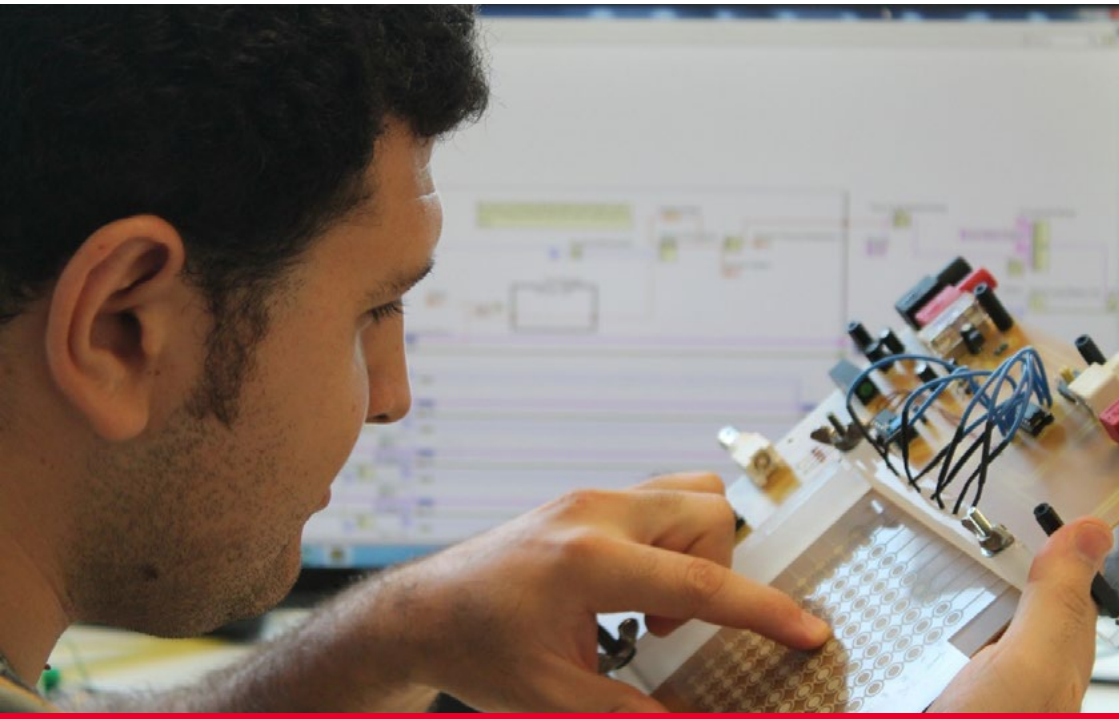
UNIVERSITY OF TECHNOLOGY
IN THE EUROPEAN CAPITAL OF CULTURE
CHEMNITZ

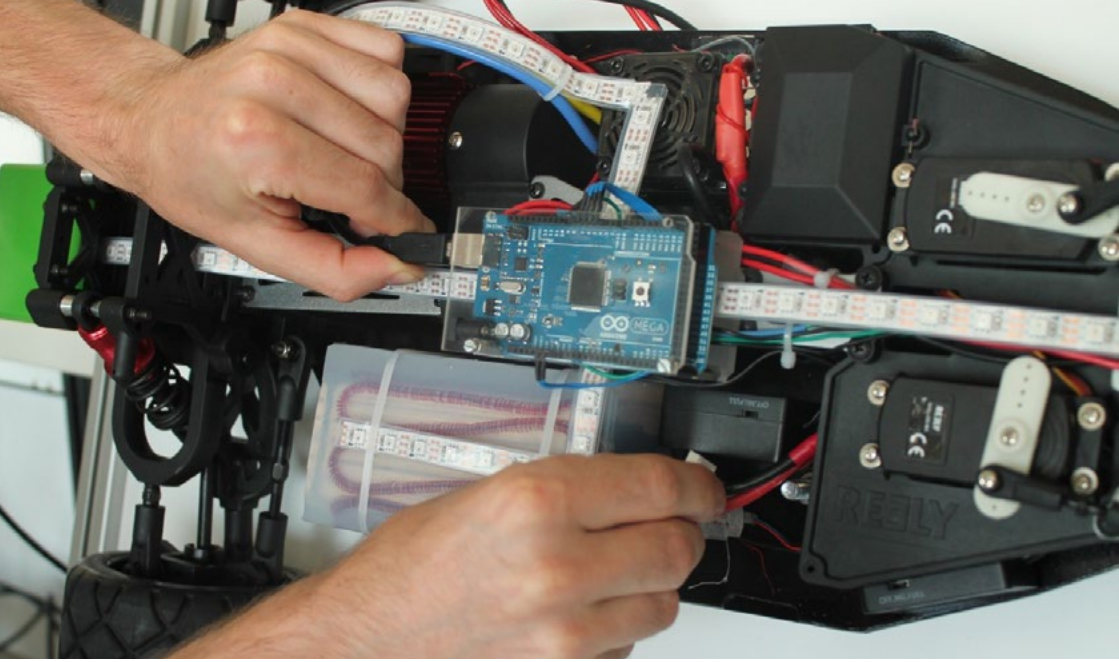
Embedded Systems

Faculty of Electrical Engineering and Information Technology

Master degree program



The demand for embedded systems in science and industry is increasing together with the increasing demand on automation, quality management, safety and efficiency. Graduates of the Embedded Systems Master's program are flexible engineers, which can easily integrate different sectors in research and industry.



What characterizes the Master degree program Embedded Systems?

Embedded systems are important in industry and research as a key technology and make our daily life more comfortable and safer. Embedded systems are ubiquitous, and today's economy and society would not survive without them. They drive innovation and help for diversification of products in terms of functionality, efficiency and quality. The English-language Master's Programme provides a world-class education with focus on future challenges of embedded systems. Graduates will gain the ability to solve engineering tasks at the interface between hardware and software. The aim here is to develop intelligent system solutions by combining microsystem technologies, information and communication technologies and software development. Therefore, besides the theoretical education also the practical training plays an important role.

"Sensor systems offer interesting examples for Embedded Systems. They need a dedicated electronics for signal acquisition and amplification. By means of digital signal processing the measurement information can be extracted and transmitted. The decision about hardware and software realization of system functionality needs experts which are educated in both fields."

Prof. Dr. Olfa Kanoun, Chair for Measurement and Sensor Technology

Degree Structure

Basic Modules (1st - 2nd semester)

- **Components for Embedded Systems:**
  Digital Components and Architectures for Data Processing, Smart Sensor Systems, Digital Signal Processing 1, Computer Vision 1, Design of Software for Embedded Systems, Real-Time Systems, Project Lab Embedded Systems
- **System Design:**
  Design of Digital Systems, Hardware/Software-Codesign I

Focal Modules (2nd - 3rd semester, Elective Modules)

- **System Design:**
  Design of Heterogeneous Systems, Test of Digital and Mixed-Signal Circuits, Hardware/Software Codesign II, Hardware Acceleration using FPGAs, Verification of Digital Systems
- **Automotive Systems:**
  Advanced Platforms for Automotive Systems, Automotive Sensor Systems
- **Signal Processing:**
  Image Processing and Pattern Recognition, Multisensorial Systems, Digital Signal Processing 2, Video Signal Processing, Computer Vision 2, Programming and Data Analysis, Mobile Localization and Navigation, Antennas and Wave Propagation, Self-Organizing Networks, Network Security
- **Embedded Systems:**
  Advanced Embedded Systems
- **Nontechnical Modules:**
  Optimization for non-Mathematicians, Management Accounting, Communication and Leadership

Module Research Project and Research Internship (3rd semester)

Module Master's Thesis (4th semester)

Career Opportunities

The possibilities for graduates are excellent both in science and in industry, because of the increasing importance and the high potential for innovation in embedded systems. The English Master's Programme trains the abilities to become a global player in his field. In addition, the occupation of leadership positions in management is also possible.

- Automotive industry
- Aerospace
- Sensor industry
- Chip industry
- Robotics
- Plant Engineering
- Software development
- Research

GENERAL INFORMATION

Admission requirements: in general vocationally-qualifying university bachelor's degree in Electrical Engineering and Information Technology or equivalent degree program with regard to content, English language proficiency at Level B2 and German language proficiency at level A2 according to the CEFR
Standard period of study: 4 semesters
Degree: Master of Science (M.Sc.)
Start of the degree program: usually winter semester
Language of tuition: English

FURTHER INFORMATION:

Studying in Chemnitz
www.study-in-chemnitz.com

Online application:
www.tu-chemnitz.de/studienbewerbung

FAQ - Frequently Asked Questions
www.tu-chemnitz.de/studentenservice/faq.php.en

Student Service Point
Straße der Nationen 62, room 043 (A10.043)
+49 371 531-33333
admission@tu-chemnitz.de

Central Course Guidance Service
Straße der Nationen 62, room 046 (A10.046)
+49 371 531-55555
studienberatung@tu-chemnitz.de

Academic Course Guidance
For an overview of all academic counsellors
www.tu-chemnitz.de/studienberater

Postal address
Technische Universität Chemnitz
Studierendenservice und Zentrale Studienberatung
09107 Chemnitz

For reasons of readability, the masculine gender was mostly used. However, the terms, titles and functions equally refer to all genders.

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Photos: Abdulkadir Sanly, Thomas Günther, private

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