



## Bioenergy - Technology and Systems TN0352, 30233.2021

10 Hp

Pace of study = 35%

Education cycle = Advanced -

Course leader = Åke Nordberg

### Evaluation report

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Evaluation period: 2021-05-30 - 2021-06-20

Answers 9

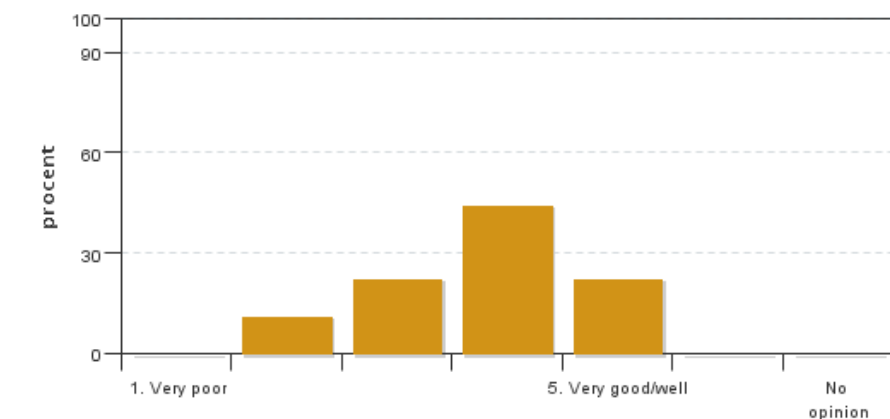
Number of students 18

Answer frequency 50 %

### Mandatory standard questions

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#### 1. My overall impression of the course is:

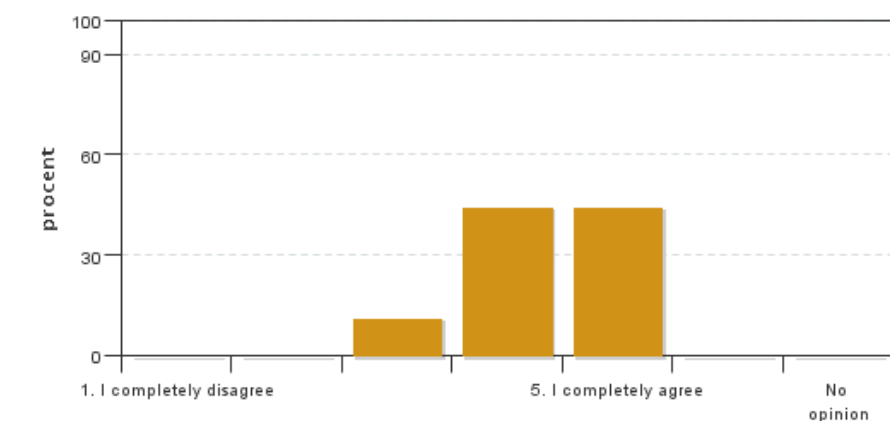


Answers: 9  
Medel: 3,8  
Median: 4

1: 0  
2: 1  
3: 2  
4: 4  
5: 2

No opinion: 0

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

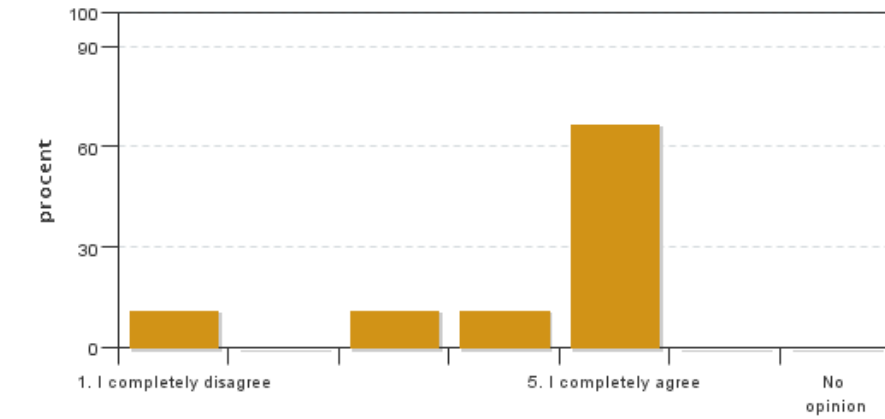


Answers: 9  
Medel: 4,3  
Median: 4

1: 0  
2: 0  
3: 1  
4: 4  
5: 4

No opinion: 0

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

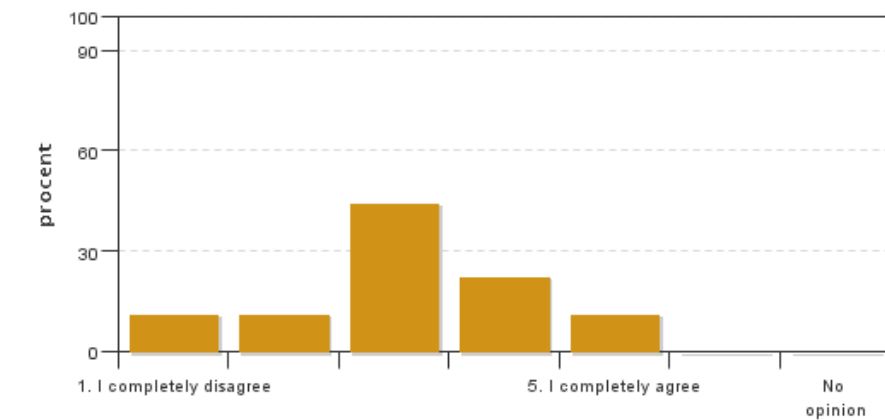


Answers: 9  
 Medel: 4,2  
 Median: 5

1: 1  
 2: 0  
 3: 1  
 4: 1  
 5: 6

No opinion: 0

**4. The information about the course was easily accessible.**

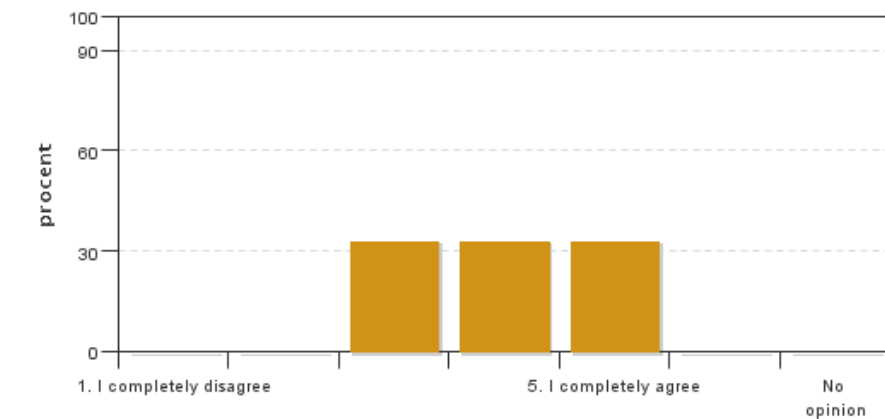


Answers: 9  
 Medel: 3,1  
 Median: 3

1: 1  
 2: 1  
 3: 4  
 4: 2  
 5: 1

No opinion: 0

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

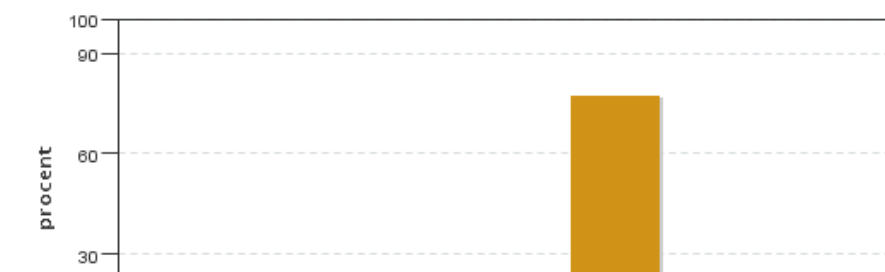


Answers: 9  
 Medel: 4,0  
 Median: 4

1: 0  
 2: 0  
 3: 3  
 4: 3  
 5: 3

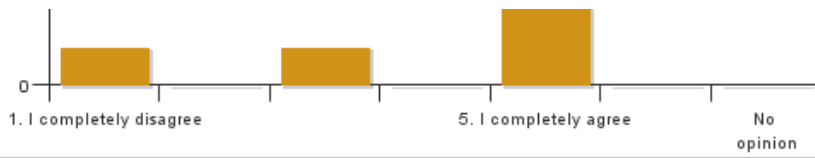
No opinion: 0

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



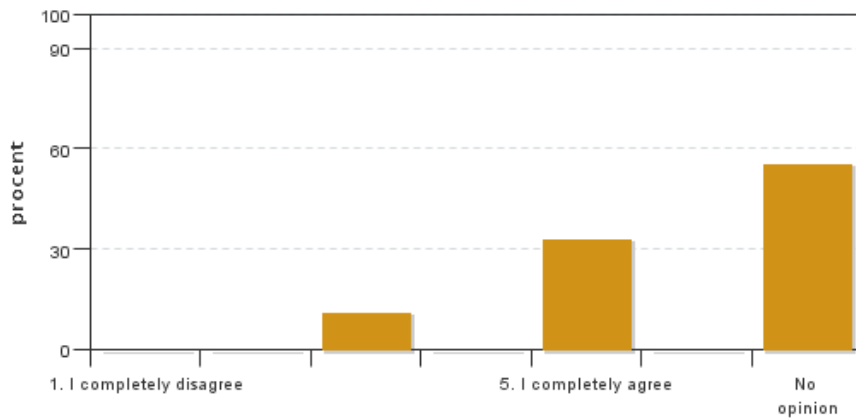
Answers: 9  
 Medel: 4,3  
 Median: 5

1: 1  
 2: 0  
 3: 1  
 4: 0  
 5: 7



No opinion: 0

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



Answers: 9

Medel: 4,5

Median: 5

1: 0

2: 0

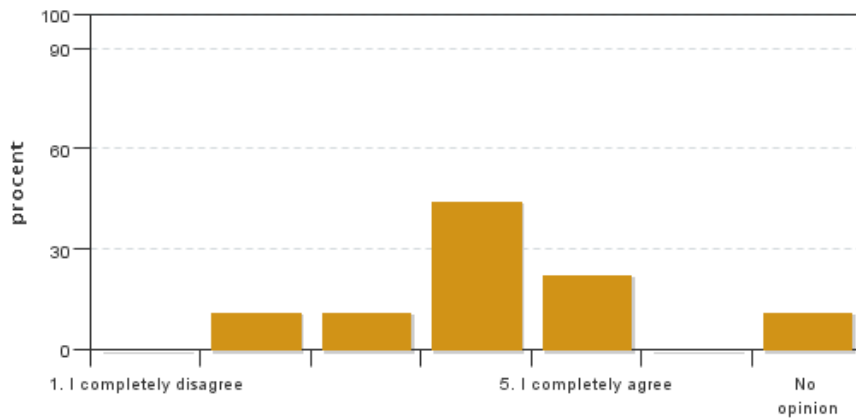
3: 1

4: 0

5: 3

No opinion: 5

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



Answers: 9

Medel: 3,9

Median: 4

1: 0

2: 1

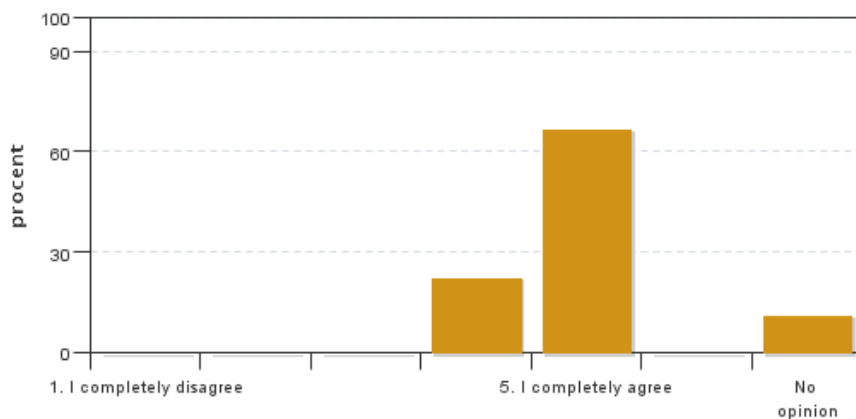
3: 1

4: 4

5: 2

No opinion: 1

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



Answers: 9

Medel: 4,8

Median: 5

1: 0

2: 0

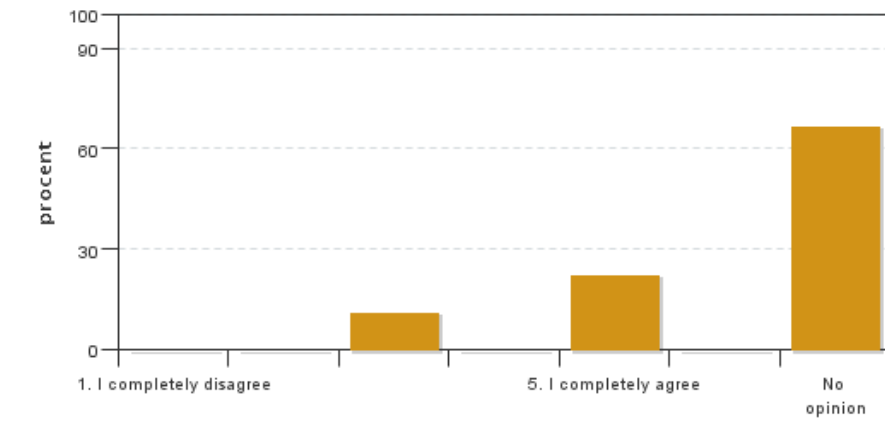
3: 0

4: 2

5: 6

No opinion: 1

**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).**

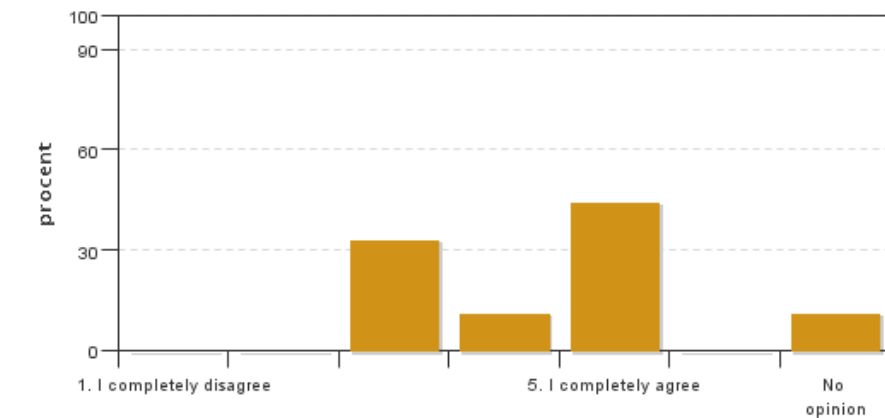


Answers: 9  
 Medel: 4,3  
 Median: 5

1: 0  
 2: 0  
 3: 1  
 4: 0  
 5: 2

No opinion: 6

**11. The course covered international perspectives.**

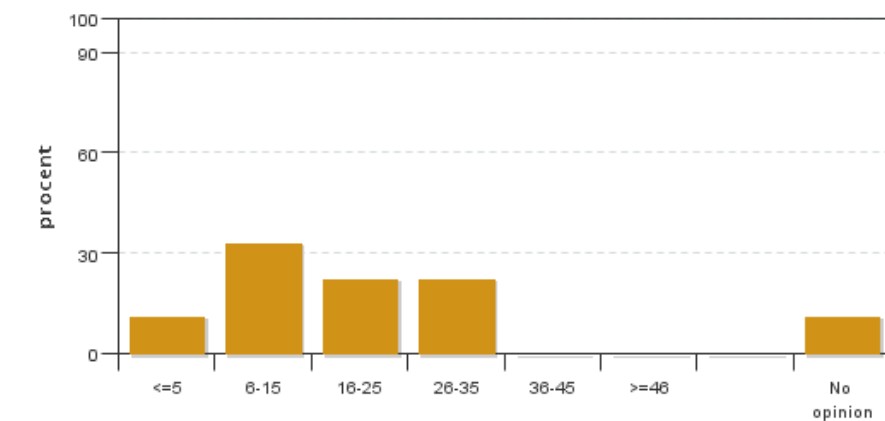


Answers: 9  
 Medel: 4,1  
 Median: 4

1: 0  
 2: 0  
 3: 3  
 4: 1  
 5: 4

No opinion: 1

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

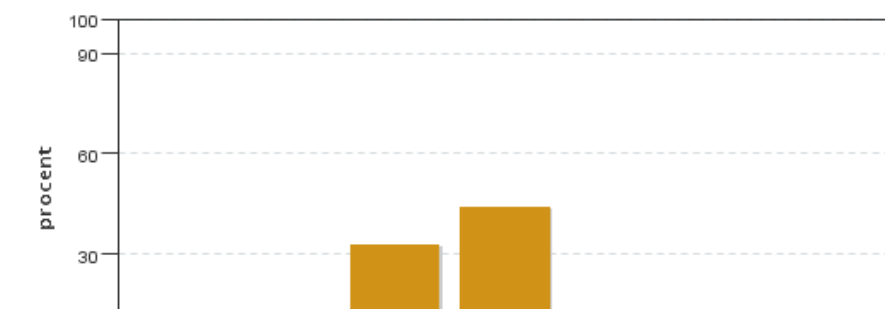


Answers: 9  
 Medel: 16,6  
 Median: 6-15

<=5: 1  
 6-15: 3  
 16-25: 2  
 26-35: 2  
 36-45: 0  
 >=46: 0

No opinion: 1

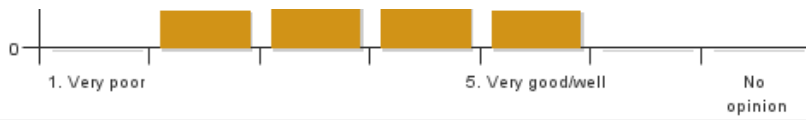
**13. What is your overall experience of participating in all or part of your course online?**



Answers: 9  
 Medel: 3,6  
 Median: 4

1: 0  
 2: 1  
 3: 3  
 4: 4  
 5: 1

No opinion: 0



#### 14. Please share what worked well when participating in teaching on distance

#### 15. Please share what worked less well when participating in teaching on distance

### Course leaders comments

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The response frequency on the course evaluation was 9 students out of 16 (who participated in the course). We thank for the responses, which are a valuable contribution for the continuous progressive development of the course. We also like to thank the student representative for a thorough analysis of the evaluation. The general course impression rated 3.8 as average and we share the student representative view that the course was overall appreciated. Based on previous course evaluations including the current evaluation we believe that structuring the course into three blocks is still appropriate to cover the rather broad range of bioenergy.

Below we comment some points raised in more detail:

**Distance teaching:** The course was completely performed on-line with no physical meetings. The recent change to only on-line teaching has been a challenge for both teacher and students. Among the students, there are different views of what works well/less well. For the future with "normalized" conditions, some parts will remain as on-line activities. Our interpretation is that on-line and recorded lectures were in general appreciated due to the option to re-watch and it is comfortable not to have to go to campus. Furthermore, it is easier to engage guest lectures in other parts of Sweden if they can participate on-line. However, there is still a value in meeting and interact in physical meetings and e.g. the compulsory parts might be activities to have as physical meetings for future courses.

**Structure on Canvas:** We agree that the structure can be improved. There is a "default" structure provided for the teachers and there are details in how to manage the Canvas-platform, which we will look over with the aim to harmonize the three blocks. Compared to last year, we experience that the platform has technically worked better. Some problems were related to auxiliary equipment for lectures such as microphones.

**Study visits:** This year it was necessary to have "virtual" study visits where plant operators described how the plant was organized and operated. In the future, we hope that we can go back to physical visits in order to use all senses to get a better impression of the conditions on a bioenergy plant. When organizing study visits, we are dependent on the willingness and accessibility to the plants dictated by the plant owners. This has worked well and we hope to keep that confidence with external actors.

**Written exam:** The biggest challenge from a teacher perspective is the on-line examinations. The tool provided (Canvas) is not optimized for written exams in the way we like to perform them. It is tiresome and time consuming trying to find out how to phrase a question in order to fit the quiz options. If somebody responsible in the central organization reads this teacher comment, we like to send the message to look for a more appropriate tool created to make on-line exams easier to perform. However, for the future we hope that we can return to the conventional written exams.

### Student representatives comments

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The number of students that have replied on the course evaluation was 9 out 18 students. 50 percent, which can be seen as a rather high contributing number. Overall, for the course, questions regarding the quality and impression of the course all had an answer average of 3 and above. The average student was pleased with the course. Especially students were pleased with the study environment, were 7 out of 9 answered a 5 regarding if the study environment was respectful and inclusive. One student answered 1, and wrote a comment concerning one lecturer being rude in the sense that they criticized the student when they were asking about course. From my understanding this was cleared up with main lecturer of the course.

The difficulty of the course was seen as appropriate were the average student answered 4.2 regarding if their prior knowledge was sufficient, and the average student invested 16.6 hours a week. The average answer regarding difficulty was 3.2.

The strength of the online teaching was the ability to rewatch the lectures, thus giving a second chance repeat the material. The teachers were also seen as a strong point of the course. Being very engaged in teaching the material. The weakness was the ability to keep the attention.

The weak part of the course was the structure on canvas. A lot of material was included on the course page, but it was hard to distinguish the relevance of all the different documents. Some materials were included from former years and was not included by the lecturer in their teaching. Some of the lecture recordings were never posted on canvas. An issue that interacts with another point brought to light in the evaluation was that some of the power points were in Swedish. Making them inaccessible if you do not know Swedish and not able to rewatch the recordings. There were also comments regarding the quality of the microphone on behalf of the lecturer. Making it hard to hear what the lecturer was saying. Actions can be made to clear up the canvas page without difficulty, and the issue with technical difficulty is an issue easier dealt with directly. This can be easily fixed with a microphone borrowed from the campus.

The guest lectures were interesting, but sometimes a bit too specific. Making the lectures very time consuming (taking up the whole afternoon). Some material that had been introduced by the main lecturer was often repeated by the guest lecturer. The study visits were hard to follow since it was online. Of course, it was necessity, but maybe this could have been done with a tour of the plant via zoom. But this could also be a problem due to the regulations at the time and coincide with the weakness of online teaching.

My thought of the course was that it was very relevant and interesting. With teachers that were engaged and had a very a good knowledge regarding their area. They were eager to discuss questions about their area. The distribution and structure of the information was the weaker point. With a lot of material covered, without a clear structure made it hard to follow up on what was really supposed to be the essential part of that material. One block that had a good structure was the third block regarding biogas. All the lecture recordings were present and included a quiz in combination with every lecture. Making it easy to assess your own knowledge. One specific point that lacked proper structure was the first group assignment where no document or clear instructions of what was to be expected was given. This created confusion and made it hard to work with the assignment.

To make the course more accessible is for all blocks to agree to one standard. My suggestion is to make all the blocks follow the same structure as the third block, and then change up the first assignment if it is hard to structure and have it more as a seminar with interesting papers as a background and more open questions discussed at the seminar.

To summarize, the course was very interesting and in its time regarding the issues and advantages of bioenergy. Engaged and qualified lecturers made the course interesting. Where it needs to improve is the structure of the course. To make it connect between the lectures and material on canvas that have clear connection.