



Deutscher Akademischer Austauschdienst
German Academic Exchange Service



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Master's degree



Materials Science and Simulation

Ruhr-Universität Bochum • Bochum

Overview

Degree	Master of Science (MSc)
Teaching language	English
Languages	Participants can choose to write the Master's thesis in either English or German.
Full-time / part-time	full-time
Programme duration	4 semesters
Beginning	Winter semester
Application deadline	- Non-EU applicants: 15 March and 15 June for the following winter semester (we offer two deadlines with regard to different visa procedures) - EU applicants: 15 September for the following winter semester
Tuition fees per semester in EUR	None
Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No
Description/content	Students will obtain a comprehensive knowledge of materials science, physics and numerical methods. In particular, successful students will develop a profound knowledge and practical experience in applying advanced numerical and experimental methods on all the length and time scales that are relevant for materials. Thus, the Master's course will prepare excellent young scientists for successful careers in industry and academia. The curriculum was set up and will be continuously revised in coordination with the ICAMS industrial partners, ensuring the maintenance of the programme's high standards in meeting the demands of current and future developments in research and industry. Throughout this course, students acquire a basic knowledge in advanced experimental and numerical methods in materials science and engineering. In optional and specialisation lectures, the students can widen their outlook and deepen their basic knowledge on current challenges in materials sciences. They also have the possibility to gain practical experience by participating in research projects. Thus, they will gain hands-on experience with state-of-the-art numerical and experimental methods and develop the competences and skills required for problem solving.

Course Details

Course organisation	The two-year, four-semester programme comprises basic and compulsory lectures imparting a thorough, science-based understanding of the behaviour of engineering materials of all kinds. In the first semester, students with different backgrounds have the possibility to acquire the knowledge that is required to successfully work in this Master's course of study. In this way, topics that were not covered by the previous course of study, e.g. solid state physics for engineers or materials technology for students with a physics background, are caught up on. In the second and third semester, students attend compulsory courses that focus on the basics in materials science, microstructure-property relations, solid state physics, thermodynamics and materials processing and numerical modelling. As part of their specialisation, students select further optional lectures of their interest from the fields of modelling and simulation, and processing and characterisation. In the final semester, students prepare their Master's theses. Supported by mentors, they work on a scientific project and compile their research results in a final report. Throughout the Master's course of study, students attend lectures in professional key competences (soft skills). » PDF Download
A Diploma supplement will be issued	Yes
International elements	• International guest lecturers • Specialist literature in other languages • Language training provided • Study trips • Projects with partners in Germany and abroad
Integrated internships	• It is not obligatory to do an internship, but it is possible to integrate it in the third semester of study. • Students have the opportunity to apply for a LabExchange programme grant (duration: two weeks, max. four months). LabExchange helps students conduct short-term research at a partner university abroad, e.g. lab, and research internships, research in archives, libraries and university collections, collaboration in research projects, etc.
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	Students have to pay a social contribution fee of approx. 360 EUR per semester, including a semester ticket covering public transport in the entire state of North Rhine-Westphalia.
Costs of living	Minimum of 950 EUR per month to cover personal and living expenses

Funding opportunities within the university	Yes
Description of the above-mentioned funding opportunities within the university	Students with outstanding academic performance who are involved in special social activities can receive 300 EUR per month for a year from the Ruhr-Universität Scholarship Fund "Deutschlandstipendium": https://studium.ruhr-uni-bochum.de/en/deutschlandstipendium-information-students . International students with good to very good academic performance who need financial support during the final phase of study can receive a graduation grant of 400 EUR per month for four months from the International Office at RUB: https://international.ruhr-uni-bochum.de/en/graduation-grant-international-students .

Requirements / Registration

Academic admission requirements	• A Bachelor's (BSc) or comparable degree in one of the following or related disciplines: materials science, mechanical engineering, physics, chemical engineering, chemistry, or nanotechnology • Adequate English language skills • Academic achievement in the following subjects is required: material sciences, solid-state physics, physical chemistry or related subjects and in mathematics, numerical mathematics advanced programming language or other comparable subjects. For further details, please see the programme's website. • Students who have failed to pass any degree in the above-mentioned disciplines cannot apply for the Master's programme. The examination board of the Master's course is entitled to raise further requirements in individual cases.
Language requirements	To be accepted to the programme, at least one of the following requirements must be fulfilled: • Native English speaker • TOEFL: minimum score 550 points paper-based, 215 computer-based or 79 Internet-based; the TOEFL score must be sent to us directly from ETS after acceptance to the programme; institution code: 3580. • IELTS: minimum score 6.0; the IELTS score must be sent to us directly from the testing centre after acceptance to the programme. • Certificate proving that English has been the language of instruction during the Bachelor's programme
Application deadline	• Non-EU applicants: 15 March and 15 June for the following winter semester (we offer two deadlines with regard to different visa procedures) • EU applicants: 15 September for the following winter semester
Submit application to	Applications can only be submitted online via the MSS website. MSS online application

Services

Accommodation	In the city of Bochum, you can find a variety of affordable and pleasant accommodations. On average, students in Bochum pay approximately 350 to 400 EUR per month for a single apartment,
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which is below the average rent in Germany. A room in a shared apartment is available from around 270 EUR.

About 5,000 students in Bochum live in 18 student halls close to the campus, which are run by the Akademisches Förderungswerk (AKAFÖ). In the halls, each student has his or her own single room and shares a kitchen and bathroom with other students, or alternatively, a student can rent an apartment with a private bathroom and kitchen or share an apartment with one or several flatmates.

More information on the student halls can be found at <https://www.akafoe.de/wohnen> and <https://studium.ruhr-uni-bochum.de/de/wohnen>.

In addition, eight private and church-affiliated student halls accommodate up to 1,000 students: <http://www.stuwo.de/wohnheim-region/bochum/>.

Career advisory service

MSS coordinators and lecturers give advice.
Further information: RUB Career Service, RUB CrossING

Support for international students and doctoral candidates

- Welcome event
- Specialist counselling
- Visa matters
- Tutors

Contact

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📷 <https://www.instagram.com/materialsscienceandsimulation/?hl=de>

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Disclaimer

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