

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

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| Module name                            | <b>Software Fault Tolerance Lab</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Module number                          | INF-25-Ma-FSC-SFT.Lab                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Responsible lecturer                   | Prof. Dr. Christof Fetzer<br>christof.fetzer@tu-dresden.de                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Qualification objectives               | Students are able to minimize the susceptibility of software systems to errors . They can analyze existing systems and evaluate their susceptibility to errors and reduce it by using various mechanisms.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Content                                | The module covers the practical application of various fault-tolerant mechanisms and analysis methods that can be applied statically or dynamically. In particular, this includes the development and optimization of fault-tolerant, reliable software.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Teaching and learning methods          | The module comprises practicals amounting to 4 SWS and self-study. The language of instruction for the practicals is English.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Prerequisites for participation        | In the Diploma degree program in Computer Science, the competencies to be acquired in the modules INF-25-Ba-Prg Programming and RoboLab, INF-25-Ba-BS Operating Systems, INF-25-Ma-FSA-SE Systems Engineering and INF-25-Ba-SWT Software Technology are required. The Master's degree course in Computer Science requires basic knowledge and skills in programming, a basic understanding of operating systems and skills in complex and distributed software systems and cloud computing at Bachelor's level.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Applicability                          | The module is a compulsory elective module in the Diploma degree program in Computer Science in the main study dium in the subject area of Secure Computing, 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 Secure Computing and the supplement ung, 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 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 module with essentially the same content from a degree program in which the admission requirements according to § 3 of the study regulations have already been fulfilled 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 an ungraded complex course lasting 90 hours . The examination language is English.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Credit points and                      | The module can be used to acquire 6 credit points . The module                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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| grades           | examination is assessed as "passed" or "failed". |
| Module frequency | The module is offered every winter semester at . |
| Workload         | The total workload is 180 hours.                 |
| Module duration  | The module comprises one S emester.              |