

Module Name	Physics of Selected Devices
Module Number	Eul-ET-C-PhyBE
Responsible Lecturer	Dr.-Ing. Christian Matthus christian.matthus@tu-dresden.de
Qualification Objectives	After completing the module, students master the description of component behavior based on important physical models. They understand and implement numerical solution methods for physical models, apply computer-aided tools for the numerical simulation of micro- and nanoelectronic components, construct equivalent circuit diagrams, develop compact models of realistic components, and adjust model parameters to measurements.
Contents	The module covers the structure, functionality, and electrical properties of micro- and nanoelectronic components for integrated circuits.
Teaching and Learning Forms	4 hours per week of lectures, 2 hours per week of exercises, and self-study.
Prerequisites for Participation	The competencies to be acquired in the module "Microelectronic Technologies and Components" are required.
Usability	The module is a compulsory module of the main study program in the field of Microelectronics 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 150 minutes and a portfolio with a workload of 50 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 grades of the examination components. The written exam is weighted sevenfold, and the portfolio is weighted threefold.
Frequency of the Module	The module is offered every academic year, starting in the winter semester.
Workload	The total workload is 210 hours.
Duration of the Module	The module lasts two semesters.