

Module Name	Microsystems Technology
Module Number	Eul-MT-E-A11V
Responsible Lecturer	Prof. Dr.-Ing. Andreas Richter andreas.richter7@tu-dresden.de
Qualification Objectives	After completing the module, students master the physical fundamentals necessary to understand material properties and their interactions. Students are familiar with the most important material groups for microsystems engineering and understand their functionality. They are acquainted with the key technological processes and microtechnologies for manufacturing microsystems. Students understand the functional principles of essential micromechanical microsensors and microactuators. They are proficient in various methods for developing energy supply solutions for autonomous microsystems.
Contents	The module covers the fundamentals of the most important functional materials in microsystems engineering, including new functional materials, technological processes and microtechnologies, microsensors, microactuators, energy supply for microsystems, as well as selected application fields of microsystems.
Teaching and Learning Forms	4 hours per week of lectures, 2 hours per week of practical lab courses, and self-study.
Prerequisites for Participation	The competencies to be acquired in the modules Physics, Materials, and Technical Mechanics are required.
Usability	The module is an elective module from the elective area "Methods and Applications" according to § 6 Paragraph 3 SO and § 33 Paragraph 3 PO of the main study program in the diploma program Mechatronics. 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 120 minutes and a portfolio of 12 hours if more than 20 students are registered. If up to 20 students are registered, the examination consists of a non-public oral examination as an individual exam lasting 20 minutes and a portfolio of 12 hours. This will be announced to the registered students at the end of the registration period in the usual manner.
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 or oral examination is weighted twice, and the portfolio is weighted once.
Frequency of the Module	The module is offered every academic year, starting in the summer semester.
Workload	The total workload is 210 hours.
Duration of the Module	The module lasts two semesters.