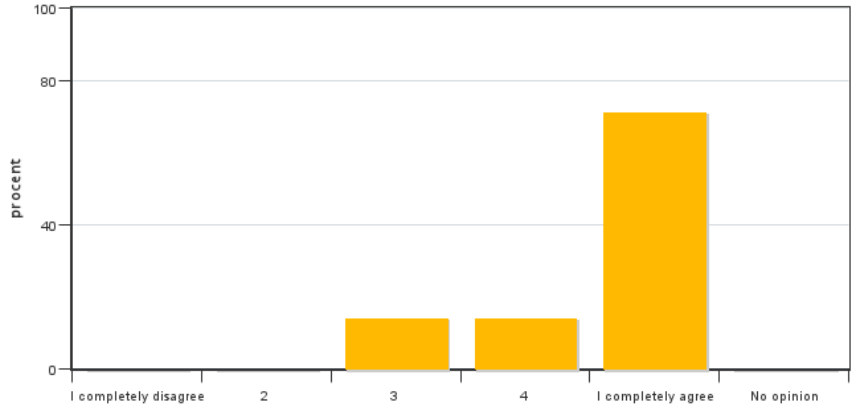
6. The social learning environment has been inclusive, respecting differences of opinion.



Number of answers: 7
Average: 5,0
Median: 5

I completely disagree: 0
2: 0
3: 0
4: 0
I completely agree: 6
No opinion: 1

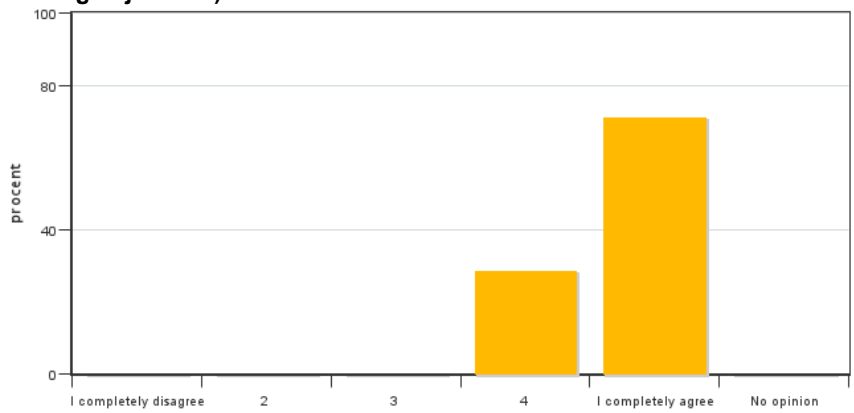
7. The physical learning environment (facilities, equipment etc.) has been satisfactory.



Number of answers: 7
Average: 4,6
Median: 5

I completely disagree: 0
2: 0
3: 1
4: 1
I completely agree: 5
No opinion: 0

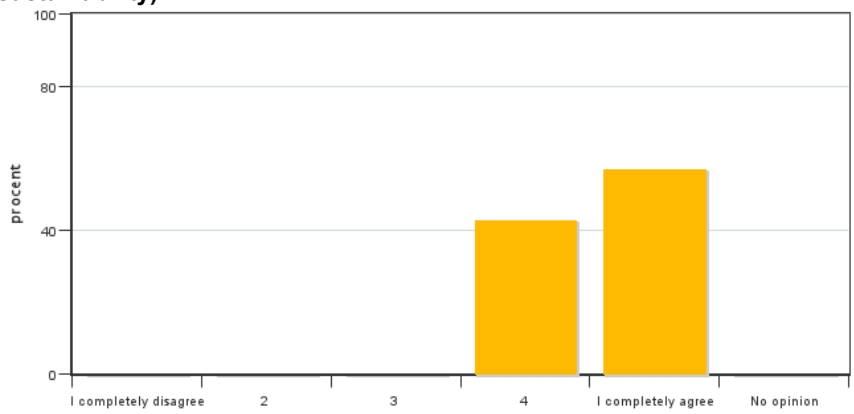
8. The examination(s) provided opportunity to demonstrate what I had learnt during the course (see the learning objectives).



Number of answers: 7
Average: 4,7
Median: 5

I completely disagree: 0
2: 0
3: 0
4: 2
I completely agree: 5
No opinion: 0

9. The course covered the sustainable development aspect (environmental, social and/or financial sustainability).

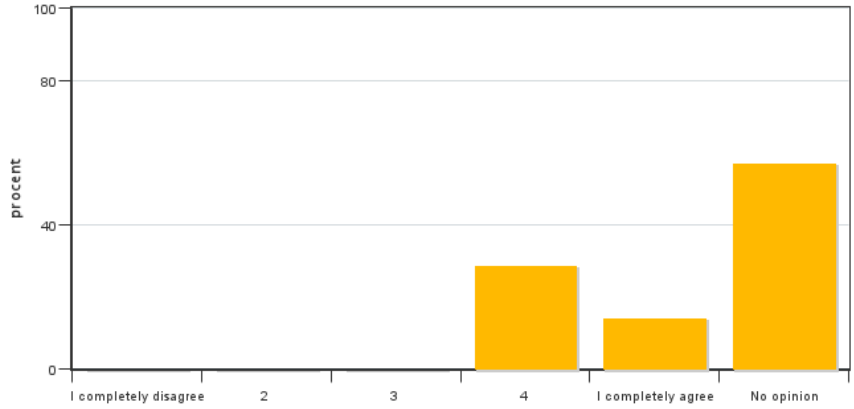


Number of answers: 7
Average: 4,6
Median: 5

I completely disagree: 0
2: 0
3: 0
4: 3
I completely agree: 4

No opinion: 0

10. I believe the course has included a gender and equality aspect, regarding content as well as teaching practices (e.g. perspective on the subject, reading list, allocation of speaking time and the use of master suppression techniques).

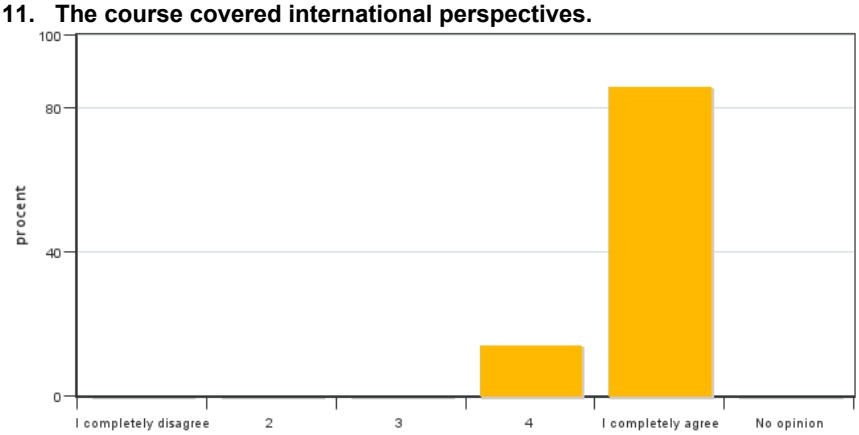


Number of answers: 7
Average: 4,3
Median: 4

I completely disagree: 0
2: 0
3: 0
4: 2
I completely agree: 1

No opinion: 4

11. The course covered international perspectives.

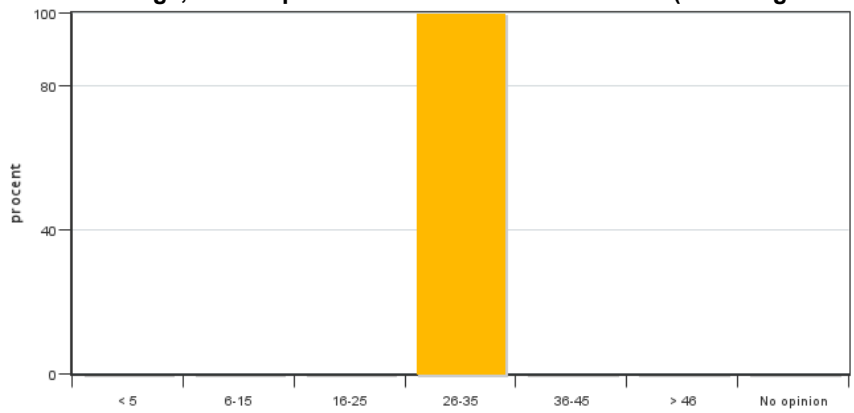


Number of answers: 7
Average: 4,9
Median: 5

I completely disagree: 0
2: 0
3: 0
4: 1
I completely agree: 6

No opinion: 0

12. On average, I have spent … hours/week on the course (including timetabled hours).

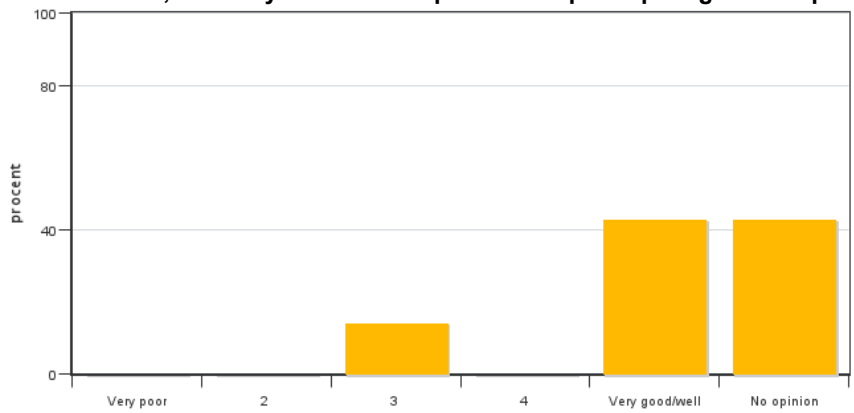


Number of answers: 7
Average: 30,0
Median: 26-35

< 5: 0
6-15: 0
16-25: 0
26-35: 7
36-45: 0
> 46: 0

No opinion: 0

13. If relevant, what is your overall experience of participating in all or part of your course online?



Number of answers: 7
Average: 4,5
Median: 5

Very poor : 0
2: 0
3: 1
4: 0
Very good/well: 3

No opinion: 3

14. If relevant, please share what worked well when participating in teaching on distance

14. If relevant, please share what worked less well when participating in teaching on distance

Course leaders comments

The course Hydroponic systems in Horticultural Production and Public Environment (BI1233) is a course on basic level that was given as a full time course, on campus, with 20 students. Most of the students came from the Horticultural Management program (Trädgårdsingenjör Odling), but there were also students from master level programs attending, as well as a couple of Erasmus students. The **overall impression** of the course had a grade of 4.9, which indicates that the students really enjoyed the course. Answer frequency of the course evaluation was 35 %, which seems a bit low. This was however complemented by an oral evaluation on the last day of the course that also reflected a very positive outcome of the course.

The course components that had lower scores were **course information** (4.3) where comments were made regarding the organization of the Canvas page. This is something that we will improve for next year in order to make the information more easily accessible. There were comments regarding some of the **laboratory exercises** (4.7) where the students felt that it was not always clear in what way the exercise connected to the course. For the next course, this is something that we need to look in to in order to make the exercises relevant for the students' learning.

Most of the exercises in the course takes place in the greenhouse. Due to the acoustics in the greenhouse it can be difficult to clearly hear what is being said, which means that long walkthroughs of instructions to the exercises can be difficult to follow, especially with a large group of students present. The **physical learning environment** (4.6) had slightly lower scores due to this.

Gender and equality aspects had a score of 4.3. Unfortunately, there were no comments to this score, which makes it difficult to interpret. However, we as teachers will look for potential to improve this. The students did feel that the **social learning environment** was inclusive (5.0) and respecting differences of opinion.

Sustainable development aspects (4.6) were fairly well covered, although improvements could be made in social and financial sustainability parts.

Overall, the course worked very well! The student group was engaged in all parts of the course and were all very positive and fun to be around!

Internal comments

Student representatives comments

This course was very well liked by students, a fact that is reflected both in the high overall impression of 4.9 / 5 given via the course evaluation as well as in everyday conversations during and after class. In response to the proportionally low number of students filling in the evaluation online I would imagine it was partly due to the fact that we had an in-person feedback session after the final class in which the students' comments were overwhelmingly positive.

Students appreciated the enthusiasm and knowledge of the teaching staff, the practical elements from the various labs and the reasonable workload throughout. Examinations and assignments were handled fairly and conscientiously, with a focus on the students experience that was greatly appreciated. In addition, we made several visits to a diverse range of businesses that could be categorised under the umbrella of hydroponics, bringing a breadth of scope to the possibilities within the field. These trips were informative, thought provoking and really enjoyable.

The aspects of the course that received lower scores regard small details and fine tuning for future years. These included the course information on canvas, where better organisation and division into different weeks or categories would have helped students find relevant information, especially towards the end of the course. A comment was also made about the relevance of some of the laboratory exercises though this opinion was not shared by all. The growing medium lab, for example, provided useful insight into the pros and cons of the different growing media available for use within hydroponic systems, as well as what critical aspects one might consider when designing a hydroponic system. One suggestion would be to move the growing lab to an earlier date so that the information gained there could be used in designing the students own hydroponic systems.

On the subject of the growing lab, an ongoing project throughout much of the course in which students designed and operated their own hydroponic systems, it could be interesting to encourage the students to be more experimental with less of a focus on producing large and healthy plants (though this was in itself a fun challenge!).

Sustainable development as well as gender and equality aspects were touched upon in some lectures, though this

area could be improved upon by covering more of the challenges of developing hydroponics in the global south, for example. Hydroponics has great potential to contribute to global sustainability and this aspect could be interesting to develop more, perhaps by looking at simpler and more affordable systems as well as some of the political and social challenges faced.

In summary this course comes highly recommended by this year's students for anyone interested in learning more about what hydroponic systems have to offer in a diverse range of horticultural applications, from small to large scale growing of food crops and ornamentals as well as applications in interior decorating, roofing, architecture and more.