



Deutscher Akademischer Austauschdienst
German Academic Exchange Service



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Master's degree



Medical Systems Engineering (MSE)

Otto von Guericke University Magdeburg • Magdeburg



Overview

Degree	Master of Science
Teaching language	<ul style="list-style-type: none">English
Languages	English (100%)
Full-time / part-time	<ul style="list-style-type: none">full-time
Programme duration	4 semesters
Beginning	Summer semester
Additional information on beginning, duration and mode of study	The course is designed as a face-to-face course and is supplemented by online elements.
Application deadline	Internationals: 15 December Nationals: 15 March
Tuition fees per semester in EUR	None
Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No
Description/content	With the interdisciplinary Master's degree in Medical Systems Engineering, the Otto von Guericke University (OVGU) offers a combination of different engineering disciplines with a constant focus on the application of knowledge from these disciplines in the field of medicine. The engineering fundamentals gained from a technical Bachelor's degree will be expanded accordingly in the Master's degree. Based on this prior knowledge of engineering and natural sciences, the Master's programme offers in-depth studies of medical systems engineering, in particular medical technology, medical informatics, and medical physics. In addition, the various consolidations during the studies offer students the possibility to apply the acquired knowledge to real medical

questions. The students can specialise and gain broad knowledge in the following fields: medical imaging, neuroscience, medical interventions, and deep learning.

Due to close contact with the Magdeburg University Hospital, the students have the extraordinary chance to take part in surgeries and see the daily clinical work, recognise existing problems, and develop solutions that support or help the physician and/or patients.

Course Details

Course organisation

The modularly structured course is divided into compulsory and selectable specialisation modules. The compulsory modules, which take place mostly in the first semester, provide the basics in the different areas of medical technology. In the further semesters, the students then have the opportunity to choose from the various focus modules and to specialise in the corresponding fields.

You can choose from the following specialisations:

- Medical Imaging
- Radiation and Medical Physics
- Magnetic Resonance (MR) Theory and Engineering
- Mechanical- and Flow-Simulation in Medical Engineering
- Medical Visualisations & Interventions
- AI in Image and Signal Processing
- Physiological and Biological Systems & Modelling
- Medical Regulatory Affairs

There is also the opportunity for research-oriented students to follow the so-called "Research Track". In this track, a 15-credit point research project can already be undertaken from the second semester onwards. This can be done in the context of projects at universities, at research institutions, or in companies. For this practical experience, the OVGU offers students a large cooperative network in the field of medical technology.

A Diploma supplement will be issued

Yes

International elements

- International guest lecturers
- Courses are led with foreign partners
- Projects with partners in Germany and abroad
- Content-related regional focus

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

Currently, the semester fee is 155.20 EUR. It covers services offered by the "Studentenwerk" (student union) and the student representatives. Enrolled students receive a semester ticket for free use of public transport, student discounts in the campus cafeteria, etc.

Costs of living	A minimum of 861 EUR per month must be budgeted for accommodation, cost of living, health insurance, books, and miscellaneous expenses. In comparison with many other towns and cities, the rental prices in Magdeburg are still relatively low. There are no tuition fees for the majority of programmes, and the semester fee already includes the cost of bus and tram travel within Magdeburg. The following link provides a fair picture of the cost of living in Magdeburg: Finance .
Funding opportunities within the university	Yes
Description of the above-mentioned funding opportunities within the university	The university provides a limited number of excellence scholarships. Eligible candidates are students in advanced semesters who clearly show above-average results. Scholarships cannot be provided for new students.

Requirements / Registration

Academic admission requirements	<p>The applicants should have a Bachelor's degree or equivalent degree in Electrical Engineering, Information Technology, Computer Science, Medical Technology, or comparable technical courses with an average grade of at least "good" (up to 2.5 in the German academic grading system).</p> <p>The completed degree should comprise :</p> <ul style="list-style-type: none"> • at least 20 CP (according to ECTS) in the field of mathematics • at least 15 CP (according to ECTS) in the field of physics / medical physics • at least 20 CP (according to ECTS) in the field of electrical and information technology / electronics • at least 10 CP (according to ECTS) in the field of computer science / programming • at least 5 CP (according to ECTS) in the field of anatomy/ physiology
Language requirements	<p>Applicants must have sufficient knowledge of the English language (Level B2 of the Common European Framework of Reference for Languages [CEFR]).</p> <ul style="list-style-type: none"> • TOEFL iBT (Test of English as a Foreign Language) – at least 90 points • IELTS (International English Language Testing System) – at least 6.5 points • Similar evidence corresponding to level B2 of the Common European Framework of Reference for Languages (CEFR).
Application deadline	<p>Internationals: 15 December</p> <p>Nationals: 15 March</p>
Submit application to	Applicants with an international Bachelor's degree must apply via uni-assist: http://www.uni-assist.de/

Services

Possibility of finding part-time employment	It is possible to find a part-time job as a research or student assistant at one of the faculties or in the university administration (maximum: 80 hours per month). Other opportunities are student jobs at different companies, restaurants, and shops. Information on how to find a job can be found on our website: Career Service .
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Accommodation

The "Studentenwerk" (student union) in Magdeburg manages the on-campus halls of residence (mostly one- to four-room apartments). Currently, the monthly rent ranges from 200 to 370 EUR per room (approx. 12 to 35 square meters), depending on the size and furnishing. Rooms in the halls of residence are limited in number. The accommodation application can be found on the website of the Studentenwerk.

The Studentenwerk assists all new students in finding adequate accommodation, either on or off campus. Private accommodation is available on the Magdeburg accommodation market. However, fully furnished units are in somewhat short supply.

Support for international students and doctoral candidates

- Tutors
- Welcome event

— Otto von Guericke University Magdeburg —



Otto von Guericke University Magdeburg (OVGU) was founded in 1993 and is one of Germany's youngest universities. It was formed by a merger of the existing technical university, the teacher training college, and the medical school. The university now comprises nine faculties and about 14,000 students and is becoming increasingly more important as a centre for education and research. It plays an important role in the regional capital of Magdeburg, which is developing into a centre for business, scholarship, and culture. The university is a member of many organisations and committees. It is named after Otto von Guericke (1602-1686), Magdeburg's famous citizen, whose pioneering research into the vacuum brought him renown well beyond Germany's borders. The university aspires to teach and research in the tradition of this great scientist, philosopher, and engineer and to continue with his humanist work.

At the Otto von Guericke University Magdeburg, students can choose from more than 90 degree courses in various areas of study and specialisation. In addition to these, a range of postgraduate courses are offered. There are also many possibilities to combine different subjects across faculties. The conditions for students are ideal, with modern laboratories, experimental workshops, and clinics equipped with high-performance computers and an excellent staff-student ratio. The offer of a sound, thorough education, combining a high level of theoretical expertise with practical experience, makes Magdeburg an attractive choice.

In recent years, research at the university has gone through a decisive change, from applied research to innovative, fundamental research. Among the many areas represented, the neurosciences, immunology, non-linear systems, new materials, processes and products, computational visualistics, social transformation, communication, and culture deserve a special mention. The university hopes to make a significant contribution to economic and social development in Magdeburg and the surrounding area through its research. Equally, disciplines such as humanities, economics, and management, which have been established more recently at the university, have already made their mark on our research profile. Special emphasis is placed on close cooperation between teaching staff and students.

Magdeburg also attracts students because it offers accommodation with either a single bed or twin beds in its halls of residence.

Take a virtual trip through our international campus!



University location

As the capital of the federal state of Saxony-Anhalt, Magdeburg is the seat of the state parliament and administration. The town is more than 1,200 years old and has about 234,000 inhabitants. Its excellent location on the River Elbe and its proximity to Berlin, Hanover, and Leipzig have proven to be a significant asset to the city. In the 19th century, the town developed into an important industrial and trade centre. Nowadays, another quite distinctive feature of Magdeburg is its considerable research and innovation potential at the university, the Max Planck and Fraunhofer research institutes, and the university of applied sciences, which are all located in close proximity to each other. Magdeburg offers an extensive park and garden landscape, a rich cultural and sports life, and an ideal atmosphere for being a student. Please visit the website: www.magdeburg.de.

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🌐 Course website: <https://www.ovgu.de/unimagdeburg/en/Study/Study+Programmes/Master/Medical+Systems+Engineering-p-17659.html>

📘 <http://www.facebook.com/OVGU.Magdeburg>

🐦 <http://www.twitter.com/OVGUpresse>

🌐 <https://www.linkedin.com/school/otto-von-guericke-university-magdeburg/>

📷 http://www.instagram.com/uni_magdeburg

📺 <https://www.youtube.com/channel/UCX7sej01ntgujN3NiIAUkUw>

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International Programmes in Germany - Database

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www.daad.de/sommerkurse

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