Module name	**Dynamics system**
Module number	CMS-TRK-SysDyn
Senior Lecturer	Prof. Dr. Michael Beitelschmidt michael.beitelschmidt@tu-dresden.de
Qualification objectives	Students have a basic knowledge of system dynamics and are able to describe the dynamics of mechanical systems and systems of other physical domains and to calculate and identify their behaviour.
Contents	The content of the module shall include the basic theoretical modelling procedures and the description of time and image systems using Fourier and Laplace transforming, the transmission behaviour of systems using the input-output model, condition room formulation of dynamic systems, time discrete procedures and linear condition control principles.
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	Knowledge of linear differential equations and linear algebra at bachelor 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 120-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.