

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

Module name	Computer- and Robot-Assisted Surgery
Module number	INF-25-Ma-FVC-CRC
Responsible lecturer	Prof. Dr. Stefanie Speidel stefanie.speidel@nct-dresden.de
Qualification objectives	Students master the methodological and practical basics of computer- and robot-assisted surgery. They are able to apply the methods and work on new, interdisciplinary tasks, select suitable solution methods and develop new solution methods.
Content	The content of the module is computer- and robot-assisted surgery. It includes the basics of image acquisition, medical image processing and segmentation, registration, basics of robotic and navigation systems, intraoperative support and augmented reality as well as insights into current research, clinical issues and application examples.
Teaching and learning methods	The module comprises lectures of 2 SWS, exercises of 2 SWS and the self-study. The language of instruction for the lectures and exercises is English.
Prerequisites for participation	In the Diploma degree course in Computer Science, the Bachelor's degree course in Computer Science and the Bachelor's degree course in Applied Computer Science, the skills to be acquired in the module INF-25-Ba-Ma1 Linear Algebra and Analysis are a prerequisite. In the Master's degree program in Computer Science, knowledge of mathematics at Bachelor's level is required.
Applicability	The module is a compulsory elective module in the subject area Visual Computing and Machine Learning in the Diploma degree program in Computer Science in the main course of study, which must be selected in accordance with Annex 2 to the examination regulations. In the Bachelor's degree course in Computer Science, the module is a compulsory elective module in the subject specialization, which must be selected in accordance with the annex to the examination regulations. The module is a compulsory elective module in the Bachelor's degree course in Computer Science with a specialization in Media Informatics at , which must be selected in accordance with the annex to the examination regulations. In the Master's degree program in Computer Science, the module is a compulsory elective module in the open track in the subject area Visual Computing and Machine Learning as well as the supplement, which must be selected in accordance with Annex 2 to the examination regulations. The module can only be chosen once in the Master's degree program in Computer Science. The module cannot be chosen in the Master's degree program in Computer Science if this module or a module with essentially the same content from a degree program in which the admission requirements according to § 3 of the study regulations have already been met has already been completed. The module creates 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 non-public oral examination as an individual examination lasting 30 minutes. The examination language is English.
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 winter semester.
Workload	The total workload is 180 hours.
Module duration	The module comprises one semester.