

Module Name	Systems Design
Module Number	Eul-ET-C-GT
Responsible Lecturer	Prof. Dr.-Ing. habil. Jens Lienig jens.lienig@tu-dresden.de
Qualification Objectives	After completing the module, students are able to creatively apply methods and techniques in the development of devices. Students also have knowledge of sensory and optical components.
Contents	The contents of the module include: - The development process with a focus on the analysis and optimization of the design and the verification of functional performance, maintaining a protocol/design diary, and preparing documentation. - Fundamentals of sensor technology with a focus on sensor and measurement technology, sensors for thermal, mechanical, magnetic, and optical quantities as well as substance concentrations. - Technical optics with a focus on wave optics and geometric optics, materials and classical optical components, light guides and fiber optics, as well as optical devices.
Teaching and Learning Forms	3 hours per week of lectures, 4 hours per week of exercises, and self-study.
Prerequisites for Participation	The competencies to be acquired in the module "Scientific Work in Electrical Engineering Basics" are required.
Usability	The module is a compulsory module of the main study program in the field of 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 written exam lasting 180 minutes and a complex assignment with a workload of 27 hours. Both examination components are mandatory for passing.
Credit Points and Grades	8 credit points can be earned through the module. The module grade is determined by the weighted average of the grades of the examination components. The written exam is weighted twice, and the complex assignment is weighted once.
Frequency of the Module	The module is offered every summer semester.
Workload	The total workload is 240 hours.
Duration of the Module	The module lasts one semester.