



FACULTY OF SCIENCE

COURSE ANALYSIS

Date 2025-11-22

Main Teacher: Olivier Van Aken

Number of students: 44

Number of answers: 20

Grades:

U (7), G (27), VG (8)

Department of Biology
Education- Bachelor's and Master's
level

Course Analysis: “Molecular Biotechnology and Methods”, “BIOR94”, VT25

Summary of the course evaluation

The students were overall satisfied with the course, averaging on 3.1/5. Given that this as a completely new course, that is a good outcome. Less than half of the students responded, so the survey represents only a relative minority of the students. The students appreciated the wide range of activities (lectures, exercises, external speakers, labs, study visits, projects), including visits to MaxIV and the Fermentation facility at Kemicentrum. Some suggested there were too many lectures, while others said this was not the case.

The lab was perceived as very interesting and topical. It was raised that the two labs were quite different in terms of approaches, which was positive, as they learned a lot from it. Some issues were raised about the interaction with the course Lab Assistants, in that some students felt they did not get enough trust in their capabilities. It should be considered that part of this course’s lab used to be the first Master level course lab as part of BIOR79 in the autumn. By moving the course to the spring, some students felt they were monitored too closely as they already had labs on the Genetics course, now in the autumn. Several students did praise the lab assistants as being friendly and helpful.

Most students felt the level of the course was appropriate (11/20 ranked the level as 4-5/5). A common problem with this type of

course (see also previous Molekylär Metodik BIOR79) is that students come from a very wide range of backgrounds, some having studied the Bachelor Molecular biology program in Lund, and many coming from other continents with different programs. A challenge is therefore to make the level appropriate for everyone. The course is structured around more basic technologies and concepts in the beginning (which at surface level may be repetitive), and more advance methods and approaches in the second half of the course. For some that was too repetitive, while for many it was too hard (note that 16/42 students failed to pass the exam in the first sitting). Most students considered their preknowledge generally sufficient (3.8/5). The exam was considered long, but overall the examination types were rated 3.2/5. It is not an easy course, and part of its difficulty lies in the broad range of techniques that are needed to know to have a good understanding of modern biotechnology. The students liked the intermediate tests, to help them not fall behind with their studies and get some extra points for their final scores.

On average the students rated the course load as 30-40h/week, which is a normal work week, and the course load being medium-high to high. Most importantly, 60% of students rated that the course increased their knowledge with a 4-5/5. Sometimes it was noted that some items/deadlines were close to each other, and a lot was expected towards the end of the course. Some however stated that they felt the course was balanced between the different activities.

Towards the end of the course, the students presented their Project reports in a symposium spread over three days. This symposium was well appreciated as they learned presentation skills, new interesting techniques, and also class bonding.

Some students noted overlaps between lectures and teachers, such some PCR basics and techniques like CRISPR-Cas9 mutagenesis. This is hard to avoid and repetition is important, but is something to consider for the next iteration.

There were mixed feelings about the Wilson et al., course book (3,4/5), as it doesn't cover all topics from the lectures. Also the new book Molecular Biotechnology was in the end not so useful and thus not used by the students or teachers. We are aware of this, but no perfect course book exists that covers all topics here. Several students did find it helpful for many of the topics.

Overall, the exam/course outcomes were good, with only 7/44 students not passing the course by the summer re-exam, and many doing very well (8 high pass). The intermediate tests were considered a useful incentive to keep track of the content throughout the course, though the type of questions was not necessarily similar to the final exam.

Comments from the teachers team

Overall, the course went well, and most students seemed quite motivated.

Evaluation and changes made since the previous course

This was the first time the course was run, so no specific modifications were done since previous iterations.

Suggested changes for the next course

The main changes that will be implemented in the next iteration will be to make the first part of the course more interesting and challenging, especially for those that already have a good background in biotechnology. Especially Claes and Wolfgang will streamline their fundamental lectures, and include specific exercises and calculations at the end to make the students more active and stimulate them to think. Also some streamlining would need to be done to make sure there is not too much repetition on e.g. PCR and CRISPR-cas9, though these are such fundamental

techniques that it is inevitable they will reappear more than once in the course.

For the course lab, we will take more into account that it is not the first molecular lab the students have, so we plan to give them some more independence, but that also requires that they read the manuals better so that they come in to the lab knowing what to do. For Lab 2, some students had trouble getting the main concept of the lab, so the introduction will be revised to make it clearer.

For the upcoming course, we will keep the number of lectures similar (though some will be changed, especially CvW and WK). If in the next evaluation there are still too many comments about the first section of the course, we may reduce the number of the early lectures (making them more condensed), so that the more advanced parts could be more spread out.

Wolfgang Knecht will also provide written hand-outs for his lectures, so that the students will find them easier to study afterwards.

One way to motivate the students to spend time on the lab/project reports would be to give them more concrete marks, that also count towards the final grade (so they are not just pass/fail activities).

Other teachers involved in the course

Wolfgang Knecht, Allan Rasmusson, Claes von Wachenfeldt, Klas Flärdh, Zoe Fisher, Mats Ohlin, Deepak Anand, Daniel Twohig, Nelida Leiva Eriksson, Kasim Khan, Vivian Schmitt, Abraham Ontiveros-Cisneros.