

<b>Course Code:</b> 1BI037	<b>Course Title:</b> Cell, Stem Cell and Developmental Biology	<b>Credits:</b> 12 HP
<b>Semester:</b> HT2020	<b>Period:</b> Nov 12 <sup>th</sup> 2020 to Jan 15 <sup>th</sup> 2021	

<b>Course director:</b> Matthew Kirkham (MK)	<b>Examiner:</b> Matthew Kirkham
<b>Main lab teachers:</b> -Lab 1: Matthew Kirkham -Lab 2: Helder Andre -Lab 3: Matthew Kirkham	<b>Main CCT teachers:</b> Part 1: KIB staff Part 2: Anna Kouznetsova and MK Part 3: Anna M Borgström (Writing support)

<b>Number of Students</b>	<b>Number who have not completed (after 1st re exam)</b>	<b>Number passed by the end of the course (Jan 15<sup>th</sup> 2020)</b>
51	Feb 23 <sup>th</sup> re exam	45 (34VG)

### Conclusions From previous course evaluations HT 2019-2020:

The course was a success. Students thought that the lectures and Labs were very good and all the teachers they encountered were excellent. This is reflected in the course survey with a high approval rating for the course. The attendance of the lectures was generally good and there was a high pass rate of the exam. An additional positive note was the successful implementation of Canvas for the course webpages, this was mainly due to the hard work of Linda Lindell. Canvas worked well during the course and was a big improvement.

The improvements made to the CCT part of the course from last year were general well received. Especially the presentation workshop in CCT part 3. This received a lot of positive feedback when I talked to the students after the teaching moment. There are some slight improvements that can still be made from the student's comments.

### Improvements implemented for HT 2020-2021

Plan improvements from 2019-2020 were somewhat limited due to the need to restructure and adapt the course to the situation that arose due to Covid-19 pandemic.

#### *Restructuring due to Covid-19 pandemic.*

- Hybrid lectures. The lectures were given on campus to a smaller group of students and streamed online over Zoom simultaneously.
- Discussions moved online and changed to work with online format. Reduced the number of question but increase their complexity so that there were more suitable for small group discussion (4 students), created during breakout rooms in Zoom. Also Introduced more discussions based around research papers.
- Changed the format of canvas pages to group all the self-study questions, study guides and lecture files on a subject on one page. To try and make it easier to study at home. Also added an addition online session not in the original schedule after the students requested it. This was so that we could discuss answers to the self-study questions.
- In general, the course labs were adapted to limit the number of students present at any one time and to reduce crowding around key equipment.
  - Increase online preparation before the labs to decrease time in the lab. This was done through online lab safety quiz and the use of lab simulations (Labster).

- Staggering the start times of the students
- Some components of the labs were replaced with short teacher led demonstrations
- The communication and critical thinking component (CCT) of the course was moved almost completely online and in general, this worked without many alterations. The only major adaptation was to move the final exhibition to a digital format.

*Plan changes from previous course evaluation.*

- The content of the labs was reviewed.
  - This resulted in new course labs: Cell transfection and transformation lab 1 and cell migration and growth lab 2.
  - Introduction of lab simulations
  - Online lab safety quiz
  - Improvements in the lab report format to try and stimulate scientific writing and a line more with proposed assessment criteria that might be introduced by the program.
- Changed CCT part 1 to remove any repetitive elements.
- More of the lecturers used mentimeter and ask more questions in their lectures compared to previous years.
- Increased the time spent of explaining the pedagogic theory and course structure in the introduction lectures to try and make it clearer how the discussions are link to the lectures.

## Feedback for course HT 2020-2021

### Most relevant feedback from Student reps

In general, the student representatives were extremely positive about the course. They highlighted that they really appreciated the hybrid lectures and the mentimeter sessions that were used to prepare for the exams and discuss both the midterm and final exam answers (exam debriefing). They also highlighted the fact that in the summer it would be highly appreciated if the cancelled study visit to the BIC could be rearranged.

The student representatives commented that in general the online teaching work well, but thought that a few teachers could have used a little bit more time to prepare with the new technology.

The student representatives also gave feedback on some minor things that could be improved for next year.

-Lab2: It was the first year that this lab was run. The students recommend more optimization of the protocol so that results obtained were more reproducible across the groups.

-Lectures: They highlighted the fact some lecturers had Swedish words in their presentations, and they would ask the lecturers to double check their slides for next year.

- Some topics on the course are not covered in depth in the course book, thus the main study material on these subjects comes from the lectures. The student representatives

request that the lectures add more text on slides that only have images or add additional summary slides after the lecture has finished. The summary slides could include additional notes, page references or other references.

- The student representatives asked that there was more time set aside to discuss the self-study questions with teachers.
- They also commented on the fact that the book is difficult to use, and quite hard to read.

#### Things to keep from the modifications due to the pandemic

The student representatives would recommend that the course keeps the hybrid lectures if possible. They also said that mentimeter sessions could also be held online. If there was going to be online teaching next year it should be very interactive.

#### Specific discussion on Labster

The student representatives generally like the simulations. But they were very mixed response on how much they gained from them. Some thought it was a fun alternative to present information in a different format while others thought that it was a little time consuming for what it gave.

#### Most relevant responses for student online survey on strengths of the course

- I appreciate that despite the covid 19 situation we were still able to have hybrid teaching and depending on the situation everything was being decided during the course. I liked the variety of topics, methods, and modules throughout the whole course. I liked that groups were changing over the course and we had some flexibility when it comes to choosing our lab partner etc. Mentimeter feedback was super helpful. The thing I would like to put the emphasis on is the contact between students and the course leader. It was very friendly and supportive and understanding but also full of respect in my eyes.
- Great lecturers (good communicators) and coordination between the lectures in spite of having different people holding them.  
The CCT part was great, both to introduce us to scientific papers but also to point out that there is a gap between laymen and experts in how info can be tackled.  
Also really good that the lectures were mostly in the morning, so one could structure a regular study schedule.  
I personally learnt a lot from the labs, both because the protocols were properly introduced but also because the lab teachers took the time to explain and asked relevant questions to make us understand.
- The course supervisor was very open to suggestions and conversation, most lecturers were the same. Teachers seemed motivated to teach and made an effort to make lectures interesting, engaging, and inspiring. The course was divided into good sized chunks, the flow seemed logical, and the workload was enough to be able to actually learn without being hampered by the mountains of work to be done. I found the course easy to follow and fun, and I also learned a lot and felt like I got a clearer picture of the types of environments we could work in in the future. I gained a bit of professional confidence too, thanks to the teachers, assignments, and the learning environments used.

## Most relevant responses for student online survey on improvements

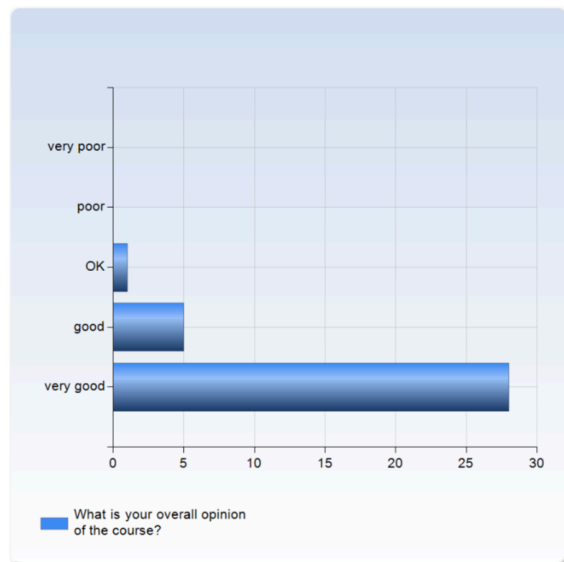
- some of the slides didn't have a lot of information, only pictures it would be nice if they had more information in order to make it easier for us
- I have difficulty listening during lectures, so the PowerPoint slides are very important to me. Unfortunately, some of them had little to no description on them and were very hard to work with.
- In my opinion lectures should try to prepare a little more, as they didn't keep to their time limit and the slides were difficult to understand. This especially includes slides that had significant parts in Swedish and hence made it impossible to follow.
- It would be helpful to spend a couple of words at the beginning of the course on how to use the book, how to select info from that in relation to the lectures
- A more detailed study guide for Albert's 6e might be useful. I often find myself going through pages after pages trying to find the relevant information for exams and corresponding information from PPTs.
- It would have been nice to go over the self-study questions in a group (zoom)

## Summary of students' student online survey

In general, 82% of the students thought the course was very good (see diagram below), and 97% of the students (mean score of 4.4 out of 5) felt to a large extent or very large extent they developed valuable expertise/skills during the course. Furthermore, most of the students felt to a large extent or very large extent that the course structure is good (mean score 4.4 out of 5), the workload was reasonable (mean score 4.4 out of 5) and examination was relevant (mean score 4.5 out of 5). The answer frequency was 67%.

### What is your overall opinion of the course?

What is your overall opinion of the course?	Number of Responses
very poor	0 (0.0%)
poor	0 (0.0%)
OK	1 (2.9%)
good	5 (14.7%)
very good	28 (82.4%)
Total	34 (100.0%)



	Mean	Standard Deviation	Coefficient of Variation	Min	Lower Quartile	Median	Upper Quartile	Max
What is your overall opinion of the course?	4.8	0.5	10.0 %	3.0	5.0	5.0	5.0	5.0

## Course director summary of Course

The course was a success. Students thought that the lectures and Labs were very good and all the teachers they encountered were excellent. This is reflected in the course survey with a high approval rating for the course. The attendance of the lectures was generally very good and there was a high pass rate of the exam.

The lectures were given in a hybrid format, on campus to a smaller group of students and streamed online over Zoom simultaneously. Though this was technically challenging, and difficult to organise it work well. This gave the student the freedom to guide their own studies depending on their home environment and how safe the student found it to commute. In general, all lectures had a higher attendance than in previous years with 70-90% of the students being present either in campus or online.

In general, the course was very different from previous years and probably will be very different from future years. Though the circumstances were very challenging the students and teachers adapted well and actively participated in the course to make it a rewarding experience for everybody.

## Aims for improves on new course

- Review the textbook used on the course.
- Review the Link/flow between the slides, textbook, self-study questions and the study guide.
- Introduce the Team passed learning (TBL) element: Cell biology methods and experimental design.
- Review the assessment rubric for the written assignments.
- Continue to encourage the lectures to ask more question to be more interactive. Also, to include experimental examples of theory when appropriate.
- If the content of the lecture is poorly covered in the textbook. The lecturers should add glossary slides, links where the information is reviewed or slides with more text explanations linked to the figures at the end of their lecture.
- Review the self-study questions and how feedback is given to the students on these questions.

## Minor

- Review the DNA slides and course content, study guide, and edit canvas pages accordingly
- Review Stem cell content and study guide, and edit canvas pages accordingly
- Review prokaryotic study guide and lecture content and edit canvas pages accordingly
- Review the lab protocols.