

Module Name	Connected and Automated Mobility
Module Number	Eul-MT-E-A14G
Responsible Lecturer	Prof. Dr.-Ing. Bernard Bäker LV_VAM@tu-dresden.de
Qualification Objectives	After completing the module, students possess specialized knowledge in the areas of automated driving functions and driver assistance functions. This includes the categorical classification of functions and systems, functional knowledge of fundamental technologies such as environmental sensing, data fusion of various sensor systems for creating environmental models, and trajectory planning.
Contents	The module covers the fundamentals of classifying driver assistance functions (DAS), knowledge of their mechatronic system integration, and the necessary sensors, actuators, process processing, algorithms, as well as the architecture-related communication structure for implementing these distributed system functions.
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 modules that list this module under "Prerequisites for Participation."
Prerequisites for the Award of Credit Points	Credit points are awarded when the module examination is passed. The module examination consists of: - For more than 20 registered students: a written exam lasting 120 minutes and an ungraded portfolio with a workload of 20 hours. - For up to 20 registered students: a non-public oral group examination lasting 20 minutes and an ungraded portfolio with a workload of 20 hours. This will be announced 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 in accordance with § 15 paragraph 1 sentences 5 and 6 of the examination regulations, based on the unweighted average of the grades of the individual examination components.
Frequency of the Module	The module is offered every winter semester.
Workload	The total workload is 150 hours.
Duration of the Module	The module lasts one semester.