

Automotive Software Engineering



„80 % of future innovations in the automobile industry will base upon electronics, 90 % of these on software.“

Klaus Grimm, Initiator of the GI-Professional group Automotive Software Engineering



**CHEMNITZ UNIVERSITY
OF TECHNOLOGY**



▶ What is Automotive Software Engineering all about?

For almost any industrial site motor vehicles, airplanes and machinery are core fields of application. The design of control systems in these areas relies on methods of computer science and engineering. Specific aspects of the development of these hardware/software systems are the main focus of this master's programme. The programme provides knowledge and skills in three fields:

- ▶ Automotive Software Technology
- ▶ Embedded Systems
- ▶ Real-time and Communication Systems

▶ Career Opportunities

Companies of the automobile and airplane industry, of the whole ancillary industry and the engineering look for graduates of this master's programme. Employment opportunities include:

- ▶ Product Development for Control Systems
- ▶ Application Research
- ▶ Quality Assurance

▶ Research

The master's programme is closely connected to the research programme "Embedded Self-Organizing Systems" (ESS) of the Faculty of Computer Science. Therefore, courses and practical trainings are partly integrated in current research projects.

Well-known industrial partners for example BMW and EADS offer opportunities for practical research trainings.



"I am studying Automotive Software Engineering at Chemnitz University of Technology because of excellent conditions: we develop course-related applications on original control devices of well-known automobile manufacturers, we work with data from original BMW test vehicles and attend lectures of guest professors who work for potential future employers and impart in-depth knowledge and practical experiences."

Chirill Svet, student, 4th semester



► Course Content

The **first two semesters** deepen the knowledge of the bachelor's programmes Computer Science, Applied Computer Science or Information and Communication Systems respectively.

Additionally, several fundamental aspects of the software design for embedded systems with focus on automotive systems will be taught in lectures and tutorials. The courses are based on an holistic approach to hardware/software systems.

During the **third semester** there is a transition from receptive to productive courses. The different fields of teaching will be consolidated in an advanced seminar. In addition to this seminar, the students perform a research internship at the faculty or with an industry partner. Through this the topics of teaching will be extensively explored and applied. By combining theoretical knowledge with practical skills an optimal groundwork for the master's thesis is laid.

Master's Thesis

The master's thesis can be written in German or English language during the **fourth semester** and will be integrated in an industrial or research-oriented context.

On approximately 80 pages the students demonstrate that they can solve a scientific problem independently. The results will be defended in a 30-minutes presentation.

► General Information

Requirements of admission: Bachelor's degree in Computer Science,

Applied Computer Science or a similar programme

Standard period of study: 4 semester

Degree: Master of Science (M. Sc.)

Enrolment: winter or summer term

► Application

German students: Applications can be submitted via internet. Please contact the registrar's office if you wish the application form for study admission to be sent to you or if you require further information.

International students: Please use www.uni-assist.com for your application.

Further information:

Chemnitz University of Technology

Registrar's office

Straße der Nationen 62, room 043

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www.tu-chemnitz.de

► Specialised course guidance

You may find an overview over all specialised course advisors here

www.tu-chemnitz.de/studienberater

► Student Advisory Service

Chemnitz University of Technology

Student Advisory Service

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