Course Code: 1BI037	**Course Title:** Cell, Stem Cell and Developmental Biology	**Credits:** 12 HP
Semester: HT2022	**Period:** Nov 14th 2022 to Jan 13th 2023	

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

Number of Students	**Number who have not completed (after 1st re exam)**	**Number passed by the end of the course** (Jan 13th 2023)
51	5	41 (26VG)

Conclusions From previous course evaluations HT 2021-2022:

The course was a success. Students thought that the lectures and Labs were 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 very high pass rate of the exam.

There were some new elements added to the course this year mostly related to the practical training and the theory behind different experimental approaches. In general, these worked well, especially the TBL base test: on methods in cell biology, the TBL application phase: experimental design, and the use of Labster simulation to complement the theory. However, there was a problem for some of the students to understand the structure of the TBL module in terms of what was required to be completed when. I think as the students must keep track already of three course elements (CCT, course Labs and subject theory) adding a fourth was too much. A review of the TBL elements will be conducted to see how a more integrated module combining the course labs and all relevant theory might be created. New elements were also added to the labs. In general, they worked well but more optimisation is required. In lab 1 second day there was a problem with viewing the samples on the microscopes. Lab2 some of the new labelling protocols for cells used resulted in big variations of results across student groups.

Sadly, covid pandemic again had an impact on the course. In general, not as big as the previous year, but recommendations on teaching activities changed rapidly during the course, resulting in some elements being moved online or given in a hybrid manner. The rapid changes resulted in difficulties in some of the course moments as it was tough to adapt completely in the short time frame.

Improvements implemented for HT 2022-2023

Plan changes from previous course evaluation.

- Integrated the elements of the Team based learning (TBL) module with the lab theory and practical moments into one module rather that introduce them as two separate things. Did not remove any elements just renamed them

    - Canvas pages were organised into chronological order with simple titles (before lab1, before lab 2)
    - New canvas pages that integrated different digital resources and the TBL elements

- The content of the labs was updated.
    - New elements add to Cell migration lab 2
        - Removed the antibody labelling against cell proliferation because students had problems to get it to work
        - Change the protocol of lab 2 to add cell splitting
    - Discussion of Lab3 moved to a separate occasion added feedback elements to do with the course lab report

- Improved routines related to monitoring and servicing lab equipment.
    - Acquired a new camera for the one of the course lab microscopies
    - This time all the microscopes work

- Added elements to do with Feedback in the introduction lecture

- Changed the content related to DNA and prokaryotic biology.
    - Remove the prokaryotic lectures and interacted the most relevant information into the DNA lectures
    - Add extra DNA discussion/seminar and removed one of the DNA lectures

- Suspended a planned review of the textbook used on the course as the new edition came out quick late in the year.

Feedback for course HT 2022-2023

Most relevant feedback from Student reps

The student reps feedback was positive about the course in general. They said that the students enjoyed the fun and relaxed the atmosphere. Also, that the content of the course was appropriate, and the lectures were generally excellent. The student reps specially mentioned that the class greatly appreciated the flexibility to create hybrid teaching moments when there was extreme snow fall and students found it very difficult to get to class. One thing the students rep thought could have been improve was the information about the lab report. Specially what was required in terms of figure format, and writing style.

Most relevant responses for student online survey on improvements

- The purpose of the lab report and how it should be done could have been better explained since it was very unclear what kind of data was supposed to be included which created lots of confusion.

- Some teachers used textbook photos in their slides and did not mention the figure numbers. It was a nightmare trying to find them. In the future, adding figure numbers would make a huge difference. Also seminars would be very helpful too!
- maybe have the lecture on how the lab report is supposed to be before the deadline to submit the lab report so that we don't have to revise it later on
- The break was not really a break as we had to study for the exam. It would be my suggestion to move all the CCT (or at least the presentation)to January and get the exam out of the way in December.

Summary of students' student online survey

In general, 97% of the students thought the course was very good or good (see diagram below). The survey also demonstrated that the students felt that they had developed valuable expertise /skills during the course (mean score of 4.6 out of 5) and scientific way of thinking and reasoning (mean score of 4.5 out of 5). Furthermore, most of the students felt to a large extent or very large extent that the course structure was good (mean score 4.2 out of 5), the workload was reasonable (mean score 4.5 out of 5) and examination was relevant (mean score 4.5 out of 5). The answer frequency was 63%.

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 (3.1%)
good	4 (12.5%)
very good	27 (84.4%)
Total	32 (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	9.8 %	3.0	5.0	5.0	5.0	5.0

We also had specific questions on the use of Lab simulations on the course. The students thought that the Labster simulations were relevant for the intended learning outcomes of this course. Generally the students were positive about the use of Labster.

Course director summary of Course

The course was a success. Students thought that the lectures and Labs were 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 very high pass rate of the exam.

The new version of a more integrated approach to Laboratory Practicals, 4 hp worked well. The students got a much better understanding on experimental design and methods to study RNA and protein levels within the cell. Elements of the TBL module that worked in the

HT21 course were integrated with a new lecture on methods, canvas pages and Labster (virtual labs). The canvas structure related to this part of the course was also changed to be more chronological. This was much better with less confusion among the students.

Another new part of the course was two new feedback elements. One was a menti quiz in the introduction to the course to get students thinking about feedback. The second was a seminar on scientific writing as part of the discussion in lab 3. The menti quiz work well but the seminar did not really help the students improve their lab report or their understanding on scientific writing. I think they felt it was more like instructions on how they should written their lab reports and should come before they finished writing. Rather than an opportunity to reflect and improve their text.

The was a large drop out in the no mandatory CCT parts of the course this year. I am not sure if it was due to how the Christmas holiday was placed. As many students wanted to leave early to get cheaper flights. Or whether the students felt that the only reason to do these elements was to gain bonus points to get a higher grade on the course. This point of this part of the course is to improving communication skills, but also it is about learning to work in a group and team building with the student body. I feel that these elements got lost, and more focus on group activity elements could be add next year.

Aims for improvements on new course

-Review the textbook used on the course and the canvas pages. A new Molecular Biology of the Cell textbook edition is coming out.

-Review assessment rubric for the written assignments and how to give feedback on the written work. Specifically, the lab report.

- Lab 2 protocol. Some of the students struggled to get results to write up.
-keep the cells on the slides

-Increase the focus on group in CCT part 2 and 3.