Only the german version of the module description as part of the study regulations is legally binding.

Module name	**Automotive Software Engineering**
Module number	INF-25-Ma-FSP autoSOFT
Senior Lecturer	Prof. Mirko Conrad Mirko.conrad@tu-dresden.de
Qualification objectives	Students know and understand basic concepts, principles and methods of developing software-based systems in the automotive sector. You know and understand the domain-specific specificities and challenges of software development in the automotive sector and the need to embed software development in an overarching system development process. Students know and understand the basic activities of a reference process for the development of software-based systems for motor vehicles, as well as selected technical aspects of this process.
Contents	The content of the module is the basis, specificities and challenges of software development in the automotive sector, the core process for the development of vehicle software inspired by Automotive SPICE©, methods of system and software development for the software-defined vehicle. Other content includes the evolution of E/E architectures, the use of AUTOSAR and the use of machine learning methods to implement vehicle systems, as well as the concepts and methods of various software-based vehicle systems, including automated driving systems.
Forms of teaching and learning	The module includes lectures of 2 SWS and self-study. The language of instruction shall be English.
Eligibility for participation	The computer science diploma, the computer science master's degree, the computer science bachelor's degree and the applied computer science bachelor's degree require the skills to be acquired in the INF-25-Ba-SWT software technology module.

Usability	The module is a compulsory module in the field of Software Technology and Programming Languages in the computer science diploma course in the main course of study, to be chosen in accordance with Annex 2 to the Rules of Procedure. In the computer science bachelor's degree course, the module is a compulsory electoral module for specialist in-depth examinations, to be chosen in accordance with the annex to the examination rules. In the Bachelor's Degree in Applied Informatics, the module is a compulsory voting module in the deepening direction of media informatics, to be chosen in accordance with the annex to the test rules. The module is a compulsory open-track optional module in the field of Software Technology and Programming Languages in the Master's Degree in Computer Science, as well as the supplement to be selected in accordance with Annex 2 to the exam rules. The module can only be selected once in the Master's in Computer Science. The module cannot be chosen in the Computer Science Masters Course if that module, or a module with substantially the same content, from a course of study which met the entry requirements under Paragraph 3 of the Studienordnung has already been completed. The module provides the pre-requisites for the modules it designates under the pre-requisites for participation.
Conditions for the award of credits	Credits are awarded when the module test is passed. The module test consists of a non-public oral test performance as an individual test lasting 15 minutes. The language of the exam will be German or English, at the student's choice.
Credits and marks	The module allows for 3 credit points. The module score corresponds to the test performance score.
Frequency of the module	The module is available during the summer semester.
Workload	The total workload is 90 hours.
Duration of the module	The module covers 1 semester.