



Deutscher Akademischer Austauschdienst
German Academic Exchange Service



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Master's degree



Embedded Systems

Chemnitz University of Technology • Chemnitz

Overview

Degree	Master of Science in Embedded Systems
Teaching language	<ul style="list-style-type: none">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	<p>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.</p> <p>Foundational knowledge is established through the following general compulsory modules:</p> <ul style="list-style-type: none">Digital Components and Architectures for Data ProcessingDigital Signal Processing 1Computer Vision 1Smart Sensor SystemsProject Lab Embedded SystemsDesign of Software for Embedded SystemsReal Time SystemsDesign of Digital SystemsHardware/Software Co-design 1 <p>Built on these compulsory subjects, the programme offers various opportunities for further specialisation in the fields of System Design, Automotive Systems, Signal Processing, and Embedded Systems as well as additional non-technical subjects.</p> <p>Depending on the availability, the study programme offers the opportunity to do a research project at the university or a research internship.</p>

Course Details

Course organisation

Compulsory subjects – 47 CP:

- Digital Components and Architectures for Data Processing (semester 1, seminar)
- Digital Signal Processing 1 (semester 1, lecture/seminar)
- Computer Vision 1 (semester 1, lecture/seminar)
- Smart Sensor Systems (semester 1, lecture/seminar/lab)
- Project Lab Embedded Systems (semester 2, seminar)
- Design of Software for Embedded Systems (semester 2, lecture/seminar)
- Real Time Systems (semester 2, lecture/seminar)
- Design of Digital Systems (semester 1, lecture/seminar/lab)
- Hardware/Software Co-design 1 (semester 1, lecture/seminar)

Elective subjects:

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

Field of Systems Design:

- Verification of Digital Systems (semester 2, seminar/lab) – 5 CP
- Design of Heterogeneous Systems (semester 2, lecture/seminar/lab) – 5 CP
- Test of Digital and Mixed-Signal Circuits (semester 1, lecture/seminar) – 5 CP
- Applied Circuit Design (semester 3, seminar/lab) – 8 CP

Field of Automotive Systems:

- Automotive Sensor Systems (semester 2, lecture/seminar) – 5 CP
- Advanced Platforms for Automotive Systems (semester 3, lecture/seminar) – 5 CP

Field of Signal Processing:

- Multisensorial Systems (semesters 1&2, lecture/lab) – 5 CP
- Mobile Localisation and Navigation (semester 3, lecture/seminar) – 5 CP
- Image Processing and Pattern Recognition (semesters 2&3, lecture/lab) – 5 CP
- Digital Signal Processing 2 (semester 2, lecture/seminar) – 5 CP
- Computer Vision 2 (semester 2, lecture/seminar) – 5 CP
- Video Signal Processing (semester 2, lecture/seminar) – 3 CP
- Programming and Data Analysis (semester 2, lecture/seminar) – 5 CP
- Antenna Engineering (semester 2, lecture/seminar/lab) – 5 CP
- Next Generation Internet (semesters 1&2, lecture) – 5 CP
- Advanced Mobile Networks (semesters 1&2, lecture/seminar) – 5CP

Field of Embedded Systems:

- Advanced Embedded Systems (semester 1, lecture/seminar) – 5 CP

Further elective subjects in non-technical field:

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

Elective modules in research and internship:

(Students can choose a maximum of 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	<ul style="list-style-type: none"> 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. 296 EUR. This fee also covers the semester ticket, which permits you to use buses and trams in Chemnitz as well as regional trains throughout Germany 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	<ul style="list-style-type: none"> 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	<p>English:</p> <ul style="list-style-type: none"> 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
- UNlcert 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 proof of English language proficiency within their application.

German (according to the general rules for enrolment at the university):

- A1 (Goethe, telc, 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 Applications may be submitted online at <https://www.uni-assist.de/en>.
It is not necessary to send certified copies. Please note that uni-assist must receive all application documents 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 250 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 candidates

- Buddy programme

Contact

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🌐 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>

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International Programmes in Germany - Database

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www.gate-germany.de

Disclaimer

The data used for this database was collected and analysed in good faith and with due diligence. The DAAD and the Content5 AG accept no liability for the correctness of the data contained in the "International Programmes in Germany" and "Language and Short Courses in Germany".

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