Module name	**Adaptive laser system**
Module number	CMS-TRK-AL
Senior Lecturer	Prof. Dr. Jürgen Czarske juergen.czarske@tu-dresden.de
Qualification objectives	Upon completion of the module, students will be able to present and assess the physical principle and technical design of adaptive laser sensors. They master basic systems design approaches and methods of advanced laser sensors.
Contents	The module includes laser measurement technology with basic physical and electrotechnical bases such as gaussification, interferometry, ultrashort pulse lasers, Fourier optics, fibre sensors, practical implementation and application of adaptive laser sensors for example for biophotonics, medical technology, optical information technology and energy technology.
Forms of teaching and learning	The module includes lectures of 2 SWS, exercises of 1 SWS, internships of 1 SWS and self-study. The language of the lectures, exercises and internships will be English.
Eligibility for participation	Knowledge of physics at bachelor's level is required, as well as knowledge of systems theory and basics of optics and photonics at bachelor's level.
Usability	In the Computational Modeling and Simulation Masters Course, the module is a compulsory voting module in the Track Applied Artificial Intelligence, 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 20 minutes and a portfolio of 20 hours. Both audit services are relevant to success. The language of the test will be English.

Credits and marks	The module allows 5 credit points to be obtained. The module score is the weighted average of the scores for each audit work. The oral audit performance is weighted three times and the portfolio is weighted simply.
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.