Deutscher Akademischer Austauschdienst
German Academic Exchange Service

Table of Contents

Master's degree

Embedded Systems

Chemnitz University of Technology • **Chemnitz**

Overview

Degree	Master of Science in Embedded Systems
Teaching language	• English
Languages	Courses are held in English (100%).
Programme duration	4 semesters
Beginning	Winter semester
Application deadline	15 July 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	This English-language Master's course of study provides a world-class education with a focus on embedded systems. The aim here is to develop intelligent systems solutions by combining microsystems technologies, information and communication technologies, and software development. The basic modules (compulsory subjects) are as follows: • Digital Components and Architectures for Data Processing • Smart Sensor Systems • Digital Signal Processing • Computer Vision • Design of Software for Embedded Systems • Real Time Systems • Project Lab Embedded Systems • Design of Digital Systems • Hardware/Software Co-Design 1 Built on these compulsory subjects, the programme offers various opportunities for further deepening in the following fields: • System Design • Automotive Systems • Signal Processing • Embedded Systems

- Additional non-technical subjects

Depending on the availability, the study programme offers the opportunity to do a research project at the university or a research internship (students choose one of these two options).

Course Details

Course organisation

Compulsory subjects – 47 CP:

- Dig. Components & Architectures for Data Processing (semester one, lecture/seminar/lab)
- Smart Sensor Systems (semester one, lecture/seminar/lab)
- Digital Signal Processing 1 (semester one, lecture/seminar)
- Computer Vision 1 (semester one, lecture/seminar)
- Design of Software for Embedded Systems (semester two, lecture/seminar)
- Real Time Systems (semester two, lecture/seminar)
- Project Lab Embedded Systems (semester two, seminar)
- Design of Digital Systems (semester one, lecture/seminar/lab)
- Hardware/Software Co-Design 1 (semester one, lecture/seminar)

Elective subjects:
Students have to pass subjects from the following catalogue in order to earn 43 CP:

Field of Systems design

- Design of Heterogeneous Systems (semester two, lecture/seminar/lab) – 5 CP
- Test of Digital and Mixed-Signal Circuits (semester one, lecture/seminar) – 5 CP
- Applied Circuit Design (semester three, seminar/lab) – 8 CP
- Verification of Digital Systems (semester two, lecture/seminar/lab) – 5 CP

Field of Automotive Systems:

- Advanced Platforms for Automotive Systems (semester three, lecture/seminar) – 5 CP
- Automotive Sensor Systems (semester two, lecture/seminar) – 5 CP

Field of Signal Processing:

- Image Processing & Pattern Recognition (semesters two and three, lecture/lab) – 5 CP
- Multisensorial Systems (semesters one and two, lecture/lab) – 5 CP
- Digital Signal Processing 2 (semester two, lecture/seminar) – 5 CP
- Video Signal Processing (semester two, lecture/seminar) – 3 CP
- Computer Vision 2 (semester two, lecture/seminar) – 5 CP
- Programming and Data Analysis (semester two, lecture/seminar) – 5 CP
- Mobile Localisation and Navigation (semester three, lecture/seminar) – 5 CP
- Antenna Engineering (semester two, lecture/seminar/lab) – 5 CP
- Next Generation Internet (semesters one and two, lecture) – 5 CP
- Advanced Mobile Networks (semesters one and two, lecture/seminar) – 5CP

Field of Embedded Systems:

- Advanced Embedded Systems (semester one, lecture/seminar) – 5 CP

Further elective subjects in non-technical field:

- Optimisation for Non-Mathematicians (semester three, lecture/seminar) – 6 CP
- Resource Efficiency from an Economic Perspective (semester three, lecture/seminar) – 5 CP
- Communication and Leadership (either semester 1 or 2 or 3, seminar) – 5 CP

Elective modules in research and internship:
Students choose one of these two options.

Research Project (at the university) – 10 CP
Research Internship – 30 CP

	Master's thesis (compulsory, final semester) – 30 CP
A Diploma supplement will be issued	Yes
International elements	• Projects with partners in Germany and abroad
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	All students have to pay a semester contribution of approx. 280 EUR. This fee also covers the semester ticket, which permits you to use buses and trams in Chemnitz during the semester. International students will receive the bank account details after admission with which they can transfer the semester contribution. However, the fee can also be paid after arrival in Chemnitz (by German bank card or transfer).
Costs of living	Approx. 934 EUR per month to cover personal expenses
Funding opportunities within the university	Yes
Description of the above-mentioned funding opportunities within the university	Incoming students can apply for different funding opportunities via the International Office of Chemnitz University of Technology: https://www.tu-chemnitz.de/international/incoming/stipendien/index.php.en.

Requirements / Registration

Academic admission requirements	• A Bachelor's degree in Electrical Engineering and Information Technology ("Bachelorstudiengang Elektrotechnik und Informationstechnik") from Chemnitz University of Technology. • Equivalent degree (individual decision by the board of examiners)
Language requirements	English: • IELTS from 5.5 • TOEFL iBT (Internet-based Test): min. 72 points • TOEFL PBT: min. 543 points • TOEFL ITP Level 1: min. 543 points • Cambridge Preliminary English Test + Result Distinction (PET)

	• Cambridge First Certificate in English: Grade B or C (FCE) • Cambridge English: Business Vantage (BEC Vantage), Legal (ILEC), Financial (ICFE) • Cambridge IGCSE: 1st or 2nd Language on average B2 • Pearson PTE Academic: min. 59 points • TOEIC: Listening and Reading Test min. 785 points, Speaking Test min. 160 points, Writing Test min. 150 points • telc B2 • UNIcert II • Study in English studies • completed degree with English as the language of instruction • proof of professional qualification as interpreter/translator Applicants from countries with English as official/educational or native language are not required to submit a proof of English language proficiency within their application. German (according to the general rules for enrolment at the university): • A1 (Goethe or ÖSD) to be provided with the application • A2 (CEFR) to be provided by the end of the third semester (Only) for doing the Research Internship elective module: German Level B2 (CEFR: Common European Framework of Reference for Languages)
Application deadline	15 July for the following winter semester
Submit application to	Technische Universität Chemnitz c/o uni-assist e.V. 11507 Berlin Germany Applications may be submitted online at https://www.uni-assist.de/en/. However, please note that it is mandatory to submit officially attested application documents of your educational certificates by post to uni-assist by the application deadline.

Services

Possibility of finding part-time employment	Students can find offers for part-time jobs, work placements etc. on the job portal offered by the Career Service of Chemnitz University of Technology: https://www.tu-chemnitz.de/career-service/jobboerse/.
Accommodation	The "Studentenwerk" Chemnitz-Zwickau runs several student residences. International students can apply for a single room in one of the residences. The prices depend on the size and furnishings of the room and vary between 210 EUR and 320 EUR: https://www.swcz.de/en/student-housing/our-halls-of-residence/.
Career advisory service	The Career Service of Chemnitz University of Technology supports students during their studies as well as graduates entering their professional life. The Career Service provides a platform for companies and institutions to present themselves: https://www.tu-chemnitz.de/career-service/index.php.en.
Support for international students and doctoral	• Buddy programme

candidates

Contact

Chemnitz University of Technology
Faculty of Electrical Engineering and Information Technology

Dr Jürgen Bräuer

Reichenhainer Straße 70
09126 Chemnitz

Tel. +49 37153135093
juergen.braeuer@etit.tu-chemnitz.de
Course website: https://www.tu-chemnitz.de/etit/studium/stugang/index.php?page=m_es

https://de-de.facebook.com/TUChemnitz

https://twitter.com/TUChemnitz

https://www.linkedin.com/school/technische-universitat-chemnitz/

https://www.instagram.com/tuchemnitz/

https://www.youtube.com/user/tuchemnitz

Last update 29.03.2024 11:10:48

International Programmes in Germany - Database

www.daad.de/international-programmes
www.daad.de/sommerkurse

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.