

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

Module name	Advanced Software Engineering
Module number	INF-25-Ma-FSP-FSWT
Responsible lecturer	Prof. Dr. Uwe Aßmann uwe.assmann@tu-dresden.de
Qualification objectives	Students know the basic principles of software engineering, design, architecture, modeling, testing and reuse of software systems. They can classify and evaluate important basic technologies of software systems and use and adapt them for specific fields of use in the environment of software applications.
Content	The content of the module includes the fundamentals of software design, modeling and metamodeling, software architecture, software quality, software reuse and modeling of software product lines. Further contents of the module are methods for mastering the complexity of models and code as well as examples from industrial software engineering.
Teaching and learning methods	The module comprises lectures of 2 SWS, exercises of 2 SWS and the self-study. The language of instruction for the lectures and exercises may be German or English and will be specified by the lecturer at the beginning of each semester and announced in the usual manner.
Prerequisites for participation	In the Diploma degree program in Computer Science, in the Bachelor's degree program in Computer Science and in the Bachelor's degree program in Applied Computer Science with a specialization in Media Informatics, the competencies to be acquired in the modules INF-25-Ba-SWT Software Technology, INF-25-Ba-DMF Data Management Foundations and INF-25-Ba-KI Artificial Intelligence are required. In the Bachelor's degree program in Applied Computer Science with a specialization in Medical Informatics, the skills acquired in the modules INF-25-Ba-PMZ-DBE Database Engineering and INF-25-Ba-KI Artificial Intelligence are required.
Applicability	The module is a compulsory elective module in the subject area Software Technology and Programming Languages in the Diploma degree program in Computer Science in the main course of study, which must be selected in accordance with Annex 2 to the examination regulations. In the Bachelor's degree program in Computer Science, the module is a compulsory elective module in the subject specialization, which must be selected in accordance with the annex to the examination regulations. In the Bachelor's degree course in Applied Computer Science, the module is a compulsory elective module in the specialization in Media Informatics and in the specialization in Medical Informatics, which must be selected in accordance with the annex 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 supplementary, which must be selected in accordance with Annex 2 to

	the Examination Regulations. The module can only be selected 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 substantially similar module from a degree program in which the admission requirements according to § 3 of the study regulations have been fulfilled has already been completed . The module fulfills 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 may be German or English and will be specified by the lecturer at the beginning of each semester and announced in the usual manner.
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.