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

Module name	**Robot Learning**
Module number	INF-25-Ma-FVC-RL
Responsible lecturer	Prof. Dr. Roberto Calandra roberto.calandra@tu-dresden.de
Qualification goals	Students have in-depth knowledge of machine learning methods in the field of robotics and are able to apply these methods independently. They can mathematically describe machine learning problems in the field of robotics, implement algorithms to solve these problems on their own, and empirically and quantitatively evaluate the performance of these algorithms in the context of specific applications.
Contents	The module covers the fundamentals of classical control theory, machine learning methods in robotics—such as optimization, supervised learning for robotics, and reinforcement learning—as well as problems and applications of machine learning methods in robotics, including navigation, manipulation, locomotion, and multi-agent systems.
Teaching and learning methods	The module includes 2 hours of lectures per week, 2 hours of exercises per week, and self-study. The lectures and exercises are conducted in English.
Requirements for participation	No prior knowledge is required.
Applicability	In the Diplom program in Computer Science, this module is a required elective in the Visual Computing and Machine Learning specialization during the advanced studies phase, and must be selected in accordance with Appendix 2 of the Examination Regulations. In the Master's program in Computer Science, this module is a required elective in both the Open Track and the Specialization Track within the Visual Computing and Machine Learning specialization, and must be selected in accordance with Appendix 2 of the Examination Regulations. The module may be selected only once in the Master's program in Computer Science. The module may not be selected in the Master's program in Computer Science if this module or a module with substantially the same content from a program that fulfilled the admission requirements under § 3 of the Study Regulations has already been completed. The module fulfills the prerequisites for the modules listed under "Prerequisites for Participation."
Requirements for earning credit points	Credit points are awarded upon passing the module exam. The module exam consists of a 90-minute written exam. The exam is conducted in English.
Credit points and grades	This module is worth 6 credit points. The module grade corresponds to the grade on the final exam.
Frequency of the module	The module is offered every summer semester.

Workload	The total workload is 180 hours.
Module duration	The module lasts one semester.