EMNEEVALUERING BIO103 V14

Overview of Course Objectives

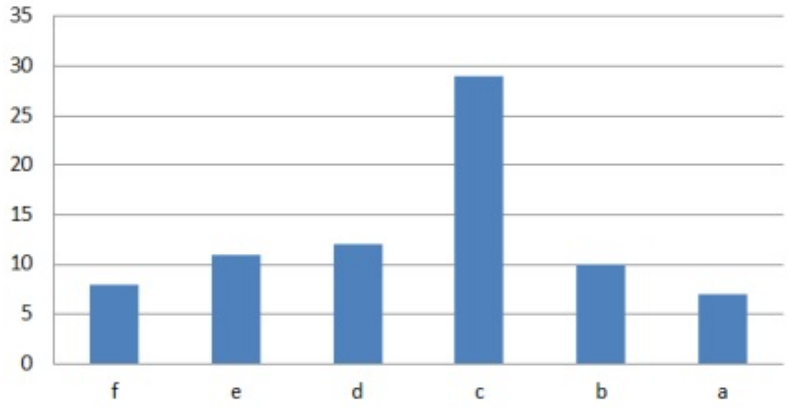
BIO103 is a course with a focus on the fundamental organizing unit of life, the cell. Our first purpose is to provide an introduction to the structural organization, functional compartmentalization and proliferative control systems of both prokaryotic and eukaryotic cells. The diversification of cell types, with specific sets of functions, underlies much of evolution, and this is in turn dependent on differential readout of underlying genomic content. Therefore, we also address the evolution of prokaryotic and eukaryotic genomes, as well as epigenetic mechanisms for controlling the differential read-out in diverse cell types within a given organism. We cover the mechanisms which govern the inheritance of genetic information and present the diversification of organismal life cycles. Finally, we integrate this information into a basic coverage of animal and plant development, as this is frequently the process during which adaptive changes originate and are shaped.

Cell biology and genetics employs a wide range of technical approaches from microscopical analyses to bioinformatics and systems biology. Furthermore, the techniques and strategies used are constantly, and sometimes, rapidly evolving. Therefore, through laboratory and bioinformatics exercises we also try to introduce the students to this world of possibilities. We have chosen to place some emphasis on aquatic organisms to fit the UiB “blue University” profile and have included one module (the “guyppy lab”) which builds on ongoing research at BIO, on a project with societal relevance in terms of fisheries management. In these labs we also have the students work in different structures, individually, in groups of 2, and in larger groups of 6, which we feel to be relevant to the different types of project environments many students will encounter in their professional lives, post-graduation. We also include some non-textbook literature in the pensum, mostly in the form of review papers on certain topics as we think it critical that students become familiar with accessing more up to date literature in a Research and Teaching University setting.

Course Results

In the first year the course was taught (V13), 100% of the grade was based on the final exam. The lab reports and bioinformatics exercises were assessed on a pass/fail basis with a pass on all required in order to take the exam. In V14, 30% of the final grade was based on lab and bioinformatics reports and 70% on the final exam.

Final Course grades V14



There was a 10% failure rate for BIO103 in V14.

Student Feedback

We received relatively little informal feedback from the students during the course of the semester and therefore most feedback was post-exam, in a formal written survey. A total of 52% of the students responded to this survey, with only 35% responding thoroughly.

There were several main points of course criticism/dissatisfaction:

- The exam was generally thought to be too difficult – comments ranged from “Utfordrende og gode” to “ELENDIG!”
  Some students felt that the exam was not representative of the pensum as it also included questions based on reading that was assigned outside of the textbook. Others thought it to be too detailed. One student commented on the failure rate from V13 “Spesielt ikke med tanke på at styrkprosenten var på 40% i fjor! Skjerpings! “(in fact, the failure rate for V13 was 6%). There were a few complaints that the language on the exam was not clear in places though no specific examples were given as to where this was the case.

- The guppy lab was not appreciated and as pointed out by the head of this lab, it was rather discouraging that it did not receive one positive comment. It was cited as being not clear as to purpose and integration with the other course material and that it involved working in groups of 6 which submitted a common report.

- Students felt that the bioinformattikks lab was too rushed and that they did not learn sufficiently from it.

- Too many different lecturers of uneven quality.

- Difficulty for some students in following the “rød tråd” through the course and between lectures/lecturers.

Response and Measures by the Teaching Team for V15

We performed some comparative research on past exams in MOL100, BIO103 and BIO104 and based on this, also tested one idea during the make-up exam for BIO103 during the fall of 2014. Students generally scored highest on the MOL100 exams, followed by BIO103 and then BIO104. Our

interpretation is that it was not a difference in required level of "detail" but instead of required capability to "synthesize" concepts in essay as opposed to short answer or diagram labelling formats. This is problematic and worrisome at the level of the 4th semester of University studies. Students also clearly struggled with the concept of a pensum that included additional reading assigned beyond the textbook and/or that was covered principally in lectures, as well as experiencing difficulties working together (and receiving joint credit) in larger groups in some of the lab modules. Our exams are gone over for language and clarity by both native Norwegian speakers teaching in the course as well as by personnel outside of the course. We will continue to do this and would appreciate it if specific errors are brought to our attention as opposed to unsubstantiated statements.

To address the issues raised, combined with our assessment of their respective validities, we plan to make the following modifications in BIO103 for the V15 semester:

An increased effort will be made to clarify the "rød tråd" of the course both in the introductory first lecture and between lectures. Each member of the teaching team will make an effort to explicitly link their material to the previous lecture(s) and following lecture(s). Effort will also be made to place the guppy lab better in the context of the course.

We will assign student ombudsmen at the beginning of the course to serve as an ongoing interface between the teaching staff and the students, during the running of the course, thus, hopefully enabling further improvements underway.

We will establish two new sets of kollokvia. The first will deal with how to access, read, organize and digest modern scientific (non-textbook) literature. The second kollokvium will involve the students providing written answers to essay questions prior to the kollokvium. These answers will first be evaluated by the students in small groups themselves, then in summary by the teaching staff, and finally, example answers will be provided. Hopefully this will help to improve performance on a challenging exam as opposed to simply making exams easier (and therefore, ultimately, of less value to the student).

A better, prior, introduction will be given to the bioinformattikks lab including homework assignments to be completed prior to the exercise itself.

After discussion among the teaching team we still feel it is preferable to maintain the diversity of lecturers, and their respective expertise, rather than reducing this. We also think it important that the students learn to work constructively in groups of different sizes and that they should develop the skills to do this as it will be inevitably important in their professional futures. Therefore the varied group size and reporting formats in the lab modules will be maintained.

Requested Expectations of Students for V15

The teaching staff makes an effort to make lecture notes and assigned reading available on Mi side prior to the lectures. Unfortunately, as we can follow on Mi side, very few students in V13 and V14, take advantage of this. It would be our preference that lectures increasingly evolve into an active discussion of the given topic between ourselves and the students, but this demands preparation on the part of both groups. It is impossible to do if a substantial proportion of students are unprepared as they would rapidly become lost in such a format.

Please make an effort in your evaluations to be factual and to cite specific examples of problems as it is then possible to better assess and then address them directly.

Generally, a too small proportion of the same students are active in class. We challenge every single BIO103 student to ask or answer and least one question during the course of the upcoming semester!