

Module name	Medical Electronic Systems Design
Module number	Eul-BMT-C-MGE
Lecturer in charge	Prof. Dr.-Ing. habil. Jens Lienig jens.lienig@tu-dresden.de
Objectives	After completing the module, students have the skills and abilities to develop medical device technology products. They are able to proceed systematically according to the rules of the general constructive development process with the aim of offering innovative solutions in the area of conflicting economic aspects, patent situation, conflicting requirements, environment and production. They will be familiar with the most important actuator principles for medical devices and their design. With their knowledge of the specific properties of the actuators, they select them accurately according to the requirements.
Contents	The module covers the basics of product development, including the systematic solution of design tasks, product development methods, the constructive development process, creativity techniques for finding solutions, quality assurance during product development and advanced fields of thought for product developers. On the other hand, the module covers relevant actuators for medical device technology, with a focus on the structure of drive systems, operating behavior, calculations, control and operation of classic and smart actuators.
Modes of teaching and learning	4 hours per week lectures and self-study.
Prerequisites	The knowledge acquired in the module Electronic Systems Design is required.
Usability	The module is a compulsory module in the main studies of the degree programme Biomedical Engineering. It creates the prerequisites for the modules that list that module in the "Prerequisites" field.
Requirements for the award of credit points	The credit points are awarded when the module assessment is passed. The module assessment consists of a written exam of 180 minutes.
Credit points and grades	5 credit points can be obtained by the module. The module grade is the grade of the examination.
Frequency	The module is offered every summer semester.
Workload	The total effort is 150 hours.
Duration	The module takes one semester.