

Module Number	Module Name	Responsible Lecturer
CMS-SKL	Soft Skills	Prof. Dr. Björn Andres bjoern.andres@tu-dresden.de
Qualification Objectives	Students possess the scientific working methods and are familiar with the principles of good scientific practice. They know the DFG rules on good scientific practice and how these are implemented at TU Dresden. They are familiar with the basic of scientific working methods (epistemology according to Laplace, literature research, presentation techniques, writing techniques). They can communicate expertly in the English language and independently write academic essays.	
Content	The module includes gaining or improving German and English language proficiency, or in other languages in exceptional cases. Language skills in German can be gained at any level of the European Framework of Reference for Languages. Language skills in English can be acquired at level C1 or higher of the European Framework of Reference for Languages. If a student proves that he or she already has a command of both German and English at level C1 or higher, courses in other languages are also permitted. In addition, the module includes compulsory training in good scientific practice, scientific ethics and scientific working methodology.	
Teaching and Learning Methods	The module includes lectures amounting to 2 lecture hours per week and language courses amounting to 2 lecture hours per week, plus independent study. Language courses have to be chosen from the language education programme of Technische Universität Dresden (Catalogue of the Language and Culture Learning Center, LSK; TUDIAS Catalogue).	
Prerequisites for Participation	No previous specialist knowledge is required.	
Usability	This module is a compulsory module, within the Master degree programme Computational Modelling and Simulation programme.	
Requirements for the Awarding of Credit Points	The credit points are awarded if the module examination is passed. The module examination consists of a 15 minute presentation in English and, if necessary, the language course qualification.	
Credit Points and Grades	5 credit points can be earned by completing the module. The module grade results from the unweighted average of the graded work.	
Frequency of the Module	The module is offered each year during the winter semester.	
Workload	The total workload is 150 hours.	
Duration of the Module	The module takes one semester to complete.	

Module Number	Module Name	Responsible Lecturer
CMS-PRO	Research Project	Prof. Dr. Björn Andres bjoern.andres@tu-dresden.de
Qualification Objectives	The students master the practical application and transfer of acquired knowledge in an independent scientific project. They are able to identify a problem and divide it into steps that can be worked on independently. They can communicate autonomously about the project and find help when necessary. They are proficient in the scientific methods of computer modelling, in particular the design, implementation and validation of models and simulations. They are able to translate these simulations into a complex application problem.	
Content	The module includes a computer-aided modelling or simulation project on a topic of the student's choice in Computational Life Science, Computational Mathematics, Visual Computing, Computational Modelling in Energy Economics, Computational Engineering and Logical Modeling.	
Teaching and Learning Methods	The module includes a research project amounting to 12 lecture hours per week plus independent study.	
Prerequisites for Participation	No previous specialist knowledge is required.	
Usability	This module is a compulsory module, within the Master degree programme Computational Modelling and Simulation programme.	
Requirements for the Awarding of Credit Points	The credit points are awarded if the module examination is passed. The module examination consists of completing a written project report of 120 hours and a 30 minute oral presentation in English.	
Credit Points and Grades	15 credit points can be earned by completing the module. The module grade is calculated from the weighted average of the graded work. The written project report is doubly weighted and the oral presentation is singly weighted.	
Frequency of the Module	The module is offered each year during the winter semester.	
Workload	The total workload is 450 hours.	
Duration of the Module	The module takes one semester to complete.	

Module Number	Module Name	Responsible Lecturer
CMS-SEM	Literature Studies in Computational Modelling	Prof. Dr. Björn Andres bjoern.andres@tu-dresden.de
Qualification Objectives	Students will be able to independently develop the contents of scientific publications from at least two different fields of Computational Modelling and Simulation and present them to third parties in a comprehensible manner, and critically analyse the acquired knowledge. They are able to critically analyse and communicate the application of computational modelling methods in two different application areas and to recognise cross-application approaches.	
Content	Analysis and discussion of scientific publications on a topic of the student's choice in the fields of Computational Life Science, Computational Mathematics, Visual Computing, Computational Modelling in Energy Economics, Computational Engineering and Logical Modeling.	
Teaching and Learning Methods	The module includes seminars amounting to 4 lecture hours per week plus independent study. The courses are to be selected from the CMS-SEM catalogue to the specified extent; this will be announced as usual at the Faculty of Computer Science, at the beginning of each semester, including the language of the course.	
Prerequisites for Participation	No previous specialist knowledge is required.	
Usability	This module is a compulsory module, within the Master degree programme Computational Modelling and Simulation programme.	
Requirements for the Awarding of Credit Points	The credit points are awarded if the module examination is passed. The module examination consists of the examination performances specified in the CMS-SEM catalogue.	
Credit Points and Grades	5 credit points can be earned by completing the module. The module score is the unweighted average of the grades earned in the individual graded pieces of work.	
Frequency of the Module	The module is offered every summer semester.	
Workload	The total workload is 150 hours.	
Duration of the Module	The module takes one semester to complete.	