Genetic diversity and plant breeding
BI1103, 20061.2223

15 Hp
Pace of study = 100%
Education cycle = Advanced

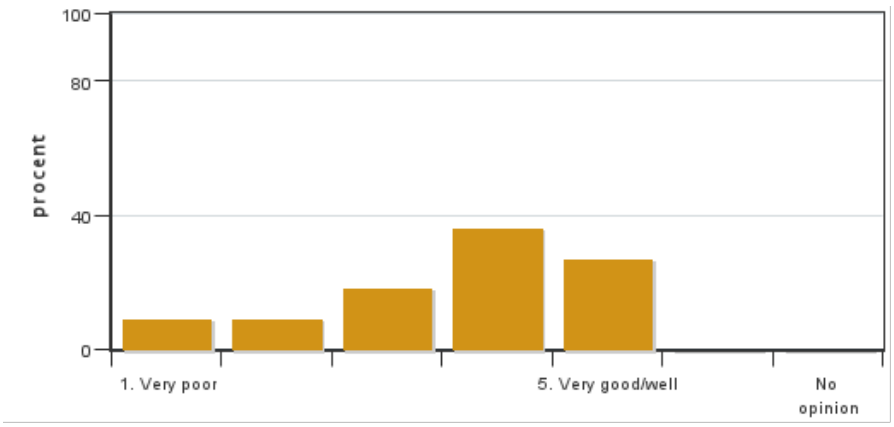
Evaluation report

Evaluation period: 2023-01-10 - 2023-01-29

Answers	11
Number of students	22
Answer frequency	50 %

Mandatory standard questions

1. My overall impression of the course is:

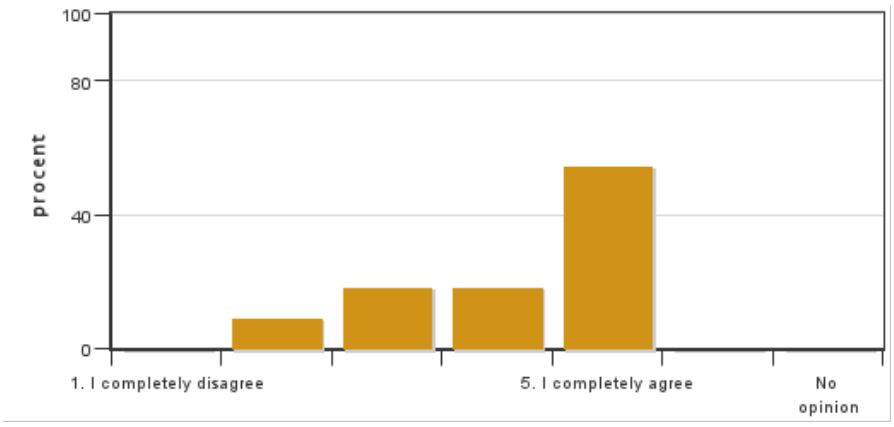


Answers: 11
Medel: 3,6
Median: 4

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

No opinion: 0

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

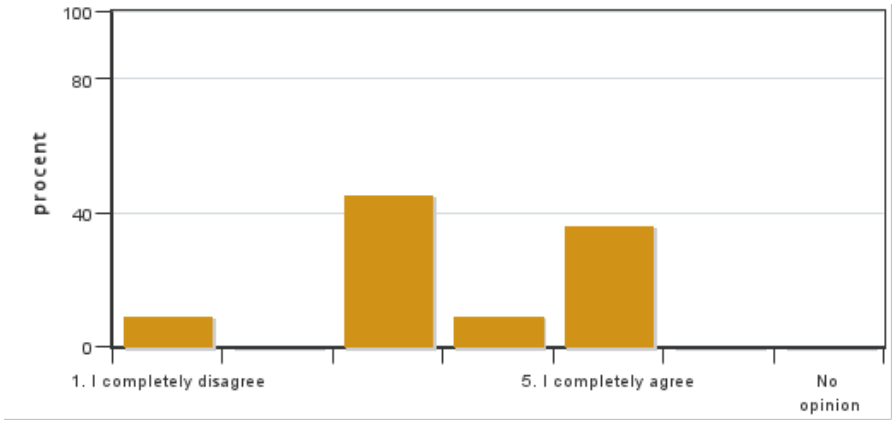


Answers: 11
Medel: 4,2
Median: 5

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

No opinion: 0

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

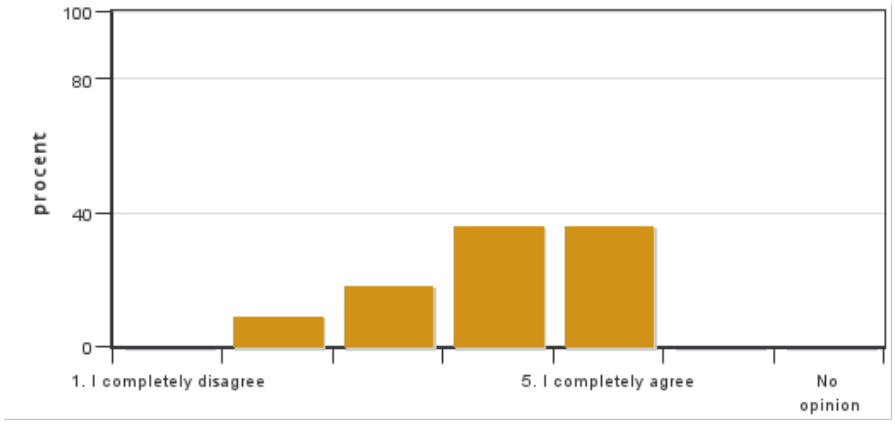


Answers: 11
Medel: 3,6
Median: 3

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

No opinion: 0

4. The information about the course was easily accessible.

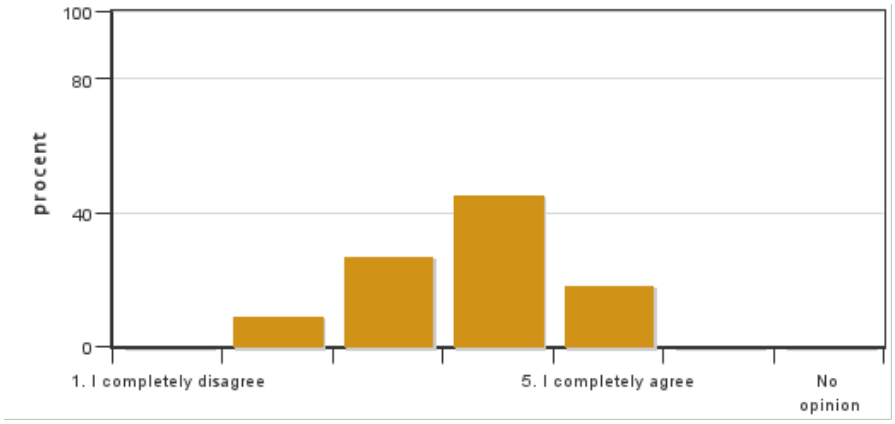


Answers: 11
Medel: 4,0
Median: 4

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

No opinion: 0

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

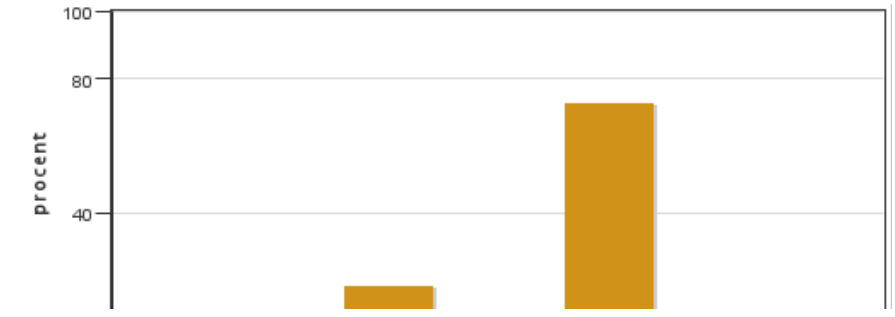


Answers: 11
Medel: 3,7
Median: 4

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

No opinion: 0

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

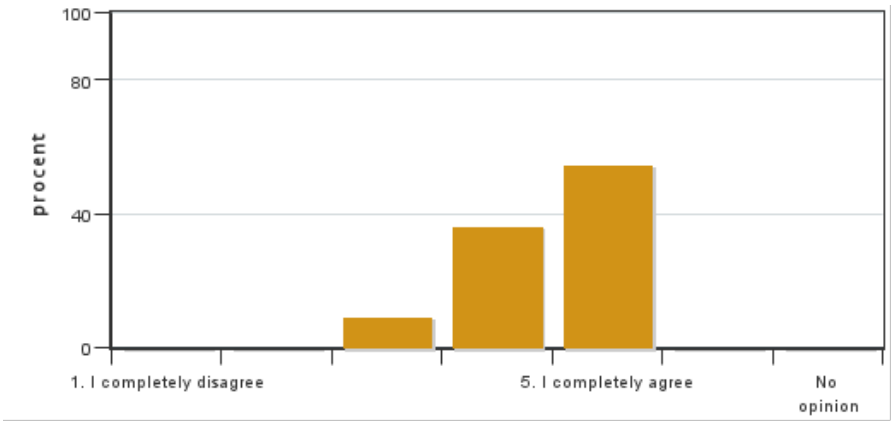


Answers: 11
Medel: 4,5
Median: 5

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

No opinion: 0

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

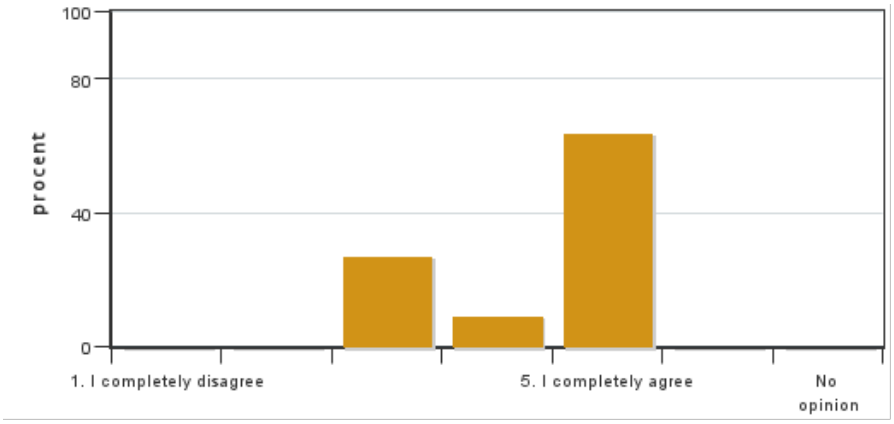


Answers: 11
Medel: 4,5
Median: 5

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

No opinion: 0

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

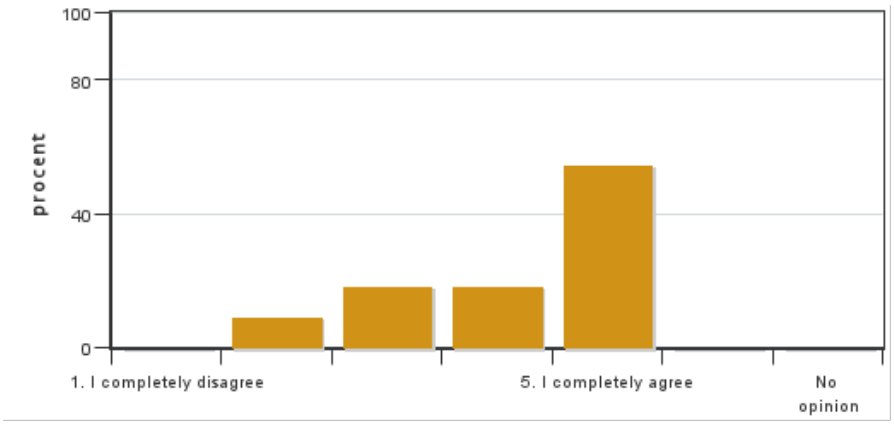


Answers: 11
Medel: 4,4
Median: 5

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

No opinion: 0

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

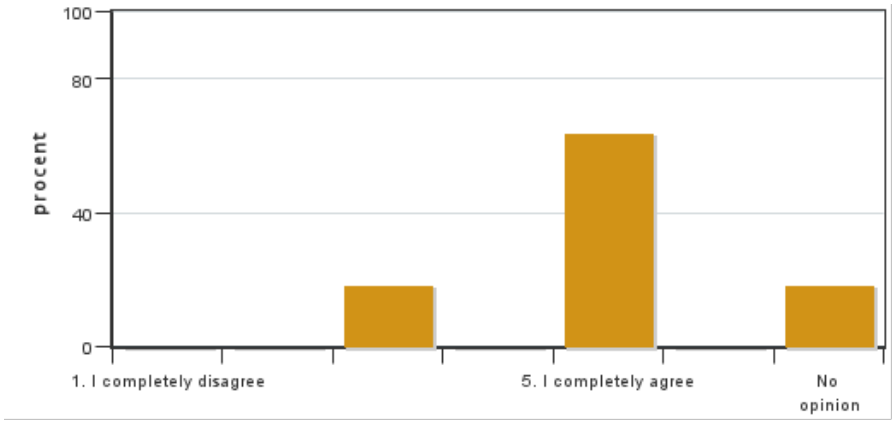


Answers: 11
Medel: 4,2
Median: 5

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

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).

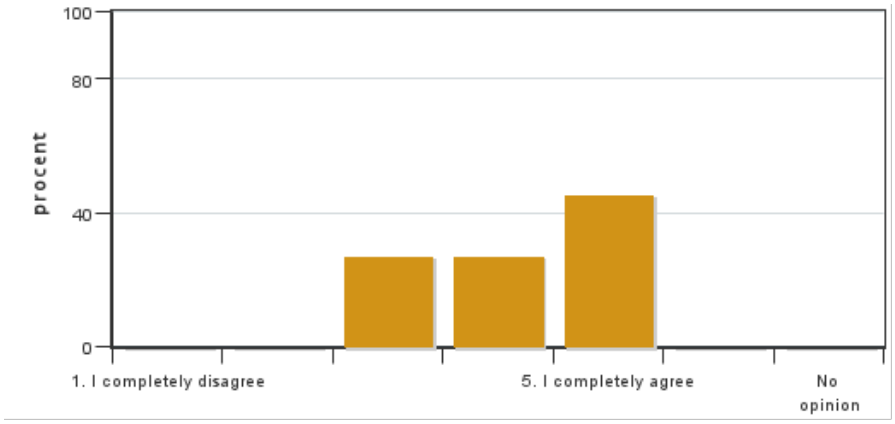


Answers: 11
Medel: 4,6
Median: 5

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

No opinion: 2

11. The course covered international perspectives.

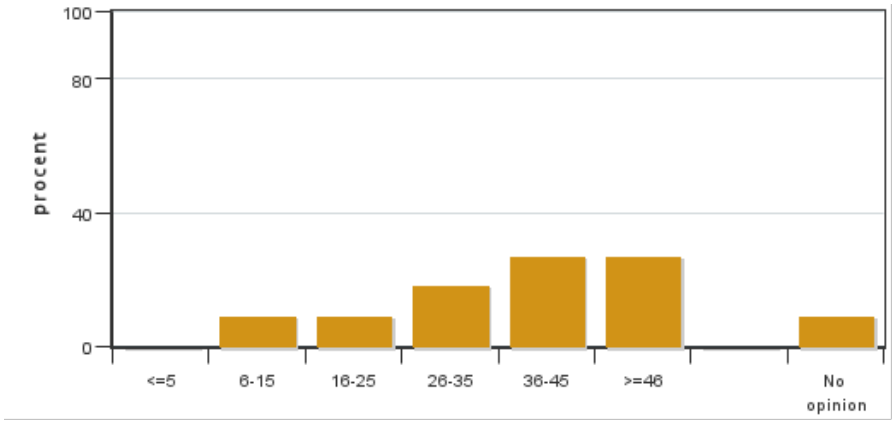


Answers: 11
Medel: 4,2
Median: 4

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

No opinion: 0

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

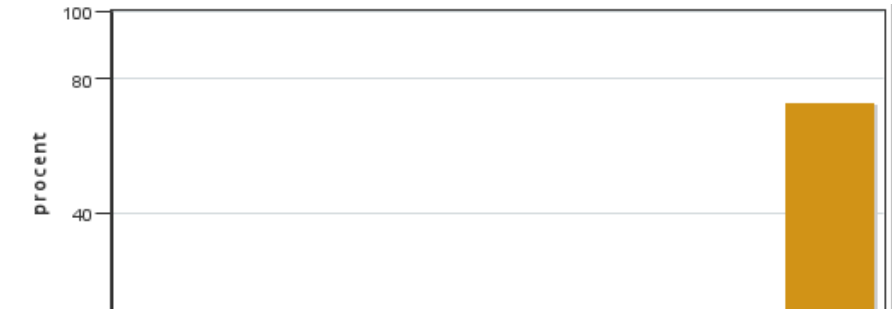


Answers: 11
Medel: 34,8
Median: 36-45

≤5: 0
6-15: 1
16-25: 1
26-35: 2
36-45: 3
≥46: 3

No opinion: 1

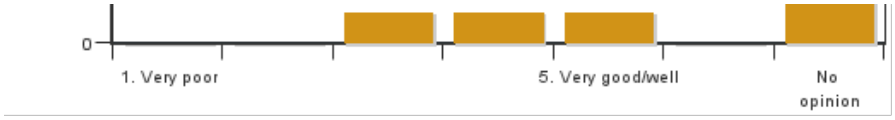
13. If relevant, what is your overall experience of participating in all or part of your course online?



Answers: 11
Medel: 4,0
Median: 4

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

No opinion: 8



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

Course leaders comments

Evaluation comments for BI1103

The BI1103 course is a Master's level course introducing advanced concepts in plant genetics and plant breeding. This year, 21 students registered for the courses, of which about 33% came from the agricultural program and the remaining students from the plant biology sustainable production program. The course involved lectures, in-class exercises, a literature project, computer labs and a laboratory practical. Most of the lectures and seminars(>90 %) occurred on campus. Students learning was evaluated through two written exams (5hp), a literature report (5hp) and a lab report (5hp).

Changes in the course compared to previous years.

Although the course structure and contents were very similar to previous years, the students' feedback was also taken into account to improve the course quality. Based on previous student's recommendations:

- The content of the laboratory practical was modified; we included an initiation to basic computing software in genetics that we later used in the computer lab. The content of the practicals was also modified to provide a more logical flow throughout the experiments. We also change the organization to ensure a better connection between theoretical learning and practical work. The aim was to directly apply the main concepts learnt in class. Additional background and information were provided during the practical to help the students visualizing the connection between theory and practicals.
- We also extended the introductory lecture to include a reminder of the basic genetic concepts required to follow the course and better illustrate the connection between the topics addressed during the course. Video links, refreshing the necessary prior knowledge, were also provided to the students.
- The plant genomics content was reduced to focus on its application to plant breeding. This was done to make the lecture more accessible (by reducing the amount of information given per lecture) and introduce recent advances in this topic.
- We increased the number of in-class exercise sessions in many lectures/topics to ensure the main concepts were understood.
- We had new teachers on the course and on the lab practicals.

The students evaluated the course by answering two questionaries, one at half-time and another one at the end of the course period.

Half-time evaluation:

Thirteen students out of 21 students answered the half-time course evaluation.

Globally, the students' comments were positive. They considered the course accessible, globally well-organized. The students appreciated the course content, lab practicals and the balance between theory and exercise. They nevertheless found that the schedule was a bit heavy in some weeks (notably, one week had too many project presentations). They noted that some of the lectures and associated handouts could be better organized and more clearly present the learning objectives. To improve the course, the students suggested to:

- Provide additional background at the beginning of the laboratory practical, including clearer instructions on preparing the lab report.
- Avoid having too many active learning events whithin the same weeks. Replacing some of these activities with lectures.
- Improve the quality of the handout in order to facilitate learning. Ensure that enough background information is given at each lecture.

These comments were passed on to all teachers in the course. We improved the schedule as much as possible and considered these remarks to further improve the lab practicals. Additional information about the practical aims and

report was given to the students at the course mid-term.

Final evaluation

Unfortunately, only eleven students out of 21 answered the final evaluation questionnaire giving a response rate of about 50 %, which is similar to the response rate obtained in the previous years but could still be improved.

The overall impression was also positive (median 4.0 / 5 score), which is consistent with the previous year (4.0, respectively).

Based on the student comments:

The course seems accessible to most students: Questions 2, 5 and 6 obtained similar scores to last year. The students appreciated the simplification of some of the introductory lectures, changes in the content of the practicals, and additional exercise sessions. In particular, the new lab practical content helped the students to conceptualize the theory learnt in class. Few students thought, however, that they could have benefited from additional background genetic knowledge at the beginning of the course (Question 3 received only 3.6 on average).

The course content was globally appreciated (questions 2, 9 and 11 had on average 4.2), the information about the course was easily accessible (Question 4 received 4 on average), and the teaching environment was considered pleasant (Question 6, 7 and 10 all receive above 4.5 on average). The students appreciated that the practicals covered a large extent of the theory discussed during the lectures.

The examination was in line with the concepts learned in class. Question 8 scored 4.4, which is in slight improvement compared to previous years. This was likely helped by the additional exercise and discussion sessions.

The students also had a few suggestions to improve the course. Those included:

- Limit the overlap between the topic of different students' projects
- An overview of the lab practical and its aims should be given at the start of the course
- To improve the mentoring during the literature projects.
- Provide more structured lecture handouts and limit the study material to facilitate learning.
- Try to keep the start time of the lectures consistent throughout the schedule.

Course leader's comments

There have been a few changes in the content and the teacher's involvement in the course this year. This year students' evaluations suggest that some of these changes have benefited the course teaching quality. I felt the course provided a positive learning environment and stimulated student interactions. The lab better aligned with the theoretical content, which the students appreciated. However, the practical presentation and the organization wet labs could still be improved. We increased or created new exercise sessions for several lectures. Globally, the students seemed to appreciate these sessions, which also resulted in a higher success rate at the final examinations. The overall impression of the course was good, although it received a slightly lower average score than last year. This could reflect the facts that only a few students answer the evaluation form and/or several teachers give their lecture/practical for the first time.

The students provided useful feedback to improve this course's organization and teaching quality. Based on these recommendations, I plan to:

- Harmonize the lectures' starting time throughout the course schedule
- Consider reducing the literature materials and improving the clarity of the lecture handouts.
- Limiting the number of assignments per week and limiting the redundancy between students' assignment topics.
- Consider converting some of the assignments into formal lectures.
- Include more introductory information about the practicals, their aims, and learning objectives.
- Improve the organization of the wet labs.
- Increase the number of question&answers sessions dedicated to the literature project, thereby providing additional mentoring for this assignment.

Adrien Sicard

Student representatives comments

Polls results:

Among the polls, students were most happy with:

- Gender and equality aspect (4,6/5)
- Social learning environment (4,5/5)
- Physical learning environment (4,5/5)
- Examinations (4,4/5)

Among the polls, students were least happy with:

- The literature project (3,3/5)

Synthesis of the student comments:

1. Lectures

In general, the lectures were appreciated by the students. They were thought relevant, interesting and well done by most students.

Students spent in average 34,8hours per week on the course. The course schedule having free-days was appreciated by students, who could organize themselves. Futhermore, this allowed students in Stockholm to not have to travel to Uppsala everyday. Having the possibility to follow courses on zoom was also a good idea for them.

1. Laboratories

The laboratories were greatly appreciated by most students. They were said to greatly overlap and deepen the contents of the course.

However, some other student felt that they were a bit messy and dis-organized. This feeling might be have been due to the DNA extraction not working, which is of course not the teacher's fault.

1. Literature project

The literature project was the part least appreciated by the students. Comments point that the ability to choose our own subjects was great, but it did provoke some stress for students with less genetic background.

One comment suggests to have one “day-to-day” handler that could answer questions. This would indeed be great for students, but would ask a lot of time for the professors. My personal opinion would be to have more informal Q&A sessions for students that have questions, or point that students can ask questions and get information outside of the two formal hand-in of the reports.

Being able to hand in a preliminary version and get feedback on it was highly appreciated by students.

1. Student presentations

The presentations on the literature projects was in general greatly appreciated by students. They were attentive, and having a student opponent is a great idea favoring student interactions.

Considering the Seed certification presentations, students felt that each group presenting the certification of one specific crop was redundant, and resulted in very similar presentations. One comment suggest to, instead, let each group focus and present one specific aspect of the seed certification process for a given crop, which could help students get more involved in the other students presentations.

Third, the breeding methods presentations was in overall not appreciated by students. They felt that a classical lecture would have been more straightforward and easy to understand. In fact, a recap of all methods was asked by the class after all student presentations.

1. Teaching methods & Professors

In overall, students were very happy with the professors and how they teached. One comment points the undeserved bad behaviour of students toward Martha, the teacher helming the breeding methods course. This most likely was due to the breeding method presentation, which was discussed above.

1. Exams

Students were very happy with examinations. They were thought fair and representative of what was done in courses, while allowing room for critical thinking.

1. Course organization

Confusing to have classes start sometimes at 09:00 and sometimes at 09:15.

The organizations of the canvas page was thought confusing at first

1. General comments

Both comments on prior knowledge point a lack of pre-requisites. Additional learning literature or Q&A sessions about the course prior knowledge might help the needing students.