University of Basel

BIOZENTRUM
The Center for Molecular Life Sciences

Studying at the Biozentrum.

Bachelor & Master of Science.

Diverse career prospects.

Biology is the key science of the 21st century. It opens a wide range of career perspectives, be it in research, teaching, communications or consulting, in the fields of medicine or biotechnology, in the pharmaceutical or food industry, at a university or in a government organization. But what does it take to study at the Biozentrum of the University of Basel? – Curiosity, problem solving skills, creativity, perseverance and, of course, a flair for sciences and a Swiss "Matura" or equivalent diploma. And what makes studying at the Biozentrum so special? – The early involvement of students in active research, the broad range of all relevant research areas and methods in molecular biology offered, the state-of-the art technical infrastructure, the intensive and practical work-oriented supervision, the international environment with researchers from over 40 nations and the Biozentrum's position as one of the world's leading institutes for basic molecular and biomedical research.

"The third bachelor year is dedicated to practical work. During the block courses we spend the whole day in the lab. It's like working full time."

Silvia Candido, Student

3D model of a protein complex

Fascinating basic research.

How does a cell develop and how does it function? How does a stem cell know what it is intended to become? How do blood vessels form? How does the nervous system develop and how does our body defend itself against bacterial infections? The primary goal of basic research is to look closely at these central questions, regardless of an immediate practical use.

Research at the Biozentrum encompasses the fields of Cell Growth & Development, Infection Biology, Neurobiology, Structural Biology & Biophysics, and Computational & Systems Biology. Characteristic for its research is the strong emphasis on interdisciplinary collaborations within its walls as well as, on a local level, with the Departments of Biomedicine, Chemistry, Physics and Medicine, the Pharmacenter, the University Hospital Basel, the Swiss Tropical and Public Health Institute, the Swiss Nanoscience Institute, the Department of Biosystems Science and Engineering of the ETH Zurich in Basel, the Friedrich Miescher Institute for Biomedical Research and, on an international level, with renowned research facilities.

With the training of young scientists being a long-standing priority, the Biozentrum has been the springboard for countless research careers. Today, many of the Biozentrum's alumni are professors at distinguished institutes, or leaders in industry and business. More than half of the former students, doctoral students and postdoctoral researchers have settled abroad.

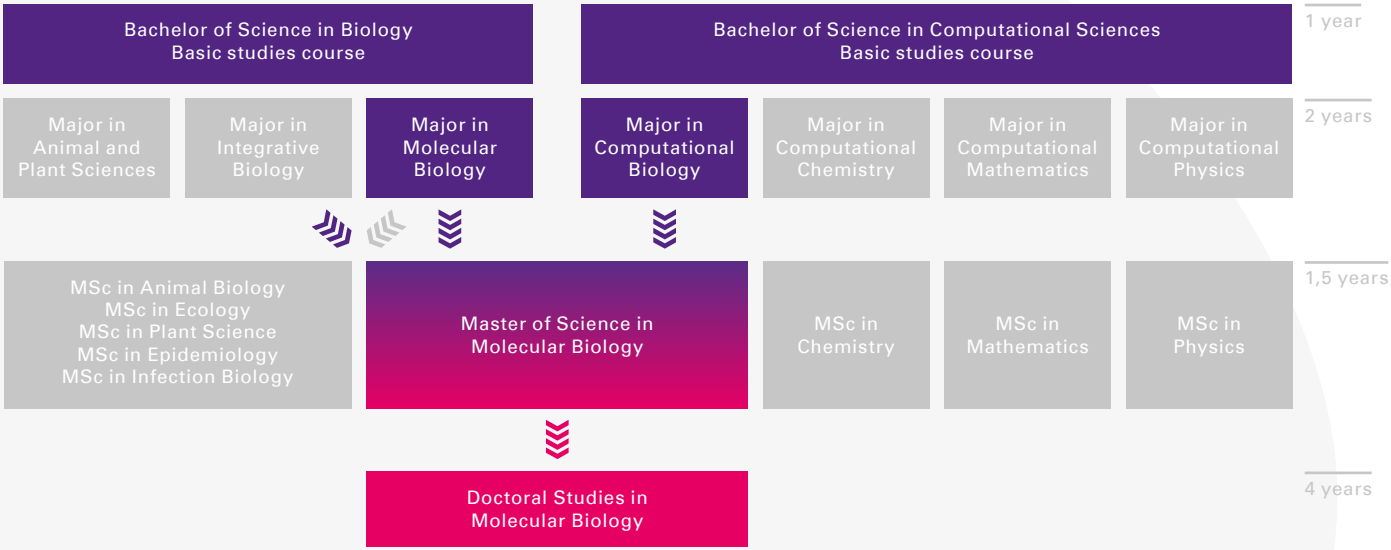
Wide variety of degrees in biology.

Offering three different Bachelor of Science in Biology majors and six subsequent master's courses, the University of Basel provides a wide range of degrees in biology. The Bachelor of Science in Computational Sciences with a major in Computational Biology also opens the door to a Master's degree in Molecular Biology.

Major in Molecular Biology

The bachelor's program Biology consists of a one-year basic studies course and a two-year specialized advanced course. The knowledge acquired in the first year in mathematics, physics, general chemistry and the basics of biology form the scientific foundation for majoring in Molecular Biology, Animal and Plant Sciences as well as Integrative Biology, a combination of the former two. If you decide to specialize in Molecular Biology at the Biozentrum, your second year program includes courses in biochemistry, developmental biology, genetics, human physiology, immunology, molecular microbiology, neurobiology, structural biology and biophysical chemistry. The third year of the study is practical work oriented: during this time active research is carried out in four six-week block courses. For a Major in Molecular Biology you will attend the block courses Biophysics & Structural Biology, Biochemistry, Microbiology & Immunology as well as Cell Biology & Neurobiology. Depending on your choice of block courses, a "Major in Integrative Biology" may also enable you to enter the master's degree program in molecular biology.

www.bio.unibas.ch



Major in "Computational Biology"

The bachelor's program Computational Sciences first year basic course covers the fundamental knowledge in mathematics, physics, chemistry and informatics. In the second year of studies there is also a specialization in one of four majors. The advanced study course in Computational Biology combines mathematics and informatics with the fundamentals of molecular biology, paving the way for quantitative research in biology, such as systems and structural biology, biophysics, genetics or bioinformatics.

Two six-week block courses in Structural Biology & Biophysics and Biochemistry, with both theoretical and practical aspects, as well as two research projects in Computational Biology are part of the third year program. The Bachelor of Science in Computational Sciences, Major in Computational Biology, allows you direct access to the master's degree program in Molecular Biology.

www.computational.unibas.ch

Master of Science in Molecular Biology.

Students who would like to deepen their knowledge in molecular biology can continue with a 18 month master's degree program at the Biozentrum. At the core of this program is a research project conducted in the laboratory under the guidance of experienced lecturers.

The prerequisite for admission to the Master of Science in Molecular Biology is a Bachelor of Science in Biology with a major in Molecular Biology and, in specific cases, in Integrative Biology or a Bachelor of Science in Computational Sciences with a major study in Computational Biology. As a rule, this program requires three semesters.

The major focus of the master's degree program is an independent research project. Students work for at least ten months in the laboratory, learning the newest techniques and applying these. You will supplement this by attending lectures to deepen your knowledge in your selected field of specialization. You can choose between biochemistry, cell biology, genetics, developmental biology, biophysics, structural biology, microbiology, infection biology, immunology, neurobiology, pharmacology and computational biology. Your master's thesis – the presentation of your research project – along with the master's examination comprises the completion of the course of studies.

Master's degree – and then?

A research career at a university or in industry? Work in the lab or at a school? In a patent attorney's office or as a consultant? Or rather in biocomputing or science journalism?

Your knowledge of life processes and your practical abilities opens many doors for you as a molecular biologist. Depending on your professional direction, however, it is important to acquire other additional qualifications after the master's degree, for example to become a teacher or a journalist. For many professional paths, a PhD is recommended for deeper research experience. To pursue a career in research, a doctorate is a prerequisite.

Those who do their doctoral studies at the Biozentrum benefit from a wide range of courses, lectures, workshops and conferences as well as an extraordinary diversity of experts. You can choose your doctoral supervisor from around 30 professors. Over the three to four years, he or she will accompany your individual research project which is completed with a dissertation.

Worth knowing.

Course Start

The bachelor's degree program starts each fall semester only. The application deadline is 30 April. It is possible to start the master's degree program in both the spring and fall. The application deadline for the fall semester is 30 April and for the spring semester 30 November. Applications are submitted online.

www.unibas.ch/studium

Credit points

Credit points (CP) are awarded for successfully completed course work according to the European Credit Transfer and Accumulation System (ECTS). The number of CP per learning unit corresponds to the working time needed to achieve its objectives. One CP corresponds to approx. 30 hours. Evidence of the achievement of 180 CP is required for a Bachelor of Science and 90 CP for a Master of Science.

Elective subjects

In the first two years of study, elective subjects supplement the compulsory science subjects. These may be chosen, according to individual interest, from most of the range of subjects offered at the university.

Preparatory course in mathematics

Prior to the start of the semester, an intensive, one-week preparatory course in mathematics is offered for all new science students. The aim of this course is to refresh previous knowledge and to help fill any gaps.

www.math.unibas.ch

Student Office Biology

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Appointments on request.