Analytical Natural Products Chemistry
KE0076, 40154.2223

7.5 Hp
Pace of study = 100%
Education cycle = Basic
Course leader = Anders Broberg

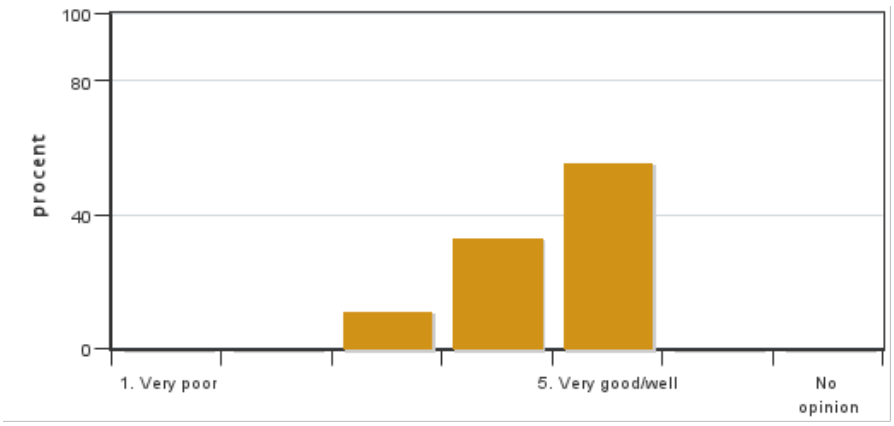
Evaluation report

Evaluation period: 2023-04-20 - 2023-05-11

Answers	9
Number of students	10
Answer frequency	90 %

Mandatory standard questions

1. My overall impression of the course is:

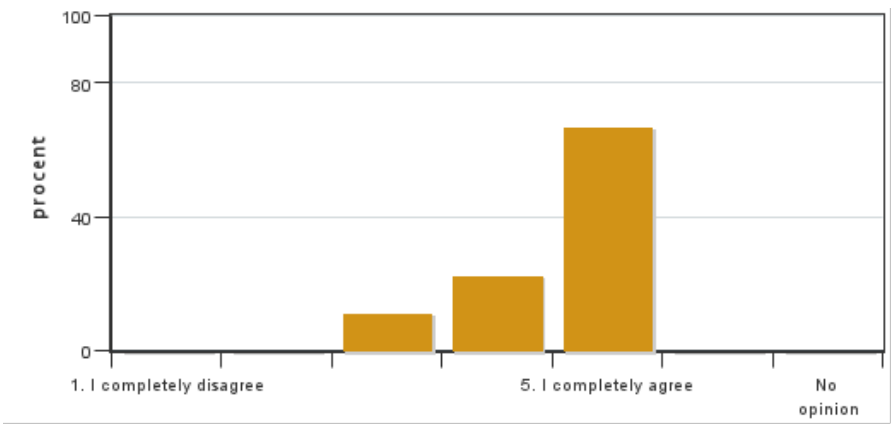


Answers: 9
Medel: 4,4
Median: 5

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

No opinion: 0

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

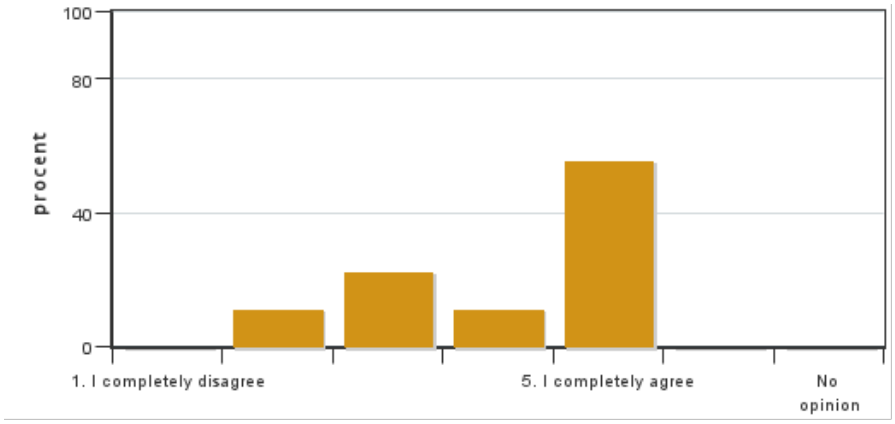


Answers: 9
Medel: 4,6
Median: 5

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

No opinion: 0

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

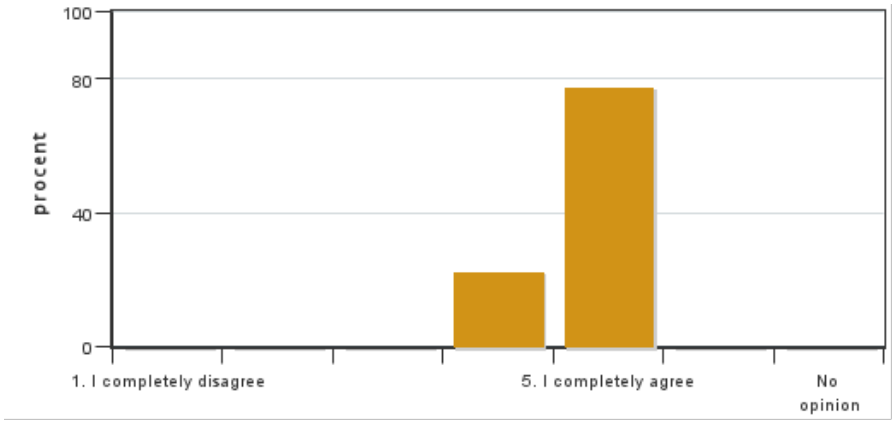


Answers: 9
Medel: 4,1
Median: 5

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

No opinion: 0

4. The information about the course was easily accessible.

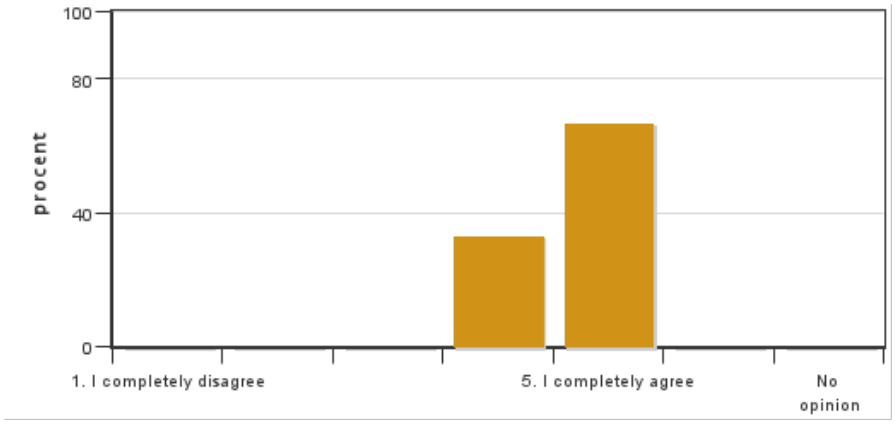


Answers: 9
Medel: 4,8
Median: 5

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

No opinion: 0

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



Answers: 9
Medel: 4,7
Median: 5

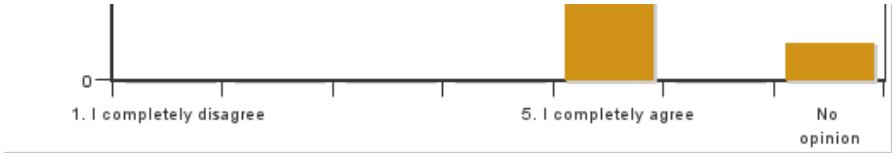
1: 0
2: 0
3: 0
4: 3
5: 6

No opinion: 0

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

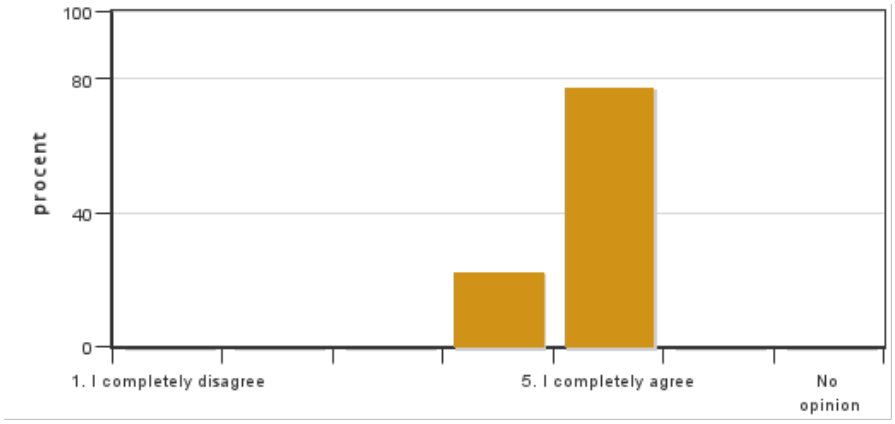
Answers: 9
Medel: 5,0
Median: 5

1: 0
2: 0
3: 0
4: 0
5: 8



No opinion: 1

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

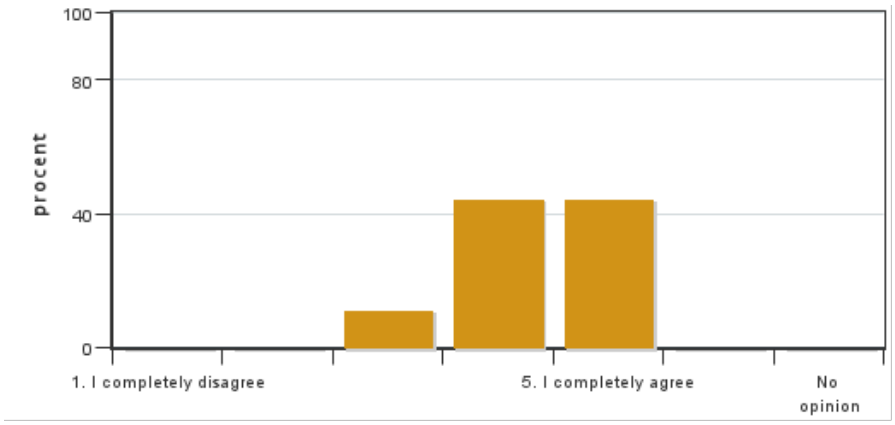


Answers: 9
Medel: 4,8
Median: 5

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

No opinion: 0

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

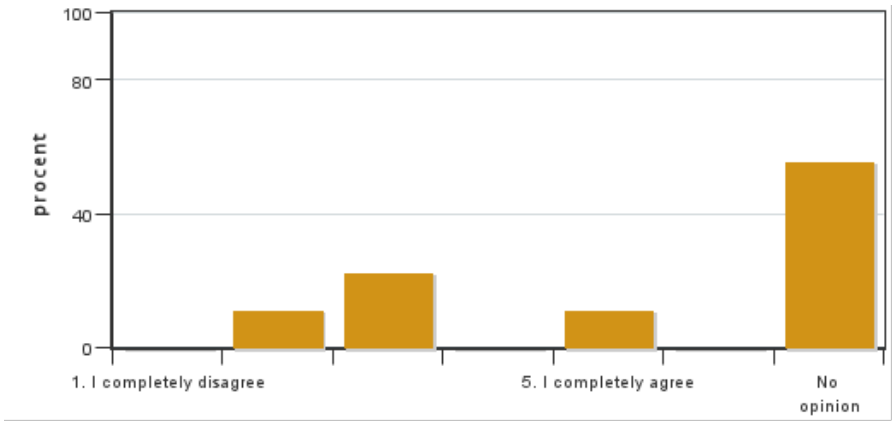


Answers: 9
Medel: 4,3
Median: 4

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

No opinion: 0

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

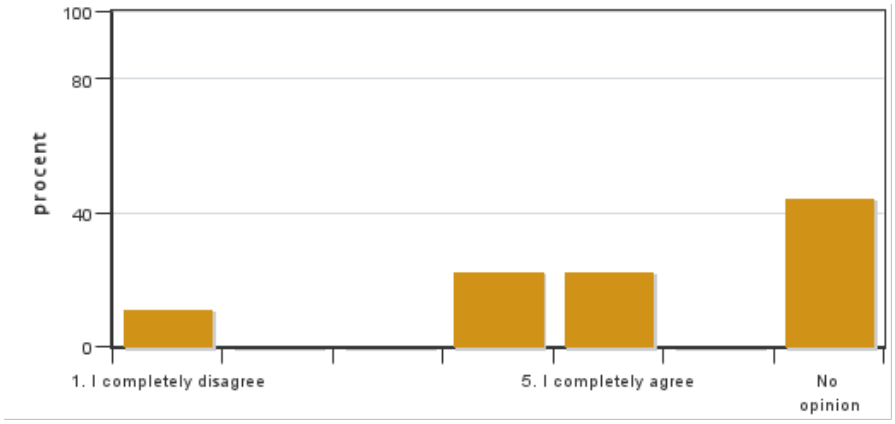


Answers: 9
Medel: 3,3
Median: 3

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

No opinion: 5

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).

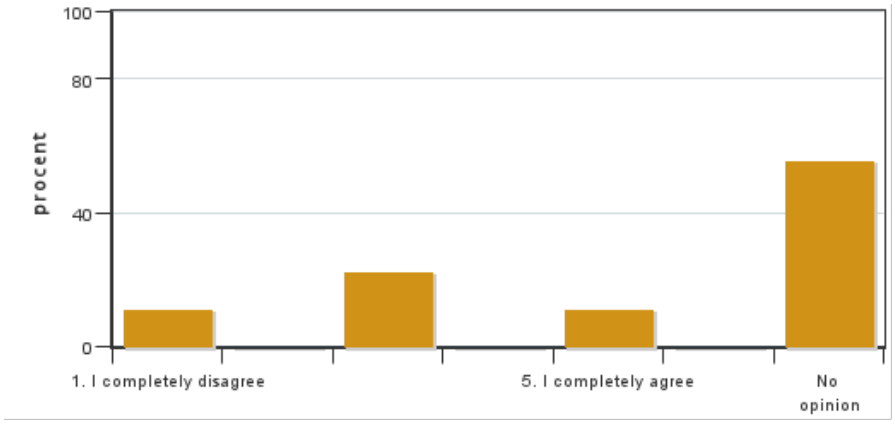


Answers: 9
Medel: 3,8
Median: 4

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

No opinion: 4

11. The course covered international perspectives.

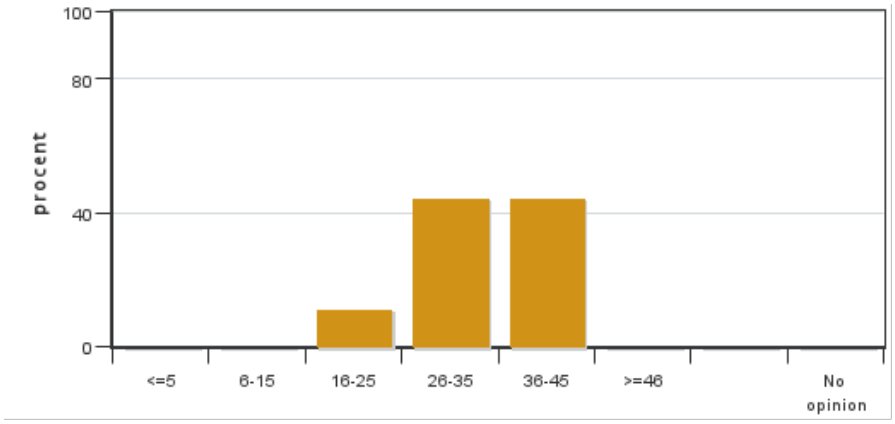


Answers: 9
Medel: 3,0
Median: 3

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

No opinion: 5

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



Answers: 9
Medel: 33,3
Median: 26-35

≤5: 0
6-15: 0
16-25: 1
26-35: 4
36-45: 4
≥46: 0

No opinion: 0

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

Answers: 9
Medel: 4,8
Median: 5

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

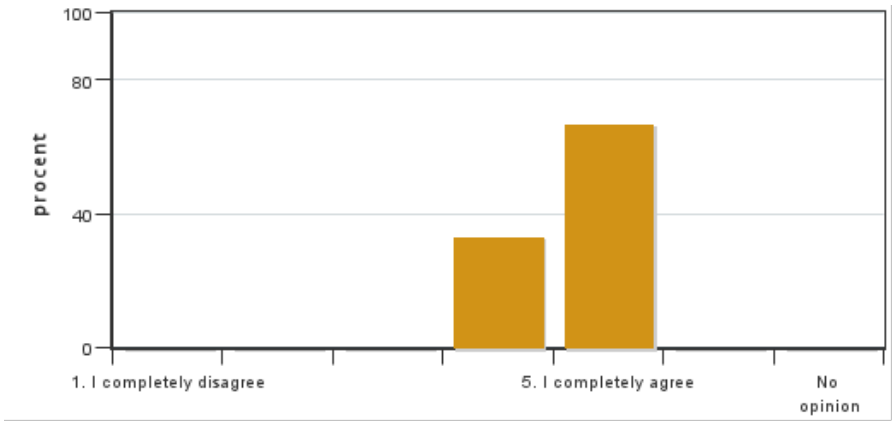
No opinion: 5

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

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

Additional own questions

16. The proportion between the different teaching forms (laboratory exercises, lectures, exercises, etc.) has been good.

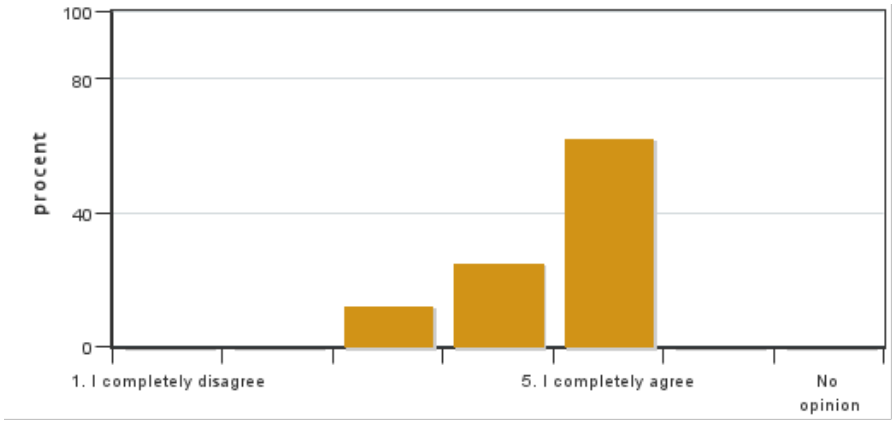


Answers: 9
Medel: 4,7
Median: 5

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

No opinion: 0

17. The lectures presented the theory content of the course in a clear and efficient way.

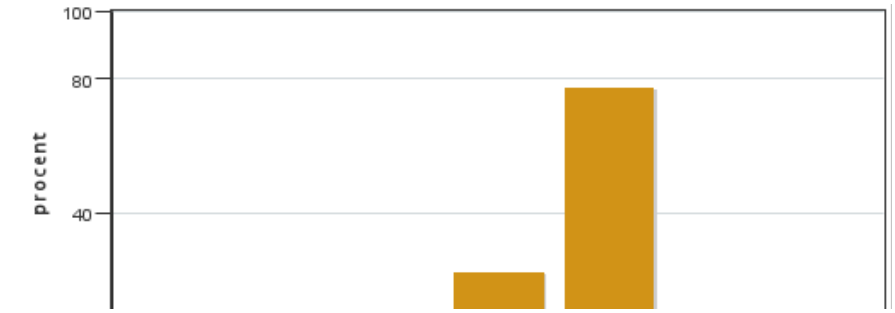


Answers: 8
Medel: 4,5
Median: 5

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

No opinion: 0

18. The exercises were important to understand the theoretical contents of the course.

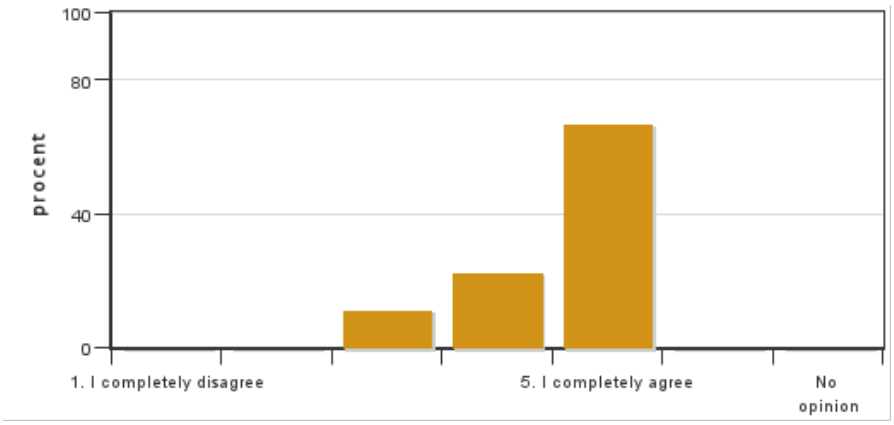


Answers: 9
Medel: 4,8
Median: 5

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

No opinion: 0

19. The laboratory exercises illustrated important parts of the course and increased the understanding of the theory.

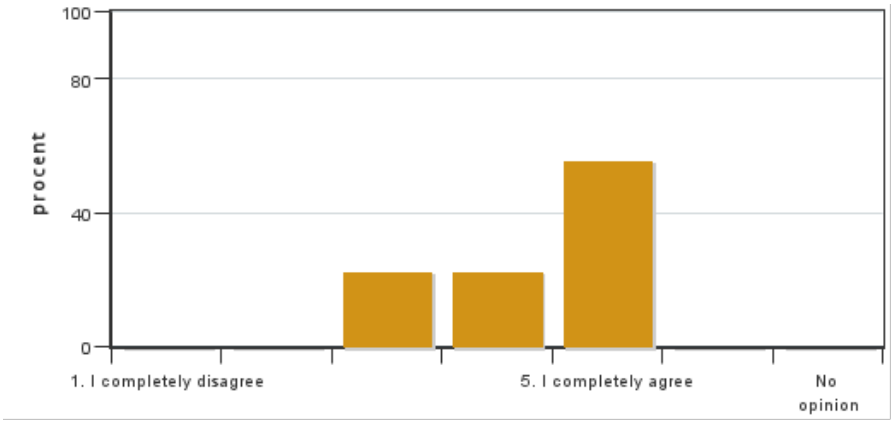


Answers: 9
Medel: 4,6
Median: 5

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

No opinion: 0

20. The project was an important part of the course.

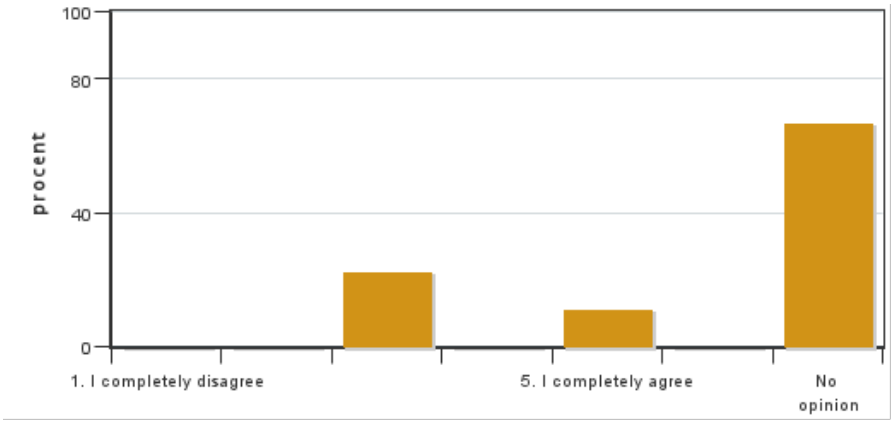


Answers: 9
Medel: 4,3
Median: 5

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

No opinion: 0

21. The text book "Hanson" was good.

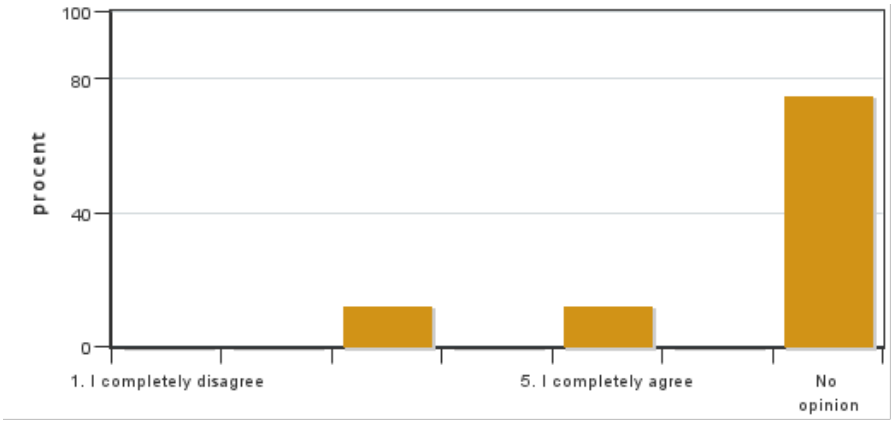


Answers: 9
Medel: 3,7
Median: 3

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

No opinion: 6

22. The text book "Mahaffy" (or "Blackman") was good.



Answers: 8
Medel: 4,0
Median: 3

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

No opinion: 6

Course leaders comments

Nine of eleven students answered the evaluation questionnaire, which is a reasonable good frequency. The students' overall impression of the course was very good, with average grade 4.4. The link to the learning objectives was clear (average grade 4.6) and most students experienced that they had sufficient prior knowledge (average 4.1). The course information, mainly via the Canvas room but also via E-mail, was considered to be accessible (average 4.8), even if I had to make some late changes in the schedule during the course. The course components, including lectures, exercises, lab exercises and the project lab, were all considered to have supported the learning (average 4.6). Specific comments from students gave very positive feedback to all components of the course, including all the involved teachers. The proportion between different teaching forms was considered to be good (average 4.7), and I am very happy to read comments that the lectures, exercises and lab exercises were connected and that they together were important to the learning process. Several students pointed out that it was good to have pre-recorded “back-up” lectures available in the Canvas room, for repetition or if some lectures were missed. The average student spent 33 hours per week on the course (one student: 16-25 h/week, four students 26-35 h/week, and four students 36-45 h/week). The final examination was given the grade 4.3 on average.

The social and physical learning environment was given very high grades, 5.0 and 4.8, respectively, in average. Among several things, this probably means that the students, in general, felt reasonably comfortable with the “learning situation” and that they were allowed to ask questions, which is very good for the learning process. As judged by the comments, I think this was the situation during lectures, exercises, lab exercises and project lab.

Regarding sustainable development aspect, gender and equality aspect, and international perspectives, the average grading was 3.3, 3.8 and 3.0, respectively, and many students (4-5 per question) did not give any grading on these questions. The course deals very little with the sustainable development aspect, and one goal for the coming years could be to increase this part. At present, some environmental concerns regarding use of organic solvents in chemistry are mentioned, along with some discussion about introducing new chlorinated artificial sweeteners to the market, but it could probably be increased even if it is not straightforward what to include. Regarding the gender and equality aspect, one student completely disagreed that the course included this aspect, and yes, these aspects are almost absent on the course. As I understand it, the gender aspect is only slightly touched upon in the lecture about steroids. In this lecture, the structures of male and female sex hormones were discussed in one of the lectures, and here also the Norwegian skier Therese Johaug served as an example on how doping can be traced by mass spectrometry. For a better balance, also a male athlete could be mentioned in this context. Regarding allocation of speaking time, I gave all the lectures, which were developed, improved and updated by myself over 17 years, and Professor Corine Sandström gave all the theoretical exercises. It would definitely be possible to mix our contributions to the lectures and exercises, but this is the division between us that we have preferred during the last years. Regarding “The course covered international perspectives”, the chemistry presented in the course is very general and is valid regardless of where you are in the world. However, some examples are given with respect to where in the world you find e.g. plants or animals that produce certain compounds, and also some examples on how different plants are used in traditional medicine, in Sweden as elsewhere.

Thoughts for the future: The mixture of lectures, exercises, lab exercises and a project, appear to be liked by most students, and this year's result on the final exam was very good. This probably means that the course needs no major changes right now, but only the regular updating and polishing of lectures and exercises, and further streamlining the lab instructions. However, for the future, I will try to include a bit more thoughts of sustainable development in several of the lectures.

Student representatives comments

Kommentar Studentrepresentant Analytisk Naturproduktskemi

Studenterna var väldigt nöjda med kursen och uppskattade hela upplägget med övningar som byggde på föreläsningarna och labbarna som ytterligare stöttade lärandet. Föreläsningarna, övningarna, labbarna och projektet fick alla över 4 i betyg vilket visar på hur mycket vi studenter uppskattade dem. De som undervisade i de olika momenten har alla varit väldigt hjälpsamma och stöttat oss studenter mycket i vårt lärande.

Canvas-rummet med tillhörande instruktioner var lätt att förstå och information var lättillgängligt.

Studenterna var även nöjda med tentamen som fick ett betyg på 4,3 där de tyckte att den väl representerade det vi lärt oss under kursen. I snitt spenderade studenterna mellan 26-26 timmar per vecka på kursen.

På fråga 9-11 om internationella perspektiv, jämlikhet och hållbarhet var svaren lite splittrade men ingen har lämnat någon kommentar.

English comment:

The students were very satisfied with the course and appreciated the whole arrangement of exercises that built on the lectures and the labs that further supported the learning. The lectures, the exercises, the labs and the project were all rated above 4, which shows how much we students appreciated them. Those who taught the various elements have all been very helpful and supported us students a lot in our learning.

The canvas room with accompanying instructions was easy to understand and information was readily available.

The students were also satisfied with the exam, which received a grade of 4.3, where they thought it well represented what we learned during the course. On average, the students spent between 26-26 hours per week on the course.

On questions 9-11 about international perspectives, equality and sustainability, the answers were a bit divisive, but no one left a comment.