At master's level, this study programme in physics provides students with advanced courses and starts the process of specialisation. About half of the courses are compulsory and of general interest, the other half consists of more specialised elective courses.

The master's thesis will be supervised by an active researcher and initiates students to the frontiers of research, in the following subjects: Atomic physics, Electrons in solids, Soft matter and photonics, Theoretical interdisciplinary physics, Collective quantum phenomena and Nanosciences (Nanomaterials).

At the end of the programme, students will have learned how to apply their knowledge to do research projects and how to work independently or integrate into an interdisciplinary research team.

**Profile of the study programme**

Physics has been the main motor of the spectacular scientific and technological developments of the 20th century and will definitely continue to play a dominant role for the promotion of science at large in this century.

The study programme in physics provides you with more advanced courses, and starts the process of specialisation. The master’s thesis is supervised by an active researcher and initiates you to the frontiers of research. At the master’s level, about half of the courses are compulsory and of general interest, the other half consists of more specialised elective courses. Specialised lectures may also be taken at other universities, in particular Bern. It is recommended that you follow the specialised lectures in the field of your future master’s thesis. Other lectures, at your discretion, are necessary to complete the requirements. The lectures are complemented by seminars on modern research topics and advanced laboratory work, colloquia and project in research group.

**Compulsory courses:**

- *Theoretical physics*: Advanced statistical mechanics,
choice (see «Teacher Education for Secondary Level»). Learning scientific rigor, abstract thinking, experimental and mathematical skills, the ability to describe concrete phenomena by theoretical models, the ability to identify relevant variables, are skills of good standing in the search for employment in both the public and private sectors. Branches where physicists are welcome include machine and electronic industries, applied computing, insurance companies, risk management and even financial mathematics. Besides those typical careers, physicists frequently appear in important managerial positions or in politics.

Studies organisation

Structure of studies

90 ECTS credits, 3 semesters

Curriculum

http://studies.unifr.ch/go/vBvMa

Admission

Master's degree programmes are built on the knowledge and abilities that were acquired when obtaining a bachelor's degree.

Holders of a bachelor's degree awarded by a Swiss university are admitted to a master's degree programme without any preconditions if they have earned 60 or 90 ECTS credits – depending on the chosen master's degree programme – within the corresponding discipline. However, additional requirements can be required. The same applies to holders of a bachelor's degree awarded by a foreign university, provided that the bachelor's degree is recognised and considered equivalent by the University of Fribourg.

Holders of a bachelor's degree awarded by a Swiss or a foreign university, provided that the bachelor's degree is recognised and considered equivalent by the University of Fribourg, who do not fulfil this condition can be admitted to a master's degree programme with preconditions (which must be successfully completed before starting the master's degree programme) and/or additional requirements (which can be completed during the master's degree programme). The preconditions and/or additional requirements may not exceed 60 ECTS credits in total. The same applies to holders of a bachelor's degree awarded by a Swiss university of applied sciences, according to existing agreements.

The respective conditions of admission for each master's degree programme are reserved.

Alternatives

Also offered as a minor study programme (30 ECTS credits) as part of the Diplôme d'Enseignement pour les Ecoles de Maturité (DEEM)/Lehrdiplom für Maturitätsschulen (LDM).

Contact

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