Biomedical Sciences

Degree conferred
Bachelor of Science in Biomedical Sciences

Languages of study
Study in two languages, in French and German

Commencement of studies
Commencement of studies only in the Autumn Semester (September)

Access to further studies
Master

This bachelor programme in biomedical sciences is for students interested in the scientific aspects of human medicine preparing for a career in biomedical research or in other areas of the health system. The course of study is based on a systemic biological approach focused on the human being. Emphasis is on studying the response of organs to changes in the environment and the adaptation mechanisms involved, inside or outside the human organism.

It combines teaching the most modern research methods in living sciences and basic education similar to that of the medical curriculum. Practical work and internships in research groups also favour the acquisition of fundamental know-how.

Holders of this degree can then access master's studies in biomedical sciences within the framework of the inter-university convention between the Universities of Fribourg and Bern (BEFRI).

Profile of the study programme

The course of study is based on a systemic biological approach focused particularly on the human being. It combines teaching the most modern research methods in living sciences and basic education similar to that of the medical curriculum, focused on the in-depth understanding of the main systems of the human body. In biochemistry, phenomena of the living world are studied, essentially molecules and cells. In biology, an overview of living beings, animals and plants, is provided. The biomedical branch puts emphasis on studying the response of organs to changes in the environment and the adaptation mechanisms involved, inside or outside the human organism. These phenomena can only be observed on the scale of the isolated cell; animal experimentation and clinical studies carried out on patients are therefore essential methods for research in biomedical sciences.

The biomedical sciences programme is for students who are interested in the scientific aspects of human medicine: the scientific foundations of the human body’s structures and functions, the mechanisms that cause illnesses, and the development of new diagnostic and therapeutic methods. These students are preparing for a career in biomedical research, but they do not wish to practise the profession of a doctor looking after a sick person. With the right additional education, they can also go on to have a career in different areas of the health system (management, administration, etc.).

Students that successfully complete this programme will acquire in-depth knowledge of the different scientific aspects of human medicine: from the molecule to metabolic pathways, from the cell to the organ, from physiological function to pathology. In practical work and internships in research groups, students also acquire fundamental and essential know-how enabling them to work in biomedical research. The combination of these two types of skills is the first step in preparing for an academic or industrial research career.

Learning outcomes and career openings

Holders of this degree can then access master’s studies in biomedical sciences within the framework of the inter-university convention between the Universities of Fribourg and Bern (BEFRI). The study programme is organised by the Faculty of Medicine of the University of Bern; the master’s thesis may, however, also be carried out at the University of Fribourg. All BEFRI biomedical studies allow the student to acquire in-depth complementary knowledge in the medical field, which will open up possibilities in different careers in research, industry, economy or administration.

Studies organisation

Structure of studies
120 ECTS credits + 60 ECTS credits in one or two minor study programmes freely chosen, 6 semesters

Curriculum
http://studies.unifr.ch/go/mjKYS (French)
http://studies.unifr.ch/go/0fTFn (German)

Admission

The following Swiss school-leaving certificates grant admission to bachelor programmes at the University of Fribourg:

- Swiss academic Maturity Certificate
- Federal vocational or specialised Baccalaureate + supplementary examination of the Swiss Maturity Commission (passerelle)
- Bachelor Degree from a Swiss university, from an accredited Swiss university of applied sciences (HES/FH) or from a Swiss university of teacher education (HEP/PH)

A complete list of all further recognised Swiss school-leaving certificates is to be found on the webpages of swissuniversities (in French and German only): http://studies.unifr.ch/go/en-admission-swiss-certificates

Foreign upper secondary school-leaving certificates are
recognised only if they correspond substantially to the Swiss Maturity Certificate. They must qualify as general education. Foreign school-leaving certificates are considered to be general education if the last three years of schooling include at least six general education subjects, independent from each other, in accordance with the following list:

1. First language (native language)
2. Second language
3. Mathematics
4. Natural sciences (biology or chemistry or physics)
5. Humanities and social sciences (geography or history or economics/law)
6. Elective (computer sciences or philosophy or an additional language or an additional subject from category 4 or 5)

The general admission requirements to the bachelor programmes at the University of Fribourg for holders of foreign school-leaving certificates as well as the admission requirements for individual countries are to be found on the webpages of swissuniversities: [http://studies.unifr.ch/go/en-admission-countrylist](http://studies.unifr.ch/go/en-admission-countrylist)

In addition, foreign candidates must present proof of sufficient language skills in French or German.

The assessment of foreign school-leaving certificates is based on the «CRUS Recommendations for the Assessment of Foreign Upper Secondary School-Leaving Certificates, 7 September 2007» ([http://studies.unifr.ch/go/crus07en](http://studies.unifr.ch/go/crus07en)). The admission requirements are valid for the respective academic year. The Rectorat of the University of Fribourg reserves the right to change these requirements at any time.

Contact

Faculty of Science and Medicine
Medicine Section
Dr Patrizia Wannier-Morino
patrizia.wannier@unifr.ch
[http://studies.unifr.ch/go/fr-medicine](http://studies.unifr.ch/go/fr-medicine) (French)
[http://studies.unifr.ch/go/de-medicine](http://studies.unifr.ch/go/de-medicine) (German)