



University
of Basel

BIOZENTRUM

The Center for
Molecular Life Sciences

Master of
Science.

Studying Physics of Life

at the Biozentrum

For more than 50 years we have been studying the mystery of how molecules and cells create life – from the atom to the organism. The Biozentrum comprises more than 30 research groups and about 500 employees from over 40 nations. Being one of the leading life sciences institutes in the world, our interdisciplinary research has spawned many fundamental discoveries in biology and medicine as well as several Nobel Laureates.

The Biozentrum offers the only Master degree in Physics of Life in Switzerland. You will be trained in cutting-edge research at the interface of physics, mathematics, engineering, and life sciences.



“We cherish our Biozentrum community and offer many opportunities for scientific and social exchange. Join us!”

Why study Physics of Life?

Breakthroughs in life science research often occur at the interface between biology and physics, chemistry, mathematics, computer science, as well as engineering. Scientists from these fields have developed revolutionary methodologies and introduced quantitative concepts and theoretical models into biology, which have led to many discoveries at the atomic and molecular level but also at the cellular level and up to the ecosystem scale.

As modern molecular techniques produce huge amounts of quantitative data for biological systems, the impact of researchers trained in quantitative sciences is expected to grow in the life sciences.

So, if you enjoy theoretical or experimental research in life sciences, and if you have completed a Bachelor degree in physics, chemistry, mathematics, computer sciences or engineering, join the Master program in Physics of Life.

Our research in Physics of Life covers a wide variety of topics and many length scales of living processes, including macromolecular structures & biophysics, cellular physics, multicellular physics, neuroscience, systems biology, and evolutionary dynamics.

What makes studying Physics of Life at the Biozentrum special?

- » You will mainly focus on your independent research projects.
- » You learn to think critically and creatively during your research projects.
- » You benefit from cutting-edge technologies and interdisciplinary collaborations.
- » You can choose among dozens of research project supervisors from seven different departments and institutes in Basel.
- » You will be trained in both experimental and theoretical approaches.
- » You can complement your lectures in Physics of Life by a wide range of lectures of your choice.
- » You are assigned a professor as mentor to jointly select suitable courses.
- » You join an open-minded, lively, international community.
- » You can apply for a scholarship if you are an international student.
- » You will have a wide range of career prospects with your degree.
- » You can look forward to a great degree program!

What do I learn in the Master of Science in Physics of Life?

Semester 1 and 2

Foundation Courses in Physics of Life

- » Current Topics in Biophysics
- » From Data to Physical Models in Biology
- » Connecting the Microscopic and the Macroscopic World
- » Mechanobiology and Bioenergetics of Cells
- » Bioinformatics Algorithms

Elective Courses

You can choose courses from all Master programs of the Faculty of Science – half of them must be from Molecular Biology.

Research Projects

You will be working on two research projects of three months each. They can be carried out in the same research group or in different groups. Two thirds of your time will be dedicated to these research projects, the remaining third to the courses.

Semester 3

Master Research Project

The master's thesis gives you the opportunity to work independently on a research question. It takes six months of full-time work. You can do it in one of the research groups from the Faculty of Science, the Department of Biomedicine, the Department of Biomedical Engineering, the Friedrich Miescher Institute for Biomedical Research, or the Swiss Tropical and Public Health Institute in Basel.

Why choose Basel as place to study and live?

Basel is embedded in Europe's most important Life Sciences hub, located in the heart of Europe. It's a green city with a beautiful old town, the Rhine for swimming, and offers unlimited culture with almost 40 museums, many theaters, and numerous music events. The nearby Alps invite you to hike, cycle, or ski. No wonder Basel is one of the top fifteen cities with the highest quality of living worldwide. Basel is also an international melting pot with people from 160 nations and the most dynamic economic region of Switzerland.





At a glance

- » Admission: Bachelor of Science (BSc) in mathematics, computer science, physics, chemistry, biochemistry or engineering
- » Start of studies: spring/fall semesters
- » Duration of studies: 3 semesters
- » Language: English

Student Office MSc Physics of Life

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