The study of biology imparts knowledge of the fundamental processes on which life – from the simplest bacteria to the human being – is based. This includes development and behaviour of organisms, as well as their interaction with the environment. During the first academic year, students acquire the necessary basic knowledge (general biology, organism biology, chemistry, mathematics, physics). During the second and third years, a choice of specialisation is made, depending on the interest of the student ("Biology of Organisms, Evolution and Ecology" or "Molecular Biology, Biochemistry, Genetics and Cell Biology"). The two orientations are, however not necessarily separated: They can in part be combined with each other and many lectures and much practical training are common to both. In addition to lectures, the study programme contains exercises, practical training and seminars, as well as writing a Bachelor’s thesis in a research unit.

Profile of the study programme

The study programme in biology opens the door to a fascinating world. It imparts knowledge of the basic processes underlying the life of the simplest bacterial cell to the human being. Biology deals with the smallest molecular structures, such as genetic material or proteins, as well as with the architecture of entire cells and tissues that contribute to the development of complex organisms. In addition to the analysis of the structure, function and interaction of macromolecules, such as molecular networks and cellular interactions, the development and behaviour of organisms and their interactions with the environment are also studied. Biological research provides the foundations for genetics, molecular biology, cell biology, microbiology, biotechnology, evolutionary biology and environmental sciences. In the medical area, biological research imparts essential knowledge about the structure and functioning of the human body, based on which medicine can determine the causes and effects of illnesses and develop suitable therapies. With the help of biological knowledge, pharmaceutics can in turn produce indispensable drugs, such as insulin or antibiotics, from genetically altered microorganisms instead of from their natural biological source. The production of such drugs is more economical and much more effective. When it comes to farming, crops are equipped with resistance factors against pests and are made less sensitive to drought or a lack of nutrients. In addition, optimal conditions can be determined for the sustainable use of natural resources.
DNA sequencing and analysis of results with bioinformatic methods, purification and analysis of protein complexes and mass spectroscopy, PCR and the production of transgenic microorganisms, plants or animals.

**Professional openings**
The biology studies at the University of Fribourg are thus suited for students who later wish to offer a broad range of skills on the job market in the areas of molecular and organismic biology.

**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](http://studies.unifr.ch/go/mjkYS) (French)
- [http://studies.unifr.ch/go/0FTFj](http://studies.unifr.ch/go/0FTFj) (German)

**Admission**
The following [Swiss school-leaving certificates](http://studies.unifr.ch/go/en-admission-swisscertificates) grant admission to Bachelor programmes at the University of Fribourg:

- Swiss academic Maturity Certificate
- Swiss vocational or specialised Baccalaureate in conjunction with the supplementary exam certificate from the Swiss Maturity Commission
- 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 recognized 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-swisscertificates](http://studies.unifr.ch/go/en-admission-swisscertificates)

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, chemistry or physics)
5. Humanities and social sciences (geography, history or economics/law)
6. Elective (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-country-list](http://studies.unifr.ch/go/en-admission-country-list)

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.

**Alternatives**
Also offered as a minor study programme (60/30 ECTS credits).

**Contact**

Faculty of Science and Medicine
Department of Biology
Dr Alessandro Puoti
bio-scimed@unifr.ch
[http://studies.unifr.ch/go/en-biology](http://studies.unifr.ch/go/en-biology)