Deutscher Akademischer Austauschdienst
German Academic Exchange Service



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Master's degree **2**

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Master's degree

Physics

University of Bayreuth • Bayreuth

Overview

Degree	Master of Science (MSc)
Teaching language	• English • German
Languages	German and English
Programme duration	4 semesters
Beginning	Winter and summer semester
Application deadline	**Application for EU citizens** 15 April to mid-October (winter semester) 15 October to mid-April (summer semester) **Application for non-EU citizens** 15 April to 15 July (winter semester) 15 October to 15 January (summer semester)
Tuition fees per semester in EUR	None
Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No
Description/content	The two-year Master's programme in Physics at the University of Bayreuth is a research-oriented programme (120 credits) that builds on the Bachelor's programme in Physics (or equivalent). Highly qualified students can also apply and participate for an additional programme ("Zusatzstudium") at the University of Bayreuth, the "Bavarian Elite Study Programme Biological Physics". (For more information on this additional programme, please consult the website http://www.biophys.enb.uni-bayreuth.de/en/.) **Research-oriented Master's programme** The programme provides specialised knowledge in the various subdisciplines of physics at the forefront of current research. Since the study of physics at the Master's level also requires freedom for creativity, our programme already gives first-year students a great deal of freedom in selecting their individual, interdisciplinary, and research-oriented courses with a focus fields such as biological physics, solid state physics, nonlinear dynamics and pattern formation, soft matter physics, and physics of molecular systems. Our Master's programme in Physics encourages early involvement in research, and the second year

is fully research-oriented. It is designed to foster the student's ability to carry out independent scientific work as required in many occupational fields. The second year is completed with a Master's thesis.

The programme promotes a number of qualifications and skills, such as the following:

- an advanced scientific understanding of the subject matter at a high international level
- the ability to carry out scientific work independently
- additional key skills such as project management, teamwork, and the ability to clearly present complex facts

Physics connects - interdisciplinary projects
Physics research at the University of Bayreuth contributes central building blocks to the university's research priorities in the natural sciences, especially macromolecular research, nonlinear dynamics and pattern formation, and materials science. Collaborations with partner universities and research institutions around the world provide research and teaching with valuable impetus and offer a broad range of opportunities for students to get involved.

Career Prospects
Investigating complex interrelationships in the natural sciences provides students with skills that are currently in high demand in science, technology, development, industry, and administration. Physics is increasingly becoming an indispensable factor in innovation in a broad spectrum of occupational fields. Demand for physics graduates is expected to grow 50% over the next 15 years. For this reason, a programme of study geared towards current research topics provides an excellent basis for launching your career.

Course Details

Course organisation

The Master's programme allows a high flexibility for each student in choosing the order and the topics of his/her courses. The programme is designed for two years and can last for a maximum of three years.

The first year focuses on advanced courses (60 credits) and the second year is fully research-oriented (60 credits) as described in the following:

The first year is composed of several blocks (modules).

"Advanced Experimental Physics" (6 credits):
Several advanced courses (6 credits) are offered every year which are eligible for this block.

"Advanced Theoretical Physics" (9 credits):
Four advanced courses (Advanced Quantum Mechanics, Physics of Continua, Theoretical Condensed Matter Physics, Nonequilibrium Thermodynamics and Statistical Physics) are offered every year (9 credits each), and one is compulsory for the module.

"Physics Internship" (6 credits)
Students can select between different advanced experiments that are closely related to current research.

The modules "Physics Focus" (12 credits), "Physics Specialisation" (6 credits) and "Advanced Seminar Physics" (6 credits) allow each student to select the subfields of her/his major interest in physics.

The module "Elective A" (9 credits) and the module "Elective B" (6 credits) allow each Master's student to develop his/her interdisciplinary expertise. Each student can select both modules from a rich pool of courses in neighbouring fields, including Biology, Chemistry, Computer Science, Engineering, Earth Science, Mathematics, or Economics.

The second year of the Master's programme is fully research-oriented. It includes the Project Seminar, the Research Project, and the Master's thesis. It is designed to foster the student's ability to carry out independent scientific work. The Project Seminar and the Research Project prepare students for the Master's thesis. Active participation in both is required. The second year is

	completed with a Master's thesis (30 credits), which is prepared in international research teams. The Master' thesis has the weight of 60 credits (about 50 percent weight of the Master's programme).
International elements	• International guest lecturers • Specialist literature in other languages • Language training provided
Course-specific, integrated German language courses	No
Course-specific, integrated English language courses	No

Costs / Funding

Tuition fees per semester in EUR	None
Semester contribution	In Germany, students at all higher education institutions pay a semester contribution. This payment (University of Bayreuth: 142.85 EUR per semester) has nothing to do with tuition fees; rather, it covers your contributions to student services and the student government. At the University of Bayreuth (which combines the campus in Bayreuth and our Faculty VII located in Kulmbach), it includes a "semester ticket" that allows you to use public transport in the region.
Costs of living	The cost of living in Germany, e.g. accommodation, food, clothing and recreational activities, is about average compared to other European countries. Living expenses are significantly lower than in countries like Denmark, Luxembourg or Switzerland, but they are rather high compared to countries like Poland, the Czech Republic or Italy. Compared to other large German cities, such as Munich, Berlin or Hamburg, Bayreuth's low cost of living and affordable housing make the city and the region particularly attractive to young people and families. The DAAD website will tell you what living expenses to expect in Germany: https://www.daad.de/deutschland/nach-deutschland/voraussetzungen/en/9198-financing/.
Funding opportunities within the university	Yes
Description of the above-mentioned funding opportunities within the university	**Scholarships for international students:** International students and doctoral researchers have the opportunity to apply to the International Office for a study grant. Limited funding from the State of Bavaria and the DAAD is available for this purpose. The application deadline for the **winter semester is 31 August and for the summer semester 28 February**. All grants can be awarded for up to two semesters. Unfortunately, first-semester students cannot be funded, i.e. applications cannot be submitted until the second semester of study for funding starting in the third semester of study. Above all, academic achievements from the previous semester are decisive for the evaluation of the application.

Requirements / Registration

Academic admission requirements	Bachelor's degree in physics or equivalent
Language requirements	Applicants need to provide evidence of a B2 level German language certificate (according to the Common European Framework). Additionally, they need to have excellent skills in English.
Application deadline	**Application for EU citizens** 15 April to mid-October (winter semester) 15 October to mid-April (summer semester) **Application for non-EU citizens** 15 April to 15 July (winter semester) 15 October to 15 January (summer semester)
Submit application to	Online application via CAMPUSonline. You can find further details here.

Services

Possibility of finding part-time employment	There are many ways for international students to earn money while they study, but there are some restrictions. For more detailed information, please visit the DAAD website. The University of Bayreuth's Career Services team provides a central interface between student and professional life. The team offers guidance and support to students of all subjects with regard to starting their careers. For information regarding the **Corona virus**, please visit our website and also see https://www.daad.de/en/coronavirus/.
Accommodation	**Accommodation for students** Bayreuth and Kulmbach have a number of student dormitories (both private dormitories and dormitories offered by the Association for Student Affairs) and a vast array of private rooms available. Under no circumstances should you assume that you will be assigned a room in the student dormitories! You will need to actively search for a room on your own – either in a private dormitory or on the private market. More information regarding accommodation for students is available here:https://www.uni-bayreuth.de/en/studies/accomodation/index.html. Please also read the DAAD's information. **Accommodation for international guests** All other international guests are requested to register via the Welcome Services Database (WelSe). **Accommodation for short visits** For short visits, we recommend searching for accommodation on Airbnb. In addition, a limited number of apartments are available in the Alexander von Humboldt Guest House.
Support for international students and doctoral candidates	• Welcome event • Buddy programme • Visa matters • Pick-up service

Contact

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