Module name	**Multi Body Dynamics**
Module number	CMS-TRK-MBD
Senior Lecturer	Prof. Dr. Michael Beitelschmidt michael.beitelschmidt@tu-dresden.de
Qualification objectives	Students understand the multi-body system simulation method to calculate large movements of mechanical systems from rigid bodies over time. Students master the methodology for establishing the motion equations of multi-body systems and their computerisation for simple special cases. Students are aware of the different multi-body simulation algorithms used in commercial programmes.
Contents	The module shall include kinetics and kinetics of rigid bodies, description of joints and attachments, algorithms for establishing motion equations and resolution procedures.
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 technical mechanics at bachelor's level is required.
Usability	The module is a mandatory module in track computational engineering in the Masters Course Computational Modeling and Simulation. In the Masters Course Computational Modeling and Simulation, the module is a compulsory voting module in Track Computational Life Science, 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 summer semester.
Workload	The total workload is 150 hours.
Duration of the module	The module covers 1 semester.