Deutscher Akademischer Austauschdienst
German Academic Exchange Service

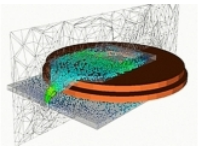
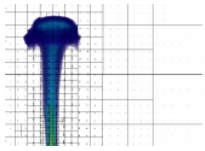
Table of Contents

Master's degree

Computer Simulation in Science (MSc)

University of Wuppertal • Wuppertal



Overview

Degree	Master of Science (MSc) in Computer Simulation in Science
Teaching language	• English
Languages	The entire programme is taught exclusively in English.
Full-time / part-time	• full-time
Programme duration	4 semesters
Beginning	Winter semester
Application deadline	**I. Formal Application: 15 March to 15 June** Applications including the Bachelor's transcript and the scientific check sheetmust be sent to the Application Service for International Students: uni-assist e.V. For further information on the uni-assist application procedure, visit https://www.uni-assist.de/en/. Applications are accepted even if the Bachelor's programme is not yet completed. **Submit your most recent transcript.** Applicants from the PRC, Mongolia, Vietnam, and India should enclose their APS certificate with their application. For more detailed information, please see https://www.csis.uni-wuppertal.de/en/application. For applicants with a German Bachelor's degree, a different application procedure applies; please check the aforementioned website. **II. Scientific Check:** After a positive check by uni-assist, applications will be reviewed by the admission committee to check that the educational backgrounds comply with the scientific requirements of the study programme. Admission letters will be issued by the **office for student admission and registration for international students**.
Tuition fees per semester in EUR	None

Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No
Description/content	The MSc programme in Computer Simulation in Science (CSiS) focuses on the development, implementation, and application of computer-oriented simulation techniques and methods to modern research problems in natural sciences and engineering. All courses of this MSc programme are taught in English. Students choose a field of advanced studies from atmospheric physics, computational electromagnetics, computational finance, computational fluid mechanics, detector physics, imaging in medicine, molecular and materials modelling, or theoretical particle physics. Preliminary knowledge at Bachelor's level in the chosen subject and knowledge of at least one programming language is required. A parallel computer dedicated to the Master's study programme has been installed at the university. Extensive computer lab courses are part of the curriculum. Contacts have been established with Trinity College Dublin and FZ Jülich since January 2009.

Course Details

Course organisation	Once the field of advanced studies has been selected, the course schedule consists mainly of mandatory courses. It is expected that students develop independent and responsible working skills. Substantial weekly homework is required in all courses. Presentations by the students are part of the preparation towards the Master's thesis. The MSc starts with a block course on mathematical foundations.**It starts one week before the official start of the teaching period and lasts for two weeks. It will be followed by an examination.** Students should check the dates on the programme website. The module handbook containing the detailed course descriptions can be found on the website: https://www.csis.uni-wuppertal.de/en/program-curriculum/module-reference-book/.
A Diploma supplement will be issued	Yes
International elements	• Language training provided • Study trips • Courses are led with foreign partners • Projects with partners in Germany and abroad • International comparisons and thematic reference to the international context
Description of other international elements	Due to good external contacts, the students of the CSiS programme benefit from the opportunity to work occasionally at external institutes or universities during their studies or their Master's theses. Furthermore, there is a number of cooperation agreements with other European universities in the framework of the ERASMUS programme.
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	There are no enrolment fees. Students have to pay a compulsory fee, including a social contribution called "Sozialbeitrag", a contribution to the student body called a "Studentenschaftsbeitrag", and a fee for the "NRW Ticket" for public transport within the state of North Rhine-Westphalia. The compulsory fee amounts to about 300 EUR per semester and is not a university fee.
Costs of living	A student's monthly expenses, including accommodation, cost of living, health insurance, and learning materials, will be approx. 700 to 750 EUR.
Funding opportunities within the university	No

Requirements / Registration

Academic admission requirements

- Bachelor's degree or German Diploma ("Diplom") degree in applied science, chemistry, electrical engineering, computational finance, mathematics, mechanical engineering, physics, safety engineering, or in a related field. The regular length of the Bachelor's study programme should equal at least six semesters, and it should correspond to 180 ECTS credits.
- The Master's course of study requires advanced knowledge in one of the fields of specialisation: atmospheric physics, computational electromagnetics, computational finance, computational fluid mechanics, detector physics, imaging in medicine, molecular and materials modelling, or theoretical particle physics. Knowledge of mathematics corresponding to a Bachelor of Science or Engineering is also required.
- Knowledge of at least one programming language corresponding to eight ECTS
- A self-assessment of programming skills is provided on the website.**It is a mandatory step on the scientific check sheet.**
- Self-assessment for each specialisation is also provided on the website.
- On a case-by-case basis, a**digital qualification evaluation exammay be required.**

Please refer to https://www.csis.uni-wuppertal.de/en/application.html to see the documents required for application.

If you are not a German citizen, include a completed copy of thisapplication form.

Language requirements

If you are an international student, you are required to have sufficiently good proficiency in English, documented by providing the results of a recently passed Test of English as a Foreign Language (TOEFL), International English Language Testing System (IELTS, academic module), a Cambridge Certificate in Advanced English (level 4), or another language certificate at level B2 of the European Framework of Reference. The minimum scores for TOEFL and IELTS are as follows:

- TOEFL iBT (Internet-based) 79 points
- TOEFL PBT (paper-based) 550 points
- IELTS academic module 6.0 band score

The TOEFL code of uni-assist is 2727.

If you can prove that your Bachelor's courses were taught in English, an additional language test is not required.

If you are a student with a German Bachelor's degree, you are required to prove English language skills at level B2 (Abitur).

Application deadline	**I. Formal Application: 15 March to 15 June** Applications including the Bachelor's transcript and the scientific check sheetmust be sent to the Application Service for International Students: uni-assist e.V. For further information on the uni-assist application procedure, visit https://www.uni-assist.de/en/. Applications are accepted even if the Bachelor's programme is not yet completed. **Submit your most recent transcript.** Applicants from the PRC, Mongolia, Vietnam, and India should enclose their APS certificate with their application. For more detailed information, please see https://www.csis.uni-wuppertal.de/en/application. For applicants with a German Bachelor's degree, a different application procedure applies; please check the aforementioned website. **II. Scientific Check:** After a positive check by uni-assist, applications will be reviewed by the admission committee to check that the educational backgrounds comply with the scientific requirements of the study programme. Admission letters will be issued by the **office for student admission and registration for international students**.
Submit application to	Uni-assist: University of Wuppertal c/o uni-assist e.V. 11507 Berlin Germany For further information, please refer to: https://www.csis.uni-wuppertal.de/en/application.html.

Services

Possibility of finding part-time employment	There are some possibilities to obtain a teaching or research assistant position after the first semester. However, such a position will not be sufficient to cover all living expenses. Non-EU students are allowed to work 120 full days or 240 half days. There are no limits on student part-time jobs at the university or at another academic or research institution.
Accommodation	You can either live in a hall of residence or rent a room/apartment off campus. There are eight on-campus halls of residence with a total capacity of about 1,200 places. The rooms are mostly rented unfurnished. Rent is approx. 250 EUR. You can obtain information and apply for a place in a student residence at: http://www.hochschul-sozialwerk-wuppertal.de/. As only a limited number of living quarters are available here, you can also inquire about private accommodation free of charge at the Central Accommodation Office of the University of Wuppertal Social Services Office. E-mail: wohnen@hsw.uni-wuppertal.de
Career advisory service	The Career Service of the university supports students and alumni or postdocs to find a suitable profession or a professional perspective. Their support includes: • Career counselling and coaching • Check of application documents

- Trainings (e.g. key competences, job interview training)
- Recruiting events and job database

Support for international students and doctoral candidates	• Welcome event • Buddy programme • Accompanying programme • Specialist counselling • Cultural and linguistic preparation

University of Wuppertal

The University of Wuppertal – Grifflenberg campus

© Bergische Universität Wuppertal

The University of Wuppertal is one of the state universities in North Rhine-Westphalia. Founded in 1972, it celebrated its 50th anniversary in 2022. The university excels in producing high quality, innovative research that translates into benefits both locally and worldwide. Academic culture is marked by diversity, experience and innovation – a perfect environment for developing inspiring ideas and academic projects that will shape the future. The close relationship between the university and regional as well as global enterprises provide interesting internship, research and employment opportunities.

The university with its nine schools, 31 departments and 44 research institutes offers a diverse range of study programmes in science, engineering economics and the humanities as well as educational science, design and architecture. Some 23,000 students from more than 100 countries benefit from the high-level academic approaches in teaching. The university's Language Learning Institute offers German language classes for all levels.

The University of Wuppertal has three campuses in the city of Wuppertal. The **main Grifflenberg campus** is located above the city of Wuppertal, as is the **Freudenberg campus**, a few minutes' walk away. The **Haspel campus**, on the other hand, is located directly in the valley in Wuppertal-Unterbarmen. A dense network of public transport makes it easy to travel between the campuses.

BERGISCHE UNIVERSITÄT WUPPERTAL

University location

Germany is an open-minded, cosmopolitan country and home to more than 82 million people. Wuppertal, situated in North Rhine-Westphalia (NRW), which is economically the most significant German state with an outstanding educational and cultural landscape, is one

of Germany's largest university towns with some 350,000 inhabitants. It is an interesting mixture of outgoing metropolis and cosy village with a lot of leisure facilities. Due to the excellent train and transport network, you can travel within one hour from Wuppertal to Cologne, Bonn, Dortmund, Düsseldorf and many other cities.

One of the biggest attractions in Wuppertal is the**suspension railway** line, which carries passengers 12 metres over and above the Wupper River from the city centre to the surrounding city districts. The cars are suspended from a rail with wheels integrated into the roof, which makes you feel as if you are floating in the air.

This former industrial city looks back at an eventful history. The water power of the Wupper River was in every respect the formative element for the town. It is the basis of Wuppertal's unique industrial history. The German philosopher Friedrich Engels is one of Wuppertal's most famous sons; you can learn more about his life and achievements at the **Engels House**. The **Von der Heydt Art Museum** is worth visiting for its impressive architecture alone, as is the **Historische Stadthalle Wuppertal**, which is acoustically among the best concert halls in Europe. Enjoy the easy-going atmosphere of the city on a long stroll through the city centre and the many gardens, parks and woods. Wuppertal is one of the greenest major cities in Germany. Five Wuppertal parks are part of the European Garden Network EGHN – more than in any other European city.

All in all, Wuppertal is a great place for recreation and relaxation. If you like hiking and enjoying nature, but also want the experience of city life, you'll find ideal conditions for studying here.

The University City of Wuppertal

NRW Tourism

Wuppertal tourism and city information

Stadthalle Wuppertal

Contact

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