

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

Module name	Software Engineering for Highly Configurable Software Systems
Module number	INF-25-Ma-FSP-HICSOS
Responsible lecturer	Prof. Uwe Aßmann uwe.assmann@tu-dresden.de
Qualification objectives	Students are familiar with advanced principles of software engineering, design, architecture, modeling, testing, and reuse of highly configurable systems. You can use the concepts of feature modeling, behavioral modeling and feature-based software testing in the context of highly configurable systems.
contents	Contents of the module are the software development of highly configurable systems, their evolution and maintenance as well as the application of the above techniques in search-based software engineering, learning-based software engineering, cyber-physical systems and digital twins.
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 exercises is English.
Requirements for participation	The competences to be acquired in the modules INF-25-Ba-SWT Software Technology and INF-25-Ba-DMF Data Management Foundations are required in the Diploma Programme in Computer Science and the Bachelor Programme in Computer Science. The Bachelor's programme in Applied Computer Science assumes the competencies to be acquired in the modules INF-25-Ba-SWT Software Technology and INF-25-Ba-PMZ-DBE Database Engineering. In the Master's program Computer Science, basic knowledge of software technology at bachelor's level is required.

usability	The module is a compulsory elective module in the field of Software Technology and Programming Languages in the diploma programme Computer Science in the main course of study, which must be chosen in accordance with Annex 2 to the Examination Regulations. In the Bachelor's programme in Computer Science, the module is a compulsory elective module of specialisation, which must be chosen in accordance with the annex to the examination regulations. The module in the Bachelor's programme in Applied Computer Science is a compulsory elective module in the specialisation in Media Informatics and in the specialisation in Medical Informatics, which must be chosen in accordance with the annex to the examination regulations. The module in the Master's programme Computer Science is a compulsory elective module in the Open Track in the field of Software Technology 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 selected once in the Master's programme Computer Science. The module cannot be selected in the Master's program Computer Science 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 15 minutes duration. The language of the examination is German or English at the choice of the student.
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 winter semester.
workload	The total workload is 180 hours.
Duration of the module	The module consists of 1 semester.