

Only the german version of the module description as part of the study regulations is legally binding.

Module name	Technical logistics specialization
Module number	INF-25-Ma-NVE-FL
Responsible lecturer	Prof. Dr. Thorsten Schmidt thorsten.schmidt@tu-dresden.de
Qualification objectives	Students will be able to dimension material flow systems for unit loads, taking into account dynamic and stochastic influences, and design concepts for their control. Students know the properties of specific components and assemblies of material flow technology and can use them to design intralogistics systems. They are proficient in methods and procedures to design the masks in accordance with the logistical performance requirements and to design the logistical process. Students are able to analyze requirements for intralogistics processes, select suitable material flow technology, conceive, design and dimension them individually, e.g. industrial trucks, or as part of a material flow system, e.g. a distribution cycle . They are proficient in analytical methods of material flow calculation and have knowledge of the simulation of complex material flow systems and can create planning variants, evaluate and develop preferred solutions. Overall, students are able to plan, comprehensively analyze and optimize intralogistics systems. By comparing between calculation and simulation, students are able to verify calculation models and critically evaluate simulation results.
Content	The module covers the principles and methods of designing and planning logistics systems and the mathematical principles of dimensioning, the forms of material flow representation, both hl for internal model application and for visualizing results, the overview and application of guidelines from professional associations, the methodological approach to demand and capacity planning ng for transport, storage and order picking systems, the methods for dimensioning waiting and buffer areas for process decoupling, statistical and numerical principles of discrete simulation; the analysis and management of logistics and simulation data, the modeling and simulation of logistics systems, the influence and effect of strategies for process control and possibilities for technical implementation.
Teaching and learning methods	The module comprises lectures of 3 SWS, exercises of 1 SWS and the self bststudium. The language of instruction for the lectures and exercises is German.
Prerequisites for participation	In the Diplom degree program in Computer Science and in the Master's degree program in Computer Science, the competencies to be acquired in the module INF-25-Ma-NGR-FL Technical Logistics Fundamentals are a prerequisite.
Applicability	The module is a compulsory module of the Non-Computer Science Supplement Factory and Logistics in the Diploma program in Computer Science. In the Master's degree program in Computer Science, the module

	is a compulsory elective module in the open track supplement, which must be selected in accordance with Annex 2 to the examination regulations. The module can only be selected in the Master's degree program in Computer Science in combination with the module INF- 25-Ma-NGR-FL Technical Logistics Fundamentals. The module cannot be selected in the Master's degree program in Computer Science if this module or a module with essentially the same content from a degree program with which the admission requirements according to § 3 of the study regulations have already been met has already been completed. The module fulfills the prerequisites for the modules listed under prerequisites for participation.
Requirements for earning credit points	The credit points are earned if the module examination is passed. The module examination consists of a written examination lasting 120 minutes. The examination language is German.
Credit points and grades	6 credit points can be earned through the module. The module grade corresponds to the grade of the examination.
Module frequency	The module is offered every summer semester.
Workload	The total workload is 180 hours.
Module duration	The module comprises one semester.