

Module Name Simulation and Modeling 2						
Type of Module Basic Module				Module Code BM-SimMod2		
Identification Number	Workload	Credit Points	Term	Offered Every	Start	Duration
MN-CS-SimMod2	270 h	9 CP	SuSe	Summer semester	Summer term only	1 semester
1	Course Types		Contact Time		Private Study	Planned Group Size
	a) Lectures		45 h		90 h	20-30 students
	b) Exercises		30 h		60 h	
	c) Project Classes		15 h		30 h	
2	Module Objectives and Skills to be Acquired					
	<ul style="list-style-type: none"> • understanding of prognostic formulations • general knowledge of ordinary and partial differential equations • knowledge of model capabilities, limitations and model results interpretation • skillfull application of numerical methods for ordinary and partial differential equations • critical judgement of numerical methods and general model formulations 					
3	Module Content					
	<ul style="list-style-type: none"> • Introduction to ordinary differential equations and respective numerical methods • Introduction to partial differential equations and respective numerical methods • Initial and boundary conditions • Discussion of spatial/temporal discretizations, methods and applications in fluid dynamics • Discussion of selected special equations 					
4	Teaching Methods					
	Lectures are providing the overview and introduction to topics. Exercises are providing the practical knowledge and help to deepen the understanding. The project work will be done in teams and consist of different challenges, which need the lecture content for solution. Examples will be taken from the various areas of specialization.					
5	Prerequisites (for the Module)					
	Formally: none					
6	Type of Examination					
	Written Examination (graded)					
7	Credits Awarded					
	The module is passed by successful participation in the exercises (50 % of the possible points have to be obtained), presentation of the project work and passing the examination at the end of the module.					
8	Compatibility with other Curricula					
	Suitable as an elective course for Master of Science students from other areas.					

9	Proportion of Final Grade 9/114
10	Module Coordinator V. Schemann
11	Further Information