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	Eberhard Bänsch	Advanced Discretization Techniques	4					10	[10]		[10]		Oral exam (15 min.)	4-5
			Übungen zu Advanced Discretization Techniques		1					[ ]		[ ]			
	Advanced Solution Techniques	Eberhard Bänsch	Advanced Solution Techniques	2					5		[5]		[5]	Oral exam (15 min.)	
			Exercises for Advanced Solution Techniques		1						[ ]		[ ]		
	Control, Machine Learning and Numerics	Enrique Zuazua	CML: Control, Machine Learning and Numerics	2					10		[10]		[10]	Project work with presentation (50%) and report (50%)	
			Practical sessions: CML: Control, Machine Learning and Numerics		3						[ ]		[ ]		
	Dienstgüte von Kommunikationssystemen	Reinhard German	Quality of Service in Communications	2					5		[5]		[5]	Written exam (90 min.) or oral exam (30 min.), homeworks	
			Quality of Service in Communications (Ex-QoSiC)		2						[ ]		[ ]		
	Inverse Problems	Martin Burger	Inverse Problems	2					5	[5]		[5]		Oral exam (15 min.)	
			Tutorial to Inverse Problems		2					[ ]		[ ]			
	Modellierung, Optimierung und Simulation von Energiesystemen[1]	Marco Pruckner	Modellierung, Optimierung und Simulation von Energiesystemen[2]	2					5	[5]		[5]		Oral exam (30 min.), homeworks (ungraded)	
			Übungen zu Modellierung, Optimierung und Simulation von Energiesystemen		2					[ ]		[ ]			
	Numerics of Partial Differential Equations	Günther Grün	Numerics of Partial Differential Equations I	4					10	[10]		[10]		Written exam (90 min.)	
	Partial Differential Equations Based Image Processing	Martin Burger	PDE based Image Processing	2					5		[5]		[5]	Oral exam (15 min.)	
			Tutorial to PDE based Image Processing		½						[ ]		[ ]		
	Partielle Differentialgleichungen I[3,4]	Günther Grün	Partielle Differentialgleichungen I	4					10	[10]		[10]		Oral exam (20 min.)	
			Übungen zu Partielle Differentialgleichungen I		2					[ ]		[ ]			
	PDEs in Data Science	Prof. Dr. Martin Burger	(Master-)Seminar „PDE's in Data Science"				2		5	[5]		[5]		Presentation, essay	
	Practical Course: Modeling, Simulation, Optimization	Martin Burger	Modeling, Simulation and Optimization (practical course)				3		5		[5]		[5]	Presentation (50%), essay (50%)	
	Project seminar	Project responsibles	Project seminar				4		10	[10]	[10]	[10]		Presentation, code, project report	
	Project seminar	Project responsibles	Project seminar				2		5	[5]	[5]	[5]		Presentation, code, project report	
	Simulation and Modeling 2	Reinhard German	Simulation and Modeling 2	2					7.5		[7.5]		[7.5]	Oral exam (30 min.), project report (approx. 20 pages)	
			Simulation and Modeling 2 Exercises		2						[ ]		[ ]		
	Simulation und Modellierung 1 – VÜ	Reinhard German	Exercises to Simulation and Modeling 1		2				5	[ ]		[ ]		Written exam (90 min.), bonus points via exercises	
			Simulation and Modeling 1	2						[5]		[5]			
	Simulation und Wissenschaftliches Rechnen 1[5]	Ulrich Rüde, Christoph Pflaum	Simulation und wissenschaftliches Rechnen 1	2					7.5	[7.5]	[7.5]	[7.5]	[7.5]	Written exam (90 min.), Presentation in tutorial, homeworks (min. 65% points, ungraded)	
			Übungen zu Simulation und wissenschaftliches Rechnen 1		2					[ ]	[ ]	[ ]	[ ]		
			Tutorium zu Simulation und wissenschaftliches Rechnen 1					2		[ ]	[ ]	[ ]	[ ]		
	Simulation und wissenschaftliches Rechnen 2[3]	Christoph Pflaum	Simulation und wissenschaftliches Rechnen 2	2					7.5	7.5				Written exam (90 min.) plus ungraded exercise performance	
			Übung zu Simulation und wissenschaftliches Rechnen 2		2										
			Tutorium zu Simulation und Wissenschaftliches Rechnen 2					2							
	Transport Phenomena	Günther Grün	Transport Phenomena	2					5	[5]		[5]		Oral exam (20 min.)	
			Tutorial to Transport Phenomena		½					[ ]		[ ]			
	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**		

Hauptstudienrichtung Simulation and Numerics (SN) für den Masterstudiengang Data Science (gem. $ 51 FPODataScience)														
Modul Nr.	Modulbezeichnung	Modulverantwortlicher	Lehrveranstaltung	SWS					Gesamt ECTS	Workload-Verteilung pro Semester in ECTS-Punkten:				Art und Umfang der Prüfung/Studienleistung	Modul Nr.
				V	Ü	P	S	T		1. Sem	2. Sem	3. Sem	4. Sem		

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).

aktualisiert am 20.04.2022