

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

Module name	Industrial Communications
Module number	INF-25-Ma-FCP-IC
Responsible lecturer	Prof. Dr. Martin Wollschlaeger martin.wollschlaeger@tu-dresden.de
Qualification objectives	Students are familiar with the basic architectures and operating principles of communication systems for use in industrial automation. They are able to derive typical requirements for the use of such systems in complex networked production systems, evaluate specific industrial solutions and select suitable solutions. Students can transfer the characteristics of industrial communication to novel application systems, apply them integratedly and develop components of such systems independently.
contents	Contents of the module are networked systems in industrial real-time applications as well as the basics of communication, requirements for real-time, robustness and availability of such systems. Further contents are concrete industrial solutions based on fieldbuses and Industrial Ethernet and the evaluation of their properties as well as developments and trends for novel systems and the practical investigation of selected solutions.
Forms of teaching and learning	The module includes lectures in the scope of 2 SWS, exercises in the scope of 2 SWS and self-study. The teaching language of the lectures and the exercises can be German or English and will be specified by the lecturer at the beginning of each semester and announced in the usual way.
Requirements for participation	The degree programme in Computer Science assumes the competencies to be acquired in the modules INF-25-Ma-FCP-CPS Foundations of Cyber Physical Systems, INF-25-Ba-RN Computer Networks, INF-25-Ba-SWT Software Technology, INF-25-Ba-DMF Data Management Foundations, INF-25-Ba-SWWTP Software Technology Project and INF-25-Ba-AI Artificial Intelligence.
usability	The module is a compulsory elective module in the field of Cyber Physical Systems in the diploma course Computer Science in the main course of study, which must be chosen in accordance with Annex 2 to the examination regulations. The module in the Master's program Computer Science is a compulsory elective module in the Open Track in the subject area Cyber Physical Systems as well as the supplement, which must be selected in accordance with Annex 2 to the examination regulations. The module can only be selected once in the Master's programme Computer Science. In the Master's programme in Media Informatics, the module is a compulsory elective module in the field of supplementary modules, which must be chosen in accordance with Section 27(3) of the Examination Regulations. The module cannot be selected in the Master's degree program Computer Science and the Master's degree program Media Informatics if this or a substantially identical module from a degree

	program with which the admission requirements according to § 3 of the study regulations have been fulfilled, has already been completed. The module creates the prerequisites for the modules, which it names under prerequisites for participation.
Conditions for awarding credits	The credit points are earned when the module examination has been passed. The module examination consists of a non-public oral examination performance as an individual examination of 30 minutes duration. The language of the examination can be German or English and will be specified by the lecturer at the beginning of each semester and announced in the usual manner.
Credits and grades	6 credit points can be earned through the module. The module grade corresponds to the grade of the examination performance.
Frequency of the module	The module is offered every summer semester.
workload	The total workload is 180 hours.
Duration of the module	The module covers one semester.