This module catalog is preliminary and may still contain errors. The final version will be published at least one week before the semester starts.

Hauptstudienrichtung Simulation and Numerics (SN) für den Masterstudiengang Data Science (gem. $ 51 FPODataScience)

Modul Nr.	Modulbezeichnung	Modulverantwortlicher	Lehrveranstaltung	SWS V	SWS Ü	SWS P	SWS S	SWS T	Gesamt ECTS	Workload-Verteilung pro Semester in ECTS-Punkten: 1. Sem	2. Sem	3. Sem	4. Sem	Art und Umfang der Prüfung/Studienleistung	Modul Nr.
4-5	Advanced Discretization Techniques (AdDiscTech)	Eberhard Bänsch	Advanced Discretization Techniques	4					10	10				oral exam (15 minutes)	4-5
			Tutorials to Advanced Discretization Techniques		1										
	Advanced Solution Techniques	Eberhard Bänsch	Advanced Solution Techniques	2					5	5				oral exam (20 minutes)	
			Tutorials to Advanced Solution Techniques		½										
	Dienstgüte von Kommunikationssystemen (DKS)	Reinhard German	Dienstgüte von Kommunikationssystemen Übungen		2				5	5				Written exam (90 min.) or oral exam plus ungraded exercise performance	
			Quality of Service of Communication Systems / Dienstgüte von Kommunikationssystemen	2											
	Inverse Problems and their Regularizations (IPReg)	Martin Burger	Inverse Problems	2					5	5				oral exam (15 min.)	
			Tutorials to Inverse Problems		½										
	Modeling, Optimization and Simulation of Energy Systems (MOSES)[1]	Marco Pruckner	Modeling, Optimization and Simulation of Energy Systems[2]	2					5	5				Oral exam (30 min.) or written exam (if number of participants > 25)	
			Practical to Modeling, Optimization and Simulation of Energy Systems		2										
	Modeling, Simulation, Optimization (Practical Course) (MoSi)	Martin Burger	Modeling, Simulation, Optimization (Practical Course)				3		5	5				project (80%) and weekly hand in assignments (20%)	
	Partial Differential Equations Based Image Processing	Michael Fried	PDE based Image Processing	2					5	5				oral exam (15 min.)	
			Tutorials to PDE based Image Processing		½										
	Partial Differential Equations I[3,4]	Günther Grün	Vorlesung Partielle Differentialgleichungen I	4					10	10				Written exam (90 min.) plus ungraded exercise performance	
			Übungen zu Partielle Differentialgleichungen I		2										
	PDEs in Data Science	Studiendekan/in Department Mathe	(Master-)Seminar „PDE's in Data Science"				2		5	5				Vortrag und Ausarbeitung	
	Project[5]	Projektbetreuer	Forschungsprojekt SN				3		10	10				Projektleistung	
			Hauptseminar				2								
	Simulation and Modeling 1	Reinhard German	Exercises to Simulation and Modeling 1		2				5	5				Written exam (90 min.) or oral exam (30 min.) (ungraded)	
			Simulation and Modeling 1	2											
	Simulation and Modeling 2	Reinhard German	Exercises to Simulation and Modeling 2		2				5	5				oral exam (30 min.)	
			Simulation and Modeling 2	2											
	Simulation and Scientific Computing 1[5]	Christoph Pflaum	Exercises on Simulation and Scientific Computing 1		2				7,5	7,5				Written exam (90 min.) plus ungraded exercise performance	
			Simulation and Scientific Computing 1	2											
			Tutorial on Simulation and Scientific Computing 1					2							
	Simulation and Scientific Computing 2[3]	Christoph Pflaum	Exercises on Simulation and Scientific Computing 2		2				7,5	7,5				Written exam (90 min.) plus ungraded exercise performance	
			Simulation and Scientific Computing 2	2											
			Tutorial on Simulation and Scientific Computing 2					2							
	Summe Hauptstudienrichtung Simulation and Numerics (SN) für den Masterstudiengang Data Science								**30** **20**	**5-15** **5-15**	**5-15** **5-15**	**10** **0**	**0** **0**		

Fußnoten:

[1] Teaching language: German
[2] Examination language: German or English
[3] This module is offered in German only.
[4] The module is suitable for bachelor or master studies. The special features of the Bachelor's and Master's examinations must be taken into account.
[5] The teaching and examination language is German or English (at the student's choice).

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