Module Name	Medical Devices Engineering
Module Number	EuI-ET-E-MedGT
Responsible Lecturer	Prof. Dr.-Ing. habil. Hagen Malberg lehre.ibmt@tu-dresden.de
Qualification Objectives	After completing the module, students are able to classify medical technology procedures and systems within the clinical environment. Furthermore, they possess fundamental knowledge of regulatory requirements throughout the lifecycle of medical devices. They independently solve tasks related to the application and development of diagnostic and therapeutic technologies during the training process.
Contents	The module covers the fundamental principles of medical measurement and sensor technology, therapeutic system technology (particularly electromedical systems), detoxification, infusion technology, and cardio-assist systems. Starting from medical questions and problems, the module explores technical solutions in the form of medical devices. It includes selected organ systems such as the cardiovascular system, urinary system, respiratory system, as well as the nervous and muscular systems. Additionally, the module addresses basic legal requirements, such as the Medical Device Regulation (MDR), and normative requirements for the development, manufacturing, and monitoring of medical devices.
Teaching and Learning Forms	3 hours per week of lectures, 2 hours per week of seminars, 1 hour per week of practical lab courses, and self-study.
Prerequisites for Participation	The competencies to be acquired in the modules Physics and Biomedical Engineering are required.
Usability	The module is an elective module within the elective area "Competence Deepening" according to § 6 paragraph 3 SO and § 33 paragraph 4 PO of the main study program in the specialization Electronic Systems, Micro and Medical Technology in the diploma program Electrical Engineering. It creates the prerequisites for the modules that list this module in the field "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 90-minute written exam and a portfolio with a workload of 30 hours.
Credit Points and Grades	7 credit points can be earned through the module. The module grade is determined by the weighted average of the examination performances, with the written exam weighted twice and the portfolio weighted once.
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.