

**Course Evaluation Form
BB2450 The Cell Factory
2019**

1. Compared with other courses in your degree program, how much of the material presented in the course was new to you?

Quantity of new material (mark one box)										
0% (nothing new)	10%	20%	30%	40%	50%	60%	70%	80%	90%	100% (everything new)
	1			3		4	5		1	

(Additional comments? Continue on back of this sheet if necessary.)

Our comments:

Most of students think content are new (10/14) compared to other course within the degree program. But 4/14 disagree. One student thinks only 10% of content is new. Based on previous experiences the BB2450, there are approximately 25% student from exchange program or from different departments without prior knowledge of the course content, therefore it is required to revisit some of the fundamental knowledge before continue to higher level. To address this issue and to follow up, we will make following changes: 1) survey in class of their knowledge levels, and 2) learning materials will be provided so the students will have to study fundamental metabolic pathways in their own time before coming to lectures.

2. How challenging was the course?

Difficulty level (mark one box)									
1 (too easy)	2	3	4	5	6	7	8	9	10 (too difficult)
			3	3	3	2	2	1	

(Additional comments?)

Specially when we had to prepare a presentation from one day to another

Not really difficult, but really a lot (esp. Veronique, without special remarks of what is important)

The course content was easy, but the exam is difficult

Our comments:

There is mixed messages, from very difficult to easy. As mentioned, we will survey the knowledge level at the start of the course, and to provide more of relevant and advanced methodologies and technologies been developed in recent years.

3. How would you rate the course overall?

Overall course quality (mark one box)									
1 (terrible)	2	3	4	5	6	7	8	9	10 (excellent)
					4	6	3		1

(Additional comments?)

Most of the teachers cared a lot of us and our issues

Our comments:

Students 14/14 rated the course moderate to excellent. However, there is still further work to do. Many students mentioned the problems of too many presentations, laboratory issues and lab assignment. We will make some changes in 2020, including extension of laboratory hours, reduce the presentations, and be more clarify in the information, and better communication to the students.

4. Compared with other courses you have taken *at KTH* (or other Universities), how would you rank the course?

Quality ranking (mark one box)								
Bottom 10%	Bottom 20%	Bottom 30%	Bottom 40%	Average	Top 40%	Top 30%	Top 20%	Top 10%
				4	3	5	2	

(Additional comments?)

Less student presentation and better organization of relevant content would lead to top 10%

Too many presentations

Our comments:

Most students consider the course has top quality compared to course taken at KTH or other universities. However they find it to be too extensive. To improve for next year's course we will extend the time for the laboratory and reduce the presentation.

5. Compared with other courses you have taken *at the CBH school*, how would you rank the course?

Quality ranking (mark one box)								
Bottom 10%	Bottom 20%	Bottom 30%	Bottom 40%	Average	Top 40%	Top 30%	Top 20%	Top 10%
				6	1	2	2	

(Additional comments?)

Our comments:

Most students consider the course has moderate to top quality compared to the courses within CBH school. Indeed, as addressed we will improve the course every year, to improve the quality of teaching annually.

6. What parts of the course did you like most, and why?

The lectures were funny (mostly) and you learned stuff

The various applications in the field, as it provides a good view of how biotechnology is getting integrated into the industries.

Seeing applications in the real world and how it works.

Nothing in particular, everything was quite good

Study for the exams was really fun because the information is at a stimulating level. Not too hard and not too easy.

I like the lectures and that we had different teachers.

I learned a lot on the lectures and I think it was interesting content that is essential to after graduation actually useful.

I like the presentation part (not the one we had to do in one class, the group was too big for that). Also I think it was Thomas's class, we only had 3 slides per presentation which was enough.

The first module because the lectures were entertaining.

I like Yves and Lauren's part since this were more interesting than mammalian cell part.

The content and especially array of cell lines.

The modulation exam.

The tutorial sessions, because you could ask the teachers directly and we got some kind of structure

Module 3 and 4

Discussion, gave time to think and ready use the knowledge we had.

The division in modules made it easier to follow the content.

The activities helped us learn a lot.

Summary

Pros:

- Useful course content that linked to the real-world problem.
- Entertaining and fun
- Very helpful tutorials and activities

Our comments:

We are very happy that our hard work as teachers were really appreciated by the students.

7. What parts of the course did you like least, and why?

The presentation parts were a bit stressful at time to time. Didn't feel I like learned anything from them.

The lab part, it was very unclear even under the lab week.

The presentation. I got like giving presentations, but I believe 1-2 presentations in the course would've been better

Things that were a bit too basic, that felt like the belonged to the bachelor Questions like 'What are biofuels?' feels a bit too easy

The lab course was disappointing. I wish we could do more in it.

Maybe too many presentations and the tutorial was stressful you got no time for prep and was supposed to stand in front of everybody.

I was very disappointed in the lab course, we didn't do anything and it was so badly informed about it. Make it a real lab, or take it away. I think Veronique was very rude and not helpful at all. E.g. she said that she would be present when we worked on her project then she didn't show, didn't answer on emails or emailed herself. It is also not OK to change her on fault in her project code so close to the end so we had to redo everything on short notice. She should only have class or only her project and be helpful.

The mammalian cell lectures because were too technical (a lot of parameters which doesn't make any sense to learn, and lectures were quite boring.

Mammalian cells (section 4)

The LAB

The presentations. There were too many of them, and in the end no one really cared about them anymore.

The assignment and the lab course weren't so good organized. We got not enough/wrong information, and we did unnecessary work, which was not our fault.

Module 2, it felt rushed and unclear. I was unsure of what to study for the exam.

Laboratory exercise. Did not get clear information and got no new knowledge.

Laboratory report. Did not get clear information and it was difficult to understand what we were supposed to do.

The laboratory work as it was very confusing.

Summary

Cons:

- Laboratory course and exercise could be better
- Lacked communication

Our comments:

This was the first time we have introduced the laboratory component in BB2450. Due to limited spaces the class was divided into smaller groups and time of experimentation limited. We have increased the laboratory hours from 12 hours to 32 hours. So, the responsible teacher will have more time and flexibility to organize a laboratory course. The lab assignment and opposition report are the vital part of the students training in critical thinking and writing and cannot be removed to fully encompass these goals.

8. What changes/improvements would you suggest?

The lab part has to be ready in advance so the student know what is expected from them.

More structure on Canvas on the different modules.

None

Need to be better communication.

Lab project could be more interesting if it was a bigger project that you got to work with over a longer time.

Better lab course.

Some things on the exam were not mentioned in any slides.

The lab course could be super interesting but it was way too short. The report assignment was just weird.

Have either a real lab course, if it is too many students do two weeks. The teacher responsible should have maybe one intro lectures and then on the labs. If you can't do a lab course have only the project, not both. And give it out earlier or let them know earlier that it is going to happen.

Less journal articles and more projects related to a specific company.

The laboratory was the worst in this course. It seems to be something new which I can understand but there was a lot of lack of information and confusing which was very bad.

Better organization of relevant content.

Less presentation. People put more effort into it.

Better organization of lab and the assignment.

Less slides/information, but deeper into one topic.

The modules from the intermediate exam not again in the main exam ☺.

Not so many presentations. Most people didn't engage in their own presentations, and don't listen to the other groups.

Remove lab exercise and just have the report.

Have in mind that other classes also have exercises and sometimes it is difficult to prepare presentations, specially if you don't have this information in the beginning.

Change in the lab assignment.

Summary

Cons:

- Too little time for presentation preparation
- Laboratory and lab assignment could be better
- Lacked communication

Our comments:

Most students consider the presentation as a valuable tool learn; however, they find it to be too extensive. They also found the time constraint to give a presentation on the within class hours was too short. We agree is this a case and will reduce the presentation while provide research articles 1-2 weeks in advance.

Again, as mentioned previously the students are generally unhappy with the laboratory class. We will increase the laboratory hours from 12 hours to 32 hours for 2020, so that responsible teacher will have more time and flexibility to organize a laboratory course. The lab assignment and opposition report are the vital part of the students training in critical thinking and writing and cannot be removed to fully encompass these goals.

9. Would you recommend this course to another student? Why or why not?

Yes, good to know these things if you are in biotech!

Yes. It provides a good introduction to different cell factories.

Yes, it focuses on areas that are important for our future jobs.

Yes, it binds together many earlier courses.

I would because I thought it was interesting and I liked the teachers. I chose it because I thought it would be useful when working and also for inspiration.

Yes because I think that it is something important and interesting to learn.

Sure! Yves has been so helpful for most part. He answered asap in few minutes which was amazing. He gave exact information we needed to know. Thank you! I like also how you organize the course that the student learn from each other by doing presentations which was effective and also ore practical to do presentations several times. Thumb up!

Always. Because it's the important course of biotechnology.

Yes I would, because it was REALLY interesting.

Yes, I learned a lot!

Yes, in the end I learn a lot of interesting ways to use different cells.

Yes, definitely. It is very important if we want to continue in an industrial setting.

Our comments:

We are very happy that essentially all students recommended the course. Regarding the issue with laboratory and assignment, too much presentation, we will clarify the content early in the year, and giving them more time for the labs, and less presentation.

Our final comments and conclusions, and further plans:

Most of student are very positive about the course, except the newly developed laboratory. We will continue to make changes to further improve the laboratory course, which included more detailed information during the start of the course on laboratory and assignment. We will continue to stress during the course for better communication between student and teachers.

Many students find the limited time for lab and assignment, and we will have reformat the timetable allowing more time in the laboratory class and we will continue to stress that the laboratory and assignment are needed as it is part of the ILOs and required skills for MSc level.

For next year's course evaluation, we will also consider reformulating some questions to allow us to further analyze different parts of the course in more detail.