

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

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| Module name                    | <b>Spatial computing</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Module number                  | INF-25a-Ma-FVC-SC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Responsible lecturer           | Prof. Dr. Matthew McGinity<br>matthew.mcginity@tu-dresden.de                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Qualification objectives       | Students are able to design and implement spatial computer interfaces and applications. They know the algorithms, tools, and platforms needed to create spatial computer interfaces and applications.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| contents                       | Contents of the module are the design and development of spatial interactive, immersive applications, interface design, visual and acoustic design, performance analysis, localization, tracking and mapping.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Forms of teaching and learning | The module includes internships in the scope of 4 SWS and self-study. The teaching language of the internships can be German or English and will be specified by the lecturer at the beginning of each semester and announced in the usual way.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Requirements for participation | The competences to be acquired in the modules INF-25-Ba-MCI Fundamentals of Human-Computer Interaction, INF-25-Ba-SWT Software Technology, INF-25-Ba-AI Artificial Intelligence and INF-25-Ba-RN Computer Networks are required in the Diploma Programme in Computer Science, the Bachelor Programme in Computer Science and the Bachelor Programme in Applied Computer Science.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| usability                      | The module is a compulsory elective module in the field of Visual Computing and Machine Learning in the diploma course 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 is a compulsory elective module in the Bachelor's programme Applied Informatics in the specialisation in Media 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 Visual Computing and Machine Learning 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                 | The credit points are earned when the module examination has been                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

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| awarding credits        | passed. The module exam consists of a complex performance of 80 hours. The language of the examination can be German or English and will be specified by the lecturer at the beginning of each semester and announced in the usual manner. |
| 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 covers one semester.                                                                                                                                                                                                            |