

Digital Neuroscience

Degree conferred

Specialised Master of Science in Digital Neuroscience

Languages of study

Study in English

Commencement of studies

Commencement of studies only in the Autumn Semester (September)

Access to further studies

This master programme qualifies students for the doctoral programmes [Computer Science](#), [Bioinformatics](#), [Medical Sciences](#) and [Psychology](#).

The specialised master programme in Digital Neuroscience provides unique opportunities for an intense learning experience in the area of neuroscience and digitisation. It emphasises learning about applied neuroscience topics and the acquisition of programming skills that will enable students to develop intelligent solutions in their future employment and/or develop a research career in digital neuroscience.

Profile of the study programme

Digitalisation has been identified as a critical aim by existing institutions and businesses worldwide and is a key success factor for new companies and start-ups. Especially in the domain of mental health, mobile solutions and digital applications involving large data sets acquired in the real world are a focus of development and will have a profound influence on our health system and society. An important aspect is centered on finding intelligent solutions for adaptive human behaviour in a wide set of domains including health, ageing, lifelong learning, consumer behaviour, neurorehabilitation and man-machine interaction. A central common aim here is the development of real-world screening tools to find an optimal match between specific individual needs and individualised solutions. Digital Neuroscience will help to fulfill the demand for digitalisation specialists, who have profound knowledge on brain function and human behavior coupled with expertise in digitalisation, data handling and analysis, programming and visualisation.

What will I learn?

The offered classes fall broadly into three partially overlapping domains, namely computing, ergonomics and neuroscience. Courses start in the autumn semester with mandatory classes on Python programming on one hand and the fundamentals of neuroscience on the other hand, to bring students up to speed with the essential topics in these domains, which provide the foundation

for successfully participating in the more advanced courses. During the 2nd semester in spring, students will acquire critical skills in basic machine learning and will advance their neuroscience education towards current topics in digital neuroscience. During the next autumn semester, students will participate in courses offered by the Department of Informatics on advanced machine learning. And in the following spring semester they will take a class in app development. During the 2nd semester of their studies, students will start on their master thesis project and will continuously attend a master colloquium on digital neuroscience. In addition to these compulsory courses, most of them dedicated towards digital neuroscience, students will have the opportunity to select additional optional courses from a wide variety of existing classes in order to advance their academic and professional profile in the areas of Neuroscience, Computing and Digitalisation as well as man-machine interactions.

Who can apply?

The programme is addressed to students with an undergraduate degree in Life Sciences, Psychology, Informatics, Physics, Economics, Engineering or a related subject area.

What are we looking for?

When assessing your application we would like to know:

- Why you want to study Digital Neuroscience?
- Why you want to study at the University of Fribourg?
- What particularly attracts you to this programme compared to other ones?
- How your personal and professional background meets the demands of this rigorous programme? Specifically, what are your previous experiences in the domains of programming and neuroscience and how do they relate to the aims of this master programme?
- What are your expectations from this programme?
- What your career plans are following the award of your degree?

Together with essential academic requirements, the personal statement is your opportunity to illustrate whether your reasons for applying to this programme match what the programme delivers.

Academic and professional openings

We expect an already high and increasing demand of students of Digital Neuroscience in companies and start-ups related to digital mental and physical health applications and related fields, including man-machine applications. The master's degree also provides a solid foundation for doctoral studies, where students can capitalise upon the acquired knowledge and skills. A doctorate can then provide potential access to academic and management leadership positions within Switzerland or abroad.

Studies organisation

Structure of studies

120 ECTS credits, 4 semesters

Curriculum

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

Comments

The number of places is limited to the formation capacities of the involved departments.

Admission

The admission to the master follows the conditions of admission of the University of Fribourg. Holders of a bachelor's degree in Life Sciences, Psychology, Informatics, Physics, Economics, Engineering, or a related subject area, awarded from a Swiss University can be admitted to the master's degree course. 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. For details, please, refer to the study plan.

Contact

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