Course offerings 19/20 | AS19
Study programme description
Bachelor

Mathematics

Degree conferred
Bachelor of Science in Mathematics

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 study programme is the first step in the training of professional
mathematicians. The methods, ways of thinking and content that,
according to international standards, all mathematicians should be
proficient in are imparted in an intense and demanding programme.
During the third academic year, students can attend advanced
lectures that correspond to their interests and preferences. Thanks
close cooperation with the Universities of Bern and Neuchâtel,
these courses are also open to students in Fribourg.
The major study programme in Mathematics is supplemented by
minors that students can choose freely from other university fields
of study.

Profile of the study programme

The origins of mathematics go back to prehistoric times. The
science developed from the practical requirements of measuring
and counting in trade and industry, from the pursuit of astronomy
and geodesy and from the appeal of the principles and laws that
were thereby discovered.
The scientific and technical revolutions that have occurred since the
beginning of modern times are characterised by the discovery and
development of increasing numbers of new mathematical concepts,
models and methods. Currently, mathematics has approximately
100 different areas of research, which are interrelated in
multifaceted ways with other sciences. Every year more than
100,000 new contributions to research are published in the
numerous professional mathematical magazines.

This graduate school programme is the first step in the training of
professional mathematicians. The training is usually continued and
completed with a subsequent Master of Science programme in
mathematics. The methods, ways of thinking and content that all
mathematicians should be proficient in, in accordance with
international standards and independent of subsequent specialisation,
are imparted in an intense and demanding programme.
The major study programme in Mathematics programme is
supplemented by one or two minors that students can choose
freely. In addition to physics, computer science and economics,
which are traditionally closely linked to mathematics, other fields of
study in Science or the Arts and Humanities can also be chosen.

Fribourg profile

The programme of the first two academic years is largely
determined by mandatory courses. The main focus consists of a
multi-semester lecture series on analysis, algebra and geometry.
During the second academic year, introductory courses on applied
mathematics, especially numerical mathematics and probability
theory, and statistics are added. The courses consist of lectures
that serve to quickly and efficiently impart knowledge in a
concentrated form and corresponding exercises in which what has
been learned is applied independently deepening the knowledge
through practical use.
The content of the programme during the third academic year is not
so defined, although there are rules that ensure that the training is
not too one-sided. The courses require thorough command of the
methods and content learned during the first two years of study. Among
a wide range of courses, students choose further lectures
that correspond to their interests and inclinations. In this way they
prepare themselves for a further specialisation within the Master's
programme. During seminars they learn to deal with more complex
mathematical problems and to present their results in lectures and
written work. There is close cooperation with the neighbouring
universities in Berne and Neuchâtel, whose course programmes are
also open to the students from Fribourg.
The study of mathematics in Fribourg is bilingual. Approximately
half of the courses are held in French and the other half in German.
During exams students are free to choose their language.
Beginning in the third year, and during the Master's programme,
English is added as a further language of study.

Learning outcomes and career openings

Due to the wide use of mathematical methods and ways of thinking
in very different areas of business, science and administration,
there is no fixed professional profile for mathematicians. There are
typical fields of work at banks, insurance companies, management
consultancies, in schools and universities, authorities and statistical
offices, in industrial research and development, in information
technology, logistics, meteorology, image processing and security
technology.
In addition to in-depth mathematical knowledge, the main focus
often lies on the skills that are promoted during the studies: clear,
structured and substance-oriented thinking, a systematic, targeted
approach to tasks, analytical creativity, capacity for abstraction and
the ability to see relationships and to quickly find one's way with
new types of problems and unfamiliar tasks.

Studies organisation

Structure of studies

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

Curriculum
Admission

The following Swiss school-leaving certificates 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

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