

Summary

The evaluation of the Master Programme in Applied Biotechnology has given the evaluation committee a very positive overall impression of the programme. There are, of course, possible improvements, which are listed below.

The goals of the Higher Education Authority, the programme and the courses are fulfilled to a high degree. The evaluation committee is convinced that there is a significant progression from the introductory course to the degree project. Various types of examination are used and the DiaNA system is used to help students develop their communication skills. The teachers are experts in their fields and most of them have significant pedagogical training – some are even “excellent teachers”. Regular “teacher’s days” and other type of meetings should of course be continued to ensure a continuing contact between teachers and to encourage further development of the programme. The programme has a solid research basis, with a majority of the teachers being active researchers, and the course content is research oriented to a large extent. Since both students and teachers come from all around the world, many nationalities are represented, which contributes to a very international study environment.

The evaluation committee is of the opinion that the needs of the society are clearly fulfilled by the programme, and students are well prepared for their first job and future career. Good links to industry have been established, but can of course be further strengthened.

Suggested improvements

General:

- Review the requirements for the programme, for example regarding mathematics, to try to make the knowledge level of student group more homogenous.
- Include a workshop/seminar about cultural intelligence to improve the student’s ability to cooperate over cultural differences.
- Create a strong incentive for all teachers to participate in gender equality / equal opportunity related courses
- Find ways how to better cope with the heterogeneity of the students’ previous knowledge.
- Consider holding Biotech Industry Days annually.
- Improve on career related activities and links to the industry.
- Consider providing professional access to LinkedIn to students to enhance connections between students, alumni, academia and industry.
- Include course components that bring up issues of sustainable development.
- Schedule a time for the students to fill in course evaluations.
- Look into the utilization of the lab facilities and the facilities for eating lunch.
- Investigate the possibility of purchasing new lab equipment.
- Employ a person to be responsible for helping students with Visa issues.
- Raise the question on the national level to not restrict the tuition fee to 60 credits/year.

Syllabi/constructive alignment:

- Use the suggested subheadings in the course syllabi – “Knowledge and understanding”, “Skills and abilities”, “Judgement and approach” to structure the course syllabi.
- The evaluation committee recommends that the programme should start the process of going over to criterion-referenced examination.

- Consider implementing mathematics into the curriculum in order to prepare students for eventual activities in the fields of -omics, high throughput technologies and bioprocess engineering.

Course content:

- There might be a need to include more journal clubs, literature seminars etc. to train the students in evaluating the quality of the work (goal 2.2.4).
- It would be beneficial to include more discussion of societal and ethical aspects in the course content, especially for the Master's thesis.
- In some courses, it might be relevant to bring up internationalization issues.
- Include course content related to sustainability issues.
- Regular course moments should be created to stress upon the importance of gender balance and equal opportunities

Master's thesis:

- The evaluation board recommends to set a limit to the number of submissions that are allowed for the Master's thesis. The thesis should be graded after a given number of submissions and failed if it does not reach the goals.
- We also recommend that the subject experts for the theses are not from a neighbouring research group, to ensure an unbiased grading, and that there should be a team of a limited number of recurring subject experts to ensure a more consistent level of grading.
- Include a field in the project description form for the title of the supervisor.
- Put a process in place to ensure the quality of thesis work that is performed by the students in the frame of companies. A university teacher with a PhD degree should be appointed as a co-supervisor when a thesis is performed at a company, to make sure that the correct scientific level is achieved.
- We recommend that all students should get access to an office space when they are working on their Degree Project.

Composition of the evaluation committee

The programme was evaluated by Lina Thorvaldson, PhD, Department of Medical cell biology, Uppsala University (chairperson), Prof. Dr. Florian Rüker, Department of Biotechnology, University of Natural Resources and Life Sciences, Vienna (BOKU), Olle Holst, Prof. em., Div. of Biotechnology, LTH, Lund University and Emmie Pohjanen, student at the Master programme in Industrial and Environmental Biotechnology, KTH Royal Institute of Technology.

Method of evaluation

The programme was evaluated during 2019 and 2020. The first contact with the evaluation committee was made in the spring of 2019 with a first meeting with the internal evaluator in May 2019. The self-evaluation was finished in July 2019 and the site visit at the Uppsala Biomedical Centre (BMC) took place in October 2019. During the site visit, the evaluation committee met with representatives from the faculty, programme board, teachers and students, and were shown the teaching and lab facilities at BMC. The evaluation committee has had Skype meetings on several occasions during the writing process where they discussed the quality of the programme according to the eleven aspects decided by the university and based the report on these discussions and information gathered during the evaluation process. The evaluation report was submitted in January 2020.