

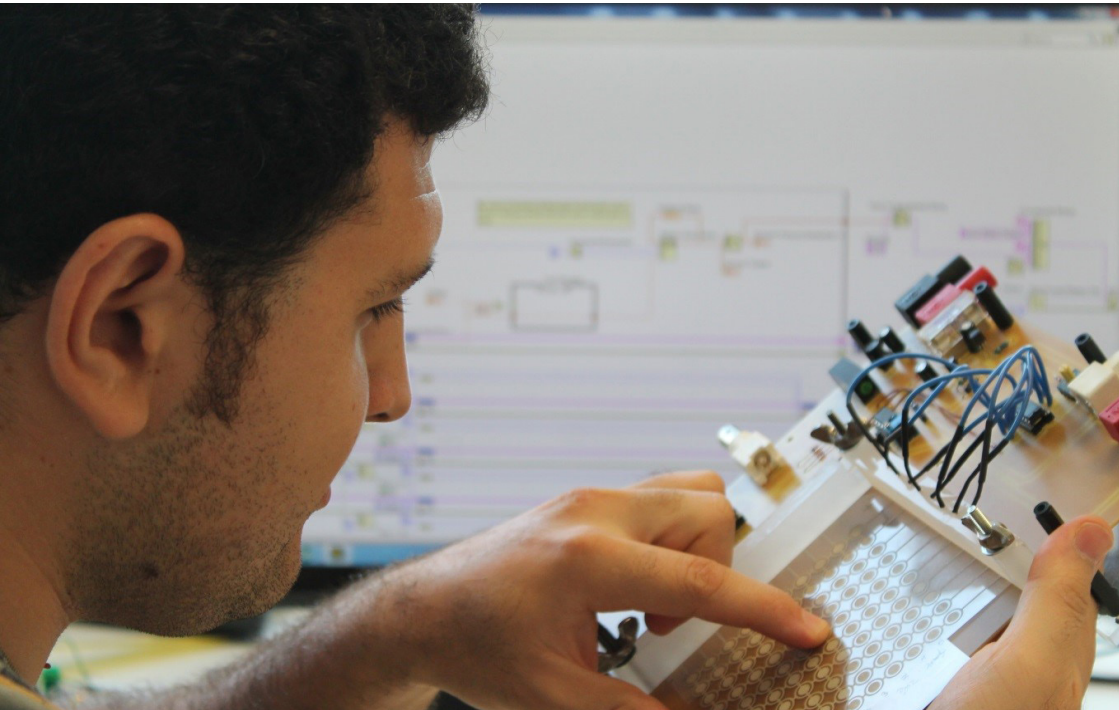


TECHNISCHE UNIVERSITÄT
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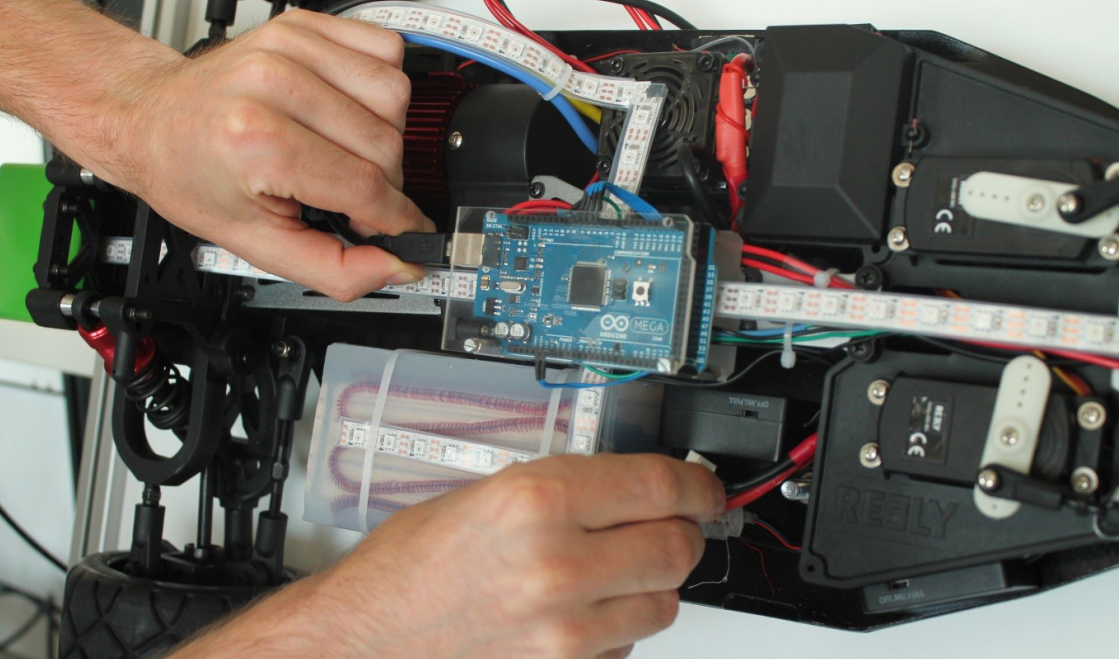
Embedded Systems

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:**

Components and Architectures of Embedded Systems I, Smart Sensor Systems, Digital Systems, Design of Software for Embedded Systems, Real-Time Systems, Project Lab Embedded Systems

- **System Design:**

EDA-Tools, Hardware/Software Codesign

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

- **System Design:**

System Design I, Design of Heterogeneous Systems, Design for Testability for Circuits and Systems, Realization of Digital Systems and DSP, Hardware/Software Codesign II

- **Tools for System Design:**

EDA-Tools II, Software Environments of Smartphone Applications

- **Automotive Systems:**

Software Platforms for Automotive Systems, Automotive Sensor Systems

- **Signal Processing:**

Image Processing and Pattern Recognition, Multisensorial Systems, TV- and Video-Signal Processing I and II, Computer Vision, Image Processing on Embedded Systems, Numerical Simulation with MATLAB, Mobile Localization and Navigation, Antennas and Wave Propagation, Self-Organizing Networks, Network Security

- **Nontechnical Modules:**

Optimization (for non-Mathematicians), Englisch in Studien- und Fachkommunikation V and VI (Niveau C1), Management Accounting, Communication and Leadership

Module Research Project (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 Information and Communication Technology, Electrical Engineering 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

For information concerning all aspects of studies please access:

www.tu-chemnitz.de/studentenservice/index.php.en

Online application for German students:

www.tu-chemnitz.de/studienbewerbung

Online application for international students:

www.uni-assist.de

Further information:

Technische Universität Chemnitz

Student Service Point

Straße der Nationen 62, room 043

09111 Chemnitz

+49 371 531-33333

studentensekretariat@tu-chemnitz.de

Academic Course Guidance

For an overview of all academic counsellors including contact details please access:

www.tu-chemnitz.de/studienberater

Central Course Guidance Service

Technische Universität Chemnitz

Central Course Guidance Service

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