

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

Module name	Component-Based Software Engineering
Module number	INF-25-Ma-FSP-CBSE
Responsible lecturer	Prof. Dr. Uwe Aßmann uwe.assmann@tu-dresden.de
Qualification objectives	After completing the module, students will be familiar with the basic principles of software reuse, design with components and software architecture. They will be able to classify and evaluate important basic techniques of component models, composition techniques and composition languages and use and adapt them for specific fields of application in the environment of software applications as well as distinguish between different component models and assess their areas of application.
Content	The module covers the basics of software reuse with component models and the use of various composition techniques and languages. The module includes blackbox compositions in which components are connected via their interfaces and graybox compositions in which components are interwoven in a cross-cutting manner. Invasive software composition serves as the overarching framework for all methods. Further content includes software design, modeling and metamodeling with the help of component models, techniques and position languages such as architectural languages and aspect orientation.
Teaching and learning methods	The module comprises lectures of 2 SWS, exercises of 2 SWS and the selfbststudium. The language of instruction for the lectures and exercises is English.
Prerequisites for participation	In the Diploma degree program in Computer Science, the competencies to be acquired in the modules INF-25-Ba-SWT Software Technology, INF-25-Ba-DMF Data Management Foundations, INF-25-Ba-SWTP Software Technology Project and INF-25-Ba-KI Artificial Intelligence are required.
Applicability	The module is a compulsory elective module in the Diplom degree course in Computer Science in the main course in the subject area Software Technology and Programming Languages, which must be selected in accordance with Annex 2 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 of Software Technology and Programming Languages and the supplement, which must be selected in accordance with Annex 2 to the Examination Regulations, and in the Distributed Systems Engineering Track, which must be selected in accordance with Annex 3 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 with 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 15 minutes. Bonus achievement for r oral examination is the solving of computer-based exercises of 15 hours and hours. 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 summer semester.
Workload	The total workload is 180 hours.
Module duration	The module comprises one semester.