

Action plan based on students' feedback regarding the 2nd semester of the 2023/2024 academic year

Department:	Department of Molecular Biology
Faculty:	Faculty of Medicine
Compulsory course:	Molecular Cell Biology 2
Optional and elective courses:	Pathobiochemistry; Methods in Molecular Biology; Networks

1. Response to general evaluations

We are pleased to see that the scores obtained from over half of students of Molecular Cell Biology 2 on all items of the subject questionnaire correspond to the average scores of the faculty. A similar opinion has been communicated by our students over the past few years. We continue our efforts not only to keep up but also to improve our teaching standards in the future, incorporating the latest scientific knowledge into the syllabus. In order to better coordinate the lecture and the laboratory program, we have moved the laboratory session on genotyping a polymorphism of a taste receptor to the first semester, immediately after the corresponding lecture.

2. Response to specific comments on the compulsory subject

We are grateful for your numerous positive comments acknowledging the well-organized teaching practice of the department and appreciating the preparedness and proficiency of some lecturers and lab teachers alike ('amazing and organized lectures'; 'lectures are the best in all subjects'; 'very good experience' with lab teachers). On the other hand, the critical remarks were centered mostly around the following issues.

- a. **"The (lab) time - 3 hours is too much and we are not doing anything special. I believe that the classes should be organized like physiology, where we have a consultation about lectures and then laboratory practice. If we have a discussion for 1 hour and lab work for 2 it would be amazing."**

Since our labs differ greatly in terms of intensity of lab work, total time, incubation time, need for pipetting and centrifugation, etc., they do not allow such rigid scheduling, but our policy is to have an optimal blend of experimental work and consultation/discussion in the remaining periods.

- b. **"I wish we would learn more about applied topics like new RNA vaccines, different therapies in detail and not in just one lecture, other than spending 5-10 lectures on theoretical topics which we might never use in a medical practice."**

Our courses are part of the basic module of training with the explicit aim of providing a solid theoretical background to achieve preclinical and clinical skills. For example, the lectures on theoretical topics are necessary to understand the factors that determine the stability of mRNA and thus what makes an mRNA-based vaccine so stable and efficient to be translated into proteins in living cells. We are constantly expanding our scope of training to new diagnostic and therapeutic techniques in biotechnology. Recently, lectures on knock-out and transgenic animals and gene therapy have been added to the program, and we plan to include other cutting-edge topics.

- c. **"I think the topic list is very intimidating, and some topics included more than 1 lecture. Maybe the department should change the exam style." and "Its difficult with mcb because sometimes I need 5 papers to explain 1 topic. Also maybe 2 midterms is better than 1 big one."**

The comprehensive exam covers 71 theoretical and 9 practical topics. This is not particularly high compared to other comprehensive exams in Year 2. Students are advised to use the topic list as a guide to the syllabus and not to fragment their knowledge into topic-related units. Examiners are particularly interested in the interrelationships between different aspects of cellular and molecular biology and may ask broad questions in the examination.

Holding two midterm theoretical examinations would be a major challenge in terms of recruiting staff and finding available rooms. In addition, the compulsory midterms cannot be organized outside class time, and we would not want to sacrifice another lab for assessment.

- d. **“... in the practice class, the teacher EM05, she needs more idea about caring students. She has inappropriate attitude to students. It was hard to complaint to her. Anyway she needs some advices.”**

Feedback on the personal attitudes and skills of our staff is highly appreciated. A specific questionnaire is provided for the evaluation of the lab teacher, and we encourage you to provide more specific comments on the exact nature of the problem. Students are asked to always report to the teaching secretary if they experience any discomfort or tension during lab hours that they cannot resolve with the lab teacher. The department will make every effort to help resolve such problems. Cooperation, trust, a relaxed atmosphere and mutual respect are the keys to effective lab work, which is in the common interest of both parties.

- e. **“Sometimes, the lectures covered information that was unnecessary for the midterms or the final exams, which could stress students since we are never sure about how much content and how deep we have to know a particular topic as we prepare for exams. The theoretical midterm examiner sometimes asked about topics outside our scope or range of topic, which felt unfair for some students.”**

As mentioned in an earlier paragraph, the study material corresponds to what is covered in lectures and labs and contained in the relevant chapters of the official textbook for the course. The topic list shows what students need to know for the exams, but due to its limited volume, it cannot point out all the details and keywords of the material. The lectures provide the most reliable guidance on what to know for the exam.

- f. **“Can you please teach the subjects by order and not jump between them? It is highly confusing and this subject is already hard”**

The didactics of the course is based on more than half a century of teaching experience in the department and is consistent with the practice of other renowned medical schools around the world. In the first semester, the order of lectures is determined by the flow of genetic information (DNA structure, replication and repair; transcription, post-transcription, translation, folding, modification and trafficking of proteins). It is logical that the discussion of the cell cycle precedes the discussion of the mechanisms of cell death and cancer, which is followed by the molecular biology of viruses. The transgenic and gene therapy blocks are also presented in semester 2, as they require knowledge of cell division. Finally, some integrative lectures aim at exploring higher order aspects of the proteome, including intracellular transport mechanisms and organizational stress mechanisms. Great emphasis is placed on presenting these topics in the order best suited to their understanding.

- g. **“The labs to be more organised on what we are covering and how is relevant where it can be used because sometimes students are lost”**

Our lab sessions do have important medical implications, such as the quantification of proteins in biological samples (biuret reaction), the production and purification of recombinant proteins for

therapeutic purposes (in vitro translation and affinity chromatography), pre- and postnatal genetic diagnostics (genotyping). They also develop logical thinking, critical evaluation and technical skills. Our laboratory teachers emphasize these aspects and place the laboratory in a molecular biology and medical context. They are constantly encouraged and trained to perform well in these aspects.

3. Response to specific comments on optional or elective subjects

The subjects Pathobiochemistry, Molecular Biology Research and Networks are popular with the students, as reflected by the numbers of participants and the positive evaluation scores. Some points of constructive criticism are addressed below.

- a. **“Maybe the assignment could be explained a bit better, I felt very lost in the process of composing it and didn’t feel like the instructions were clear enough, quite vague instructions for such a large assignment.” and „However, I would have much preferred a real class to attend so we could have a place to meet and talk to the professor to learn in a more efficient manner.” „Some consultations or interactions with the teaching staff would help greatly.”**

These remarks have been forwarded to the lecturer of the Networks course. The fact that instructions are not that strict and definitive implies a kind of liberty in topic selection and the way you set and work out your topic of preference within the recommended frame of 5-10 pages. Importantly, your own research in the available literature is required and greatly appreciated here.

- b. **“I think it should be a seminar. Its an elective, and no one will prioritize it to go to lectures. If it were a seminar, with a smaller group, or more than 1 group, maybe students would pay more attention and be more interested, because it is an important subject for sure.”**

In our opinion, it does not make much difference for interested students whether it is a lecture or a seminar. They always have the opportunity to ask questions after or even during the lecture. On the other hand, the lecturers of the course have a lot of teaching and research commitments and do not have enough time to hold several seminars in small groups per week, not to mention the very limited availability of seminar rooms in the EOK building.

- c. **“I only wished the recording would be posted a little bit sooner as I enjoy rewatching them at home after the physical lectures for repetition and to make sure I didnt miss important information.”**

All video recordings are posted within 24–48 hours following the presentation.

- d. **“It’d be nice if the guest lecturer showed up”**

We apologize for the incident. As the audience was informed of the cancellation shortly before the lecture, we hope that no one came to the lecture hall in vain. The invited speaker had entered the date of the lecture in his calendar incorrectly. Although to err is human, we agree that this should not happen again.

Date: 11/10/2024