Deutscher Akademischer Austauschdienst
German Academic Exchange Service

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Master's degree

Master's Degree Course in Electronics Engineering

Bremen University of Applied Sciences • Bremen

Overview

Degree	Master of Science in Electronics Engineering
Teaching language	• English
Languages	Courses are held in English (100%). Participants can choose to write their Master's theses in English or German.
Full-time / part-time	• full-time
Programme duration	3 semesters
Beginning	Winter and summer semester
Additional information on beginning, duration and mode of study	Winter semester lectures start 15 October 2023 and end 2 February 2024. Summer semester lectures start 2 April 2024 and end 5 July 2024. All courses are taught in person and include intense practical lab work. Lectures are supported by blended learning methods. Find more info: https://www.hs-bremen.de/en/study/degree-programme/electronics-engineering-msc/
Application deadline	**Non-EU applicants** for the following • **winter semester:** 15 April • **summer semester:** 15 October via https://www.msc-ee.hs-bremen.de **EU applicants** for the following • **winter semester:** 15 July • **summer semester:** 15 January via https://campino.hs-bremen.de/qisserver/pages/cs/sys/portal/hisinoneStartPage.faces
Tuition fees per semester in EUR	Varied
Additional information on tuition fees	One-off service fee of 1,300 EUR at the beginning of the first semester for International Student Assistance (ISA) as an additional service package

Combined Master's degree / PhD programme	No
Joint degree / double degree programme	No
Description/content	The Master's degree course of study in Electronics Engineering comprises**three course profiles:** • **Microsystems Engineering** **Content:** ◦ laser microprocessing ◦ microstructuring of silicon ◦ FPGA programming ◦ design of integrated circuits and systems ◦ mixed signal systems design ◦ microsensors and microactuators ◦ medical, environmental and automotive applications of microsystems • **Intelligent Sensors and Instrumentation** Miniaturised, intelligent and networked sensors and actuators are the basis for IIoT (industrial Internet of things), Industry 4.0 and numerous future applications with artificial intelligence. By integrating signal processing, inferential statistics, and AI methods at the sensor or edge level, it becomes possible to develop autonomous systems and efficient IIoT solutions. **Content:** ◦ automated measurement and test ◦ machine learning ◦ laser measurement ◦ pattern recognition ◦ lightwave measurement ◦ signal processing in measurement and instrumentation ◦ optical sensors ◦ electrical measurement of non-electric quantities ◦ IIOT concepts: ▪ intelligent sensors: ▪ incorporate signal processing capabilities ▪ perform data preprocessing ▪ communicate via a variety of interfaces ▪ decide at machine/process level ▪ reduce amount of data sent to cloud ▪ sensors, machines, SCADA (supervisory control and data acquisition), ERP (enterprise resource planning) and humans are constantly connected ▪ intelligent sensors use: ▪ digital signal processing ▪ machine learning ▪ artificial intelligence ▪ wired/wireless communication • **Communication** Systems Engineering **Content**: ◦ satellite and wireless communications ◦ optical communications ◦ digital signal processing ◦ microwave engineering ◦ underwater acoustics and SONAR

Course Details

Course organisation	Each semester comprises five modules, each with 6 ECTS credits. A workload of 30 hours corresponds to 1 ECTS credit. Structure of the course of studies: • first semester, 20 hours/week: 30 credits • second semester, 20 hours/week: 30 credits • thesis semester: 30 credits Hours per week represent**contact hours** in classes, seminars or laboratories. Each contact hour equals 45 minutes. Additionally, for each contact hour, students are expected to allocate 2 hours for self-paced studies. Credits indicate student workload according to ECTS standards. The course comprises three categories of modules: • Engineering core modules: compulsory modules, specific for each course profile • Economics and language modules: relevant for all three course profiles • Engineering required optional modules: selected to define the individual profiles In general, the modules comprise lectures with integrated exercises in small groups, seminars, laboratory work and projects/case studies. Assessments usually take place at the end of each semester. For the two semesters of teaching, the workload of 60 credits is distributed as follows: • engineering modules – 48 credits • economics and language modules – 12 credits » PDF Download
A Diploma supplement will be issued	Yes
International elements	• International guest lecturers • Training in intercultural skills
Integrated internships	None
Course-specific, integrated German language courses	Yes
Course-specific, integrated English language courses	No

Costs / Funding

Tuition fees per semester in EUR	Varied
Additional information on tuition fees	One-off service fee of 1,300 EUR at the beginning of the first semester for International Student Assistance (ISA) as an additional service package
Semester contribution	Approx. 400 EUR per semester

	The fee includes a semester ticket covering public transportation in the Bremen metropolitan area.
Costs of living	Food and meals cost approx. 300 EUR per month. Warm food and snacks are less expensive at the university's cafeterias. Local transport is included in the enrolment fee. Students receive a semester ticket that allows for free access to buses, trams and regional trains servicing Bremen and the surrounding area. Academic expenses amount to about 30 EUR per month, and use of the university library (with three locations) is free of charge. Health insurance costs approx. 80 EUR per month. Living expenses amount to approx. 700 EUR per month (including rent).
Funding opportunities within the university	No

Requirements / Registration

Academic admission requirements	• Bachelor's or equivalent first academic degree in electrical engineering, electronics, information engineering, engineering physics, microsystems, mechatronics, instrumentation, computer science or related disciplines, relevant to the programme • a final grade corresponding to German grade "good" or "very good" (minimum 2.5) according to uni-assist VPD • International students are required to have a CGPA (Cumulative Grade Point Average) of at least 3.00/4.00 or 7.50/10.00, a first class degree or have graduated first class with distinction (for Indian universities with a percentage larger than 70%). • good knowledge of English (for details, please see language requirements) • basic knowledge of German (for details, please see language requirements) • references from two people in education or industry qualified to evaluate your ability and potential for graduate work (use our reference request form)
Language requirements	English: • English level C1 • Certificate in Advanced English (CAE) • IELTS 7.0–8.0 • TOEFL iBT 110–120 • a university certificate (if English was the main language of instruction during studies) Basic knowledge of German, certificate of the level of proficiency for non-native speakers (Goethe-Institut or university classes) or a confirmation from your university stating that German was a main language of instruction during studies.
Application deadline	**Non-EU applicants** for the following • **winter semester:** 15 April • **summer semester:** 15 October via https://www.msc-ee.hs-bremen.de **EU applicants** for the following • **winter semester:** 15 July • **summer semester:** 15 January via https://campino.hs-bremen.de/qisserver/pages/cs/sys/portal/hisinoneStartPage.faces
Submit application to	Hochschule Bremen City University of Applied Sciences

	School of Electrical Engineering and Computer Science Birgit Zich Neustadtswall 30 28199 Bremen Germany

Services

Possibility of finding part-time employment	Student jobs at institutes and labs
Accommodation	Accommodation support is provided as part of the ISA service package.
Support for international students and doctoral candidates	• Welcome event • Tutors • Visa matters • Pick-up service
Supervisor-student ratio	Approx. 1:20

Contact

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Last update 16.07.2024 18:53:23

International Programmes in Germany - Database

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Editor
DAAD - Deutscher Akademischer Austauschdienst e.V.
German Academic Exchange Service
Section K23 – Information on Studying in Germany
Kennedyallee 50
D-53175 Bonn
www.daad.de

GATE-Germany
Consortium for International Higher Education Marketing
www.gate-germany.de

The publication is funded by the German Federal Ministry of Education and Research and by contributions of the participating German institutions of higher education.