

Module Name	Networking and Communication
Module Number	EuI-MT-E-M11G
Responsible Lecturer	Prof. Dr.-Ing. Bernard Bäker LV_VKF@tu-dresden.de
Qualification Objectives	Students are familiar with description tools and methods for the implementation of distributed and networked systems. They are capable of analyzing and evaluating networked vehicle systems and their communication structures, as well as selecting and designing them according to requirements. Students can apply these methods in practical projects.
Contents	The module covers fundamental principles of technical communication, description tools, and methods for developing communication structures/systems. Additional topics include bus access mechanisms, bus protocols, and security procedures. Applications are discussed using example functions, as well as information-processing electronic systems in vehicles, standards for industrial electronic communication systems, and bus control. The analysis of individual communication systems is a key focus.
Teaching and Learning Forms	2 hours per week of lectures, 1 hour per week of exercises, 1 hour per week of practical lab courses, and self-study.
Prerequisites for Participation	The competencies to be acquired in the modules Measurement Technology, Embedded Controllers, and Basics of Electrical Engineering are required.
Usability	The module is an elective module within the elective area "Methods and Applications" according to § 6 paragraph 3 SO and § 33 paragraph 3 PO of the main study program in the diploma program Mechatronics. It creates the prerequisites for the modules that list this module in the field "Prerequisites for Participation."
Prerequisites for the Award of Credit Points	The module examination consists of a written exam lasting 120 minutes and an ungraded portfolio with a workload of 20 hours if more than 20 students are registered. If up to 20 students are registered, the examination consists of a non-public oral group examination lasting 20 minutes and an ungraded portfolio with a workload of 20 hours. This will be communicated to the registered students at the end of the registration period in the usual manner.
Credit Points and Grades	5 credit points can be earned through the module. The module grade is determined as the unweighted average of the grades of the individual examination components.
Frequency of the Module	The module is offered every summer semester.
Workload	The total workload is 150 hours.
Duration of the Module	The module lasts one semester.