Module name	**Foundations of Systems Engineering**
Module number	CMS-TRK-SysEng
Senior Lecturer	Prof. Dr. Christof Fetzer christof.fetzer@tu-dresden.de
Qualification objectives	Students are able to design distributed software platforms using modern hardware and software components. Students understand the challenges of distributed systems in terms of programming and correct execution, can assess them and apply appropriate mechanisms.
Contents	The content of the module includes the design, construction and operation of software platforms, topical issues of the architecture of distributed systems, such as parallel computing on up-to-date hardware, ensuring composability and security of complex modules, testing methods to detect errors as soon as possible, and the management of human resources to support collaboration.
Forms of teaching and learning	The module includes lectures of 2 SWS, exercises of 2 SWS and self-study. The language of the lectures and exercises will be English.
Eligibility for participation	Basic knowledge of system architecture, modularisation and structuring of complex systems at bachelor's level is required.
Usability	In the Masters Course Computational Modeling and Simulation, the module is an optional module in track computational engineering, to be selected in accordance with Annex 2 to the Specific Examination Regulations. The module cannot be chosen in the Master's Course Computational Modeling and Simulation if this or a module with substantially the same content from a Course with which the entry conditions under § 3 of the Studienordnung have been met has already been completed. The module provides the pre-requisites for the modules it designates under the pre-requisites for participation.
Conditions for the award of credits	Credits are awarded when the module test is passed. The module test consists of a 90-minute away day. The language of the test will be English.
Credits and marks	The module allows 5 credit points to be obtained. The module score corresponds to the test performance score.
Frequency of the module	The module is offered every winter semester.
Workload	The total workload is 150 hours.
Duration of the module	The module covers 1 semester.