

# Quality Concept Master Biochemistry and Molecular Biology (BMB)

## Program Objectives

The overriding objective pursued by the master's program BMB is to provide students possessing a qualificatory first degree in biology, chemistry or a related subject and seeking a **professional qualification in biochemistry and molecular biology** with a thematically focused education in these two areas. Successful graduates acquire the right to be admitted to PhD studies. The program therefore makes a point of providing students with the ability to carry out **independent scientific work**. 80% of all graduates from the program subsequently aim for a PhD. The program is consistently designed as an **international program**. The language of delivery is English.

The study program covers the whole spectrum of biochemistry and molecular biology, and also embraces neighboring fields. A strong emphasis is also placed on **networking between the different disciplines**. Students acquire a sound knowledge of requisite methods and an understanding of the conceptual and experimental approaches to questions surrounding biochemistry and molecular biology.

As a rule, master studies in biochemistry and molecular biology build on previous undergraduate studies in the fields of chemistry, biochemistry or biology ending with the degree Bachelor of Science. It is possible to begin a **specialty** in the area of **microbial systems (MicSys)** or **biophysics** in the first semester of the program.

The **Foundation Module A** is compulsory for all students. It builds on the admission requirement of basic knowledge in the areas of biochemistry, molecular biology, cell biology and microbiology, and students must provide evidence that they possess such knowledge. Special emphasis is placed on the **integrative teaching** of these areas. Depending on the chosen profile or specialty, a second **Foundation Module B** is offered either in Bio-organic Chemistry, Biophysics, Glycobiology or Applied Microbiology (for MicroSys). In the second semester, students must participate in **at least three advanced modules** in which the contents of the foundation module are dealt with in greater depth and in relation to state-of-the-art research. In this respect, special importance is attached to the theory and practice-oriented elements of the module as well as to training a **strategic and practical approach to scientific questions** and experimental results. Working in **lab rotation**, students join two different research groups to take part in one of their respective research themes. In this way, they come to grips both with the theoretical background as well as the **objective targets** of such research themes and the **methods** needed to achieve those targets. Students can also take part in a lab rotation outside of the University of Bremen, preferably in a country **abroad**. Before the **Master thesis**, students must write a written **project proposal** and defend within the scope of a presentation.

# Evaluation Concept

The evaluation concept of the M.Sc. program Biochemistry and Molecular Biology (BMB) includes regular **evaluations of courses, modules and the program** itself.

## 1. Evaluation of courses/ modules

- a) Written **evaluations of the teaching quality** are carried out in courses with 10 or more participants. This is done by means of **anonymized evaluation questionnaires** distributed by course leaders at the end of a course or afterwards by means of anonymized electronic questionnaires posted for a limited period on the **course management system** StudIP. The results provide the teaching faculty concerned and the program coordinator with an instant and direct feedback on the students' view of the module. At the time of writing, it is **not foreseen that these results are generally made known to the students**: Whether this takes place is left for the member of the teaching faculty and the program coordinator to decide.
- b) The results of the written exam of module A are analyzed on a question- or topic- based level to ensure that the expected interdisciplinary competences have been conveyed successfully, or to find out if the coordination needs to be adjusted. If the results of the evaluation indicate problems, the program coordinator **discusses changes with the teachers** (e.g. of the course structure, contents, or teaching issues) which are then made public in **up-to-date module descriptions**.
- c) Questionnaire-based evaluations have proven to be of little use for modules with less than 10 participants. Therefore, **group discussions** and **individual talks** are carried out in these modules for evaluation of the courses.
- d) The blocked structure of most of the modules in the first semester creates a situation of *full immersion* which facilitates a direct, open discussion of teachers and students during the courses and allows for instant improvements. Students thereby make the experience that they can directly influence the quality management.

## 2. Evaluation of the program

- a) **Issues exceeding the program** and possible solutions are discussed intensively in meetings of the **examination board (PA)** which are also attended by student representatives. In the BMB, the election of several deputies facilitates that meetings of the committee can be joined by both the official student representative and further students as guests, which can thereby provide valuable constructive contributions. This is of great importance to adequately meet the varying needs, expectations and challenges of the highly diverse group of BMB students. In this way, **solutions are developed and reached by mutual consensus** in the examination board and measures can be resolved upon. The board decisions are made public on the program's homepage.
- b) In order to register comprehensive or structural problems and to find solutions, an **assembly of all students and their lecturers** takes place at which **results and consequences of the QM process** are discussed with the students. In particular, all students at these meetings are asked to voice criticism and suggest improvements for the structure and design of the complete program, which go beyond the evaluation of the individual courses and would not be registered otherwise. Resulting suggestions for solutions are discussed in the examination board and respective measures are agreed upon (see 2.a).