

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

Module name	Design Patterns and Frameworks
Module number	INF-25-Ma-FSP-DPF
Responsible lecturer	Prof. Dr. Uwe Aßmann uwe.assmann@tu-dresden.de
Qualification objectives	Students know the basic principles of designing object-oriented software systems with design patterns and how these can be systematically derived or constructed from each other . They can understand design patterns as collaboration specifications and know the basics of role-oriented modeling and programming. They can apply the acquired knowledge to large software systems and know the principles of using design patterns in the context of software frameworks.
Content	The contents of the module are the basics for the systematic development and derivation of design patterns in object-oriented languages. In particular, the module covers role-oriented modelling and programming as an extension of the object-oriented paradigm, their use to describe design patterns and the use of design patterns to realize the variability and extensibility of frameworks.
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 Software Technology and Program ming Languages track of the Diploma degree course in Computer Science, which must be selected in accordance with Annex 2 to the examination regulations. In the Master's degree program in Computer Scienc e, the module is a compulsory module in the Distributed Systems Engineering Track and a compulsory elective module in the Open Track in the subject area Software Tec hnology and Programming Languages 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 selected 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 h § 3 of the study regulations have already been met has already been completed. The module creates the prerequisites for the modules that name it under prerequisites zungen für die Teilnahme.
Requirements for earning credit	The credit points are earned if the module examination is passed. The module examination consists of a non-public oral examination as an

points	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 winter semester.
Workload	The total workload is 180 hours.
Module duration	The module comprises one semester.