Module Name	Mobile Communication Systems Advanced
Module Number	EuI-ET-E-MoNSV, EuI-IST-E-MoNSV
Responsible Lecturer	Prof. Dr.-Ing. Gerhard Fettweis gerhard.fettweis@tu-dresden.de
Qualification Objectives	After completing the module, students are able to understand the concepts of modern mobile communication systems and contribute creatively to solving communication engineering problems under mobile communication conditions. Students have an in-depth understanding of issues in mobile communication, such as signal transmission over disturbed frequency- and time-variant transmission channels, and possess the knowledge and skills to theoretically analyze these problems, develop solutions, and implement them in practice. Students are also capable of expressing themselves in technical English.
Contents	The module covers specific and/or current topics in the field of mobile communication, chosen by the student: - Fundamentals of Estimation and Detection, i.e., basics of estimation and decision theory - Machine Learning in Signal Processing - Algorithms for Multi-Antenna Systems
Teaching and Learning Forms	4 hours per week of lectures, 2 hours per week of exercises, and self-study. The language of instruction for lectures and exercises is English.
Prerequisites for Participation	The competencies to be acquired in the modules Communications Engineering and Systems Theory are required.
Usability	The module is an elective module in the elective area "Competence Deepening" according to § 6 paragraph 3 of the study regulations and § 33 paragraph 4 of the examination regulations of the main study program in the field of Information Technology in the diploma program Electrical Engineering. Furthermore, it is an elective module in the elective area "Competence Deepening" according to § 6 paragraph 3 of the study regulations and § 33 paragraph 3 of the examination regulations of the main study program in the field of Communication Technology in the diploma program Information Systems Engineering. The module creates the prerequisites for the 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 a written exam lasting 150 minutes if more than 15 students are registered.
Credit Points and Grades	7 credit points can be earned through the module. The module grade corresponds to the grade of the examination performance.
Frequency of the Module	The module is offered every winter semester.
Workload	The total workload is 210 hours.
Duration of the Module	The module lasts one semester.