

Module Name	Materials and Semiconductor Technology
Module Number	Eul-ET-C-WSHLT
Responsible Lecturer	Dr. rer. nat. Enrico Langer enrico.langer@tu-dresden.de
Qualification Objectives	After completing the module, students master the materials of semiconductor and microtechnology as well as the associated semiconductor technologies. They are able to purposefully select processes for microtechnical applications, determine their functional parameters, and apply the corresponding technologies, processes, and system configurations.
Contents	The module covers the fundamentals of semiconductor technologies, process integration, microstructuring technologies such as the fabrication of complex miniaturized systems, as well as the materials of semiconductor and microtechnology, including the most advanced 2D, meta, and smart materials.
Teaching and Learning Forms	4 hours per week of lectures and self-study.
Prerequisites for Participation	The competencies to be acquired in the modules Basics of Electrical Engineering, Materials, and 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 non-public oral examination as an individual examination lasting 35 minutes. If more than 15 students are registered, the oral examination will be replaced by a written exam lasting 90 minutes. This will be announced to the registered students at the end of the registration period in the usual manner.
Credit Points and Grades	5 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 150 hours.
Duration of the Module	The module lasts one semester.