Module name	**Computer and Robot Assisted Surgery**
Module number	CMS-TRK-CRC
Senior Lecturer	Prof. Dr. Stefanie Speidel stefanie.speidel@nct-dresden.de
Qualification objectives	Students master the methodological and practical foundations of computer and robotic surgery. They are able to apply the methods, to deal with new, interdisciplinary tasks, to select appropriate solutions and to develop new ones.
Contents	The module includes computer and robotic surgery. It includes the foundations of image acquisition, medical image processing and segmentation, registration, the foundations of robotic and navigation systems, intraoperative support and Augmented Reality, as well as insights into current research, clinical issues and application examples.
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 the basics of analysis, linear algebra, in particular vector and matrices accounting, and basic knowledge of computer programming at bachelor's level are required.
Usability	In the Computational Modeling and Simulation Masters Course, the module is a compulsory voting module in Track Visual Computing, Track Computational Engineering, Track Applied Artificial Intelligence and 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 non-public oral test performance as an individual test lasting 30 minutes. 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.