



Deutscher Akademischer Austauschdienst
German Academic Exchange Service



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Master's degree



Life Science Informatics (b-it)

University of Bonn • Bonn

Overview

Degree	Master of Science in Life Science Informatics
In cooperation with	RWTH Aachen University
Teaching language	<ul style="list-style-type: none">English
Languages	Only English
Programme duration	4 semesters
Beginning	Winter semester
Application deadline	Submission of application documents: every year by 1 March for the academic year starting in October of the same year
Tuition fees per semester in EUR	None
Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No

Description/content

The programme is distinguished by its international orientation, its focus on both natural sciences and IT competence, and its high level of integration of research and teaching. The programme is characterised by a significant number of research lab courses embedded in both basic and applied research at the participating Fraunhofer Institutes of Applied Information Technology (FIT) and for Algorithms and Scientific Computing (SCAI) in cooperation with regional industry.

The Master's programme in Life Science Informatics consists of four main blocks:

- Computer science and mathematics for natural scientists
- Basic principles of life science informatics
- Biology of the cell and systems biology
- Biomedical data science

Major topics include:

- biomedical database systems
- management and retrieval of information
- data mining and machine learning
- statistical genetics

- drug design
- medical imaging and visualisation
- computational neuroscience
- computational modelling of regulatory and metabolics networks
- systems biology and computational systems biology
- analysis of microarrays

Special courses and internships on information retrieval and data mining provide a special focus on (or within) the important application domain of biomedical information systems.

The programme also includes training designed to sensitise students to the ethical implications of emerging biotechnologies. The final six months of the programme are dedicated to the Master's thesis, which can be completed in cooperation with partners in the industry.

Course Details

Course organisation The course contents are structured according to the ECTS (European Credit Transfer System). The programme consists of three semesters with lectures/lab work, and a Master's thesis which is written in the final, fourth semester. Lectures are usually accompanied by course assignments which have to be successfully completed by the students. Lab work is a substantial part of the programme. Several of the courses are mandatory; many electives are offered in the later semesters.

The programme emphasises the students' early exposure to eminent scientists. Therefore, courses and lecture series with guest researchers who are prominent in their respective fields are offered to students in order to broaden their horizons.

One example of how this is achieved is the LSI's International Lecture Series. Every summer semester, students have the opportunity to discuss current topics from the field of life science informatics with a range of highly experienced, international researchers.

A Diploma supplement will be issued Yes

International elements International lecturers teach domestic and international students.

Integrated internships Optional: in industry and academia, industry workshops within the programme

Special promotion / funding of the programme

- Other (e.g. state level)

Course-specific, integrated German language courses Yes

Course-specific, integrated English language courses No

Costs / Funding

Tuition fees per semester in EUR None

Semester contribution	The University of Bonn is a public university, meaning that it does not charge tuition fees. However, all students must pay the so-called social contribution (semester fee) of about 330 EUR per semester. It includes a student transit pass for public transport and a statutory accident insurance, among other things.
Costs of living	Compared to the rest of Europe, living in Germany is not very expensive; in fact, it is only slightly above the EU average. The cost of living for students in Bonn is around 800 EUR to 1,000 EUR, with apartment rent accounting for the largest share.
Funding opportunities within the university	No

Requirements / Registration

Academic admission requirements	<p>Candidates must hold a first degree awarded by an internationally recognised, university-level institution (Bachelor of Science or Engineering) in biology, medicine, pharmaceuticals or computer science, or another closely related discipline. Candidates should have performed well above average in their undergraduate studies. The Graduate Record Examination (GRE) is strongly recommended.</p> <p>In particular, applicants must have knowledge equivalent to a one-year course in each of the following subjects: analysis, linear algebra, fundamentals of biochemistry, theoretical biology, in the areas programming, data structures and algorithms, computer organisation and design, fundamentals of theoretical computer science, molecular biology, genetics, cell biology, neurobiology, biodiversity, microbiology and pharmacology.</p>
Language requirements	Candidates must be able to speak and write English fluently (TOEFL 550 paper-based, 213 computer-based, iBT 80 or IELTS 6.0). A basic command of the German language is recommended. German courses for foreign students are offered at the Bonn-Aachen International Center for Information Technology (b-it) and at the University of Bonn (https://www.uni-bonn.de/en/studying/international-students/learning-german/learning-german).
Application deadline	Submission of application documents: every year by 1 March for the academic year starting in October of the same year
Submit application to	Bonn-Aachen International Center for Information Technology (b-it) LSI Coordination Team Friedrich-Hirzebruch-Allee 5 53115 Bonn Germany

Services

Possibility of finding part-time employment	<p>A work-study programme for qualified students (paid on a stipend basis) is administered by the cooperating Fraunhofer Institutes.</p> <p>With a strong focus on biomedical research, the University of Bonn and the University Hospital offer several interesting opportunities to work closely with experimental researchers. In addition, the ABCD region (Aachen, Bonn, Cologne, Düsseldorf) is home to many prospective employers, including global players such as Bayer, as well as many highly specialised, medium-sized companies such as Grünenthal.</p>
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Accommodation

Students of the University of Bonn can apply for a room in a dormitory of the Studierendenwerk Bonn (further information: <https://www.studierendenwerk-bonn.de/en/accommodation/>).

For further information on housing in Bonn, please visit our website: www.uni-bonn.de/en/university/university-life/living-in-bonn.

International applicants who are admitted to the Master's programme can apply for a dorm room through the programme coordinator. Unfortunately, we cannot guarantee that all students will be allotted a room, as these are in short supply.

Career advisory service

The University of Bonn has a central career service, which provides a range of advice and support about choosing a career and applying for jobs. Moreover, international students can join the "iStart" career programme, which teaches participants tangible knowledge and valuable skills that will enable them to write successful applications for jobs in Germany. The programme is geared toward giving students a successful career path both during and after their studies, thus making it easier for them to enter the job market.

Moreover, the programme offers specific career services through its alumni, international lecture series and workshops with international lecturers from industry and academia.

Support for international students and doctoral candidates

- Welcome event
- Buddy programme
- Visa matters

Supervisor-student ratio

1:1

Our Partners



Pattern Recognition

This video features a b-it professor, Dr Christian Bauckhage, delivering his "Pattern Recognition" lecture. Pattern recognition has also a deep impact in the field of Life Science Informatics. Medical imaging analysis as a scientific visualisation technique is based on pattern recognition algorithms.

» more:
<https://www.youtube.com/watch?v=dcJlGqHtz-Y>



b-it building

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The University of Bonn is one of eleven German Universities of Excellence and the university with the most research Clusters of Excellence – six in total. It has produced more Nobel Prize laureates and Fields Medal winners than any other German university in recent decades. The University of Bonn stands for world-class, top-notch science and research. For 200 years, the university has been shaped by outstanding scientific personalities, research-led degree courses, the international flair of being the German city of the United Nations, a dynamic and worldwide networked scientific region and – last but not least – the liveable Rhineland in the heart of Europe.

With around 34,500 students, 7,000 doctoral students, 560 professorships and over 6,000 employees, the University of Bonn is one of the largest traditional and research-intensive universities in Germany. The large spectrum of subjects on offer in seven faculties ranges from agricultural sciences to dentistry. Numerous subjects occupy a leading position in international competition. In addition to strong disciplines, six cross-faculty Transdisciplinary Research Areas (TRAs) provide space for exploration and innovation that addresses key scientific, technological and societal challenges.



University location

Bonn is a beautiful and historic city located on the banks of the Rhine and also known as the birthplace of Ludwig van Beethoven. At the same time, it is a modern, lively and cosmopolitan city with a high quality of life. In the Smart City Index – which measures the digitalisation of Germany's 81 major cities – Bonn came out on top in 2019 as the smartest city in North Rhine-Westphalia. And the travel guide "Lonely Planet" voted Bonn the fifth best travel city in 2020. Bonn is also the German city of the United Nations with 25 UN institutions and many international organisations. With over 6,000 international (doctoral) students from more than 140 countries, the university contributes significantly to the international flair of the city of Bonn.

Contact

University of Bonn

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🌐 Course website: <https://www.b-it-center.de/b-it-programmes/msc-in-life-science-informatics/description>

📘 <https://www.facebook.com/bit.institute>

📺 <https://www.youtube.com/channel/UCSJQCWXIrhar3i7rc-HFUfQ>

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International Programmes in Germany - Database

www.daad.de/international-programmes
www.daad.de/sommerkurse

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Disclaimer

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