

**Hauptstudienrichtung Databased optimization (DO) 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		
4-5	Advanced Algorithms for Nonlinear Optimization	Michael Stingl	Advanced Algorithms for Nonlinear Optimization	2					5	[ 5 ]		[ 5 ]		Oral exam (15 min.)	4-5
	Algorithmic Game Theory	Yiannis Giannakopoulos	Algorithmic Game Theory (Optimization in Industry and Economy)	2					5	[ 5 ]		[ 5 ]		Oral exam (15 min.)	
			Übung Algorithmic Game Theory		1					[ ]		[ ]			
	Computational Complexity	Yiannis Giannakopoulos	Computational Complexity	2					5		[ 5 ]		[ 5 ]	Oral exam (30 min.)	
			Übung zu Computational Complexity		1						[ ]		[ ]		
	Convex Geometry and Applications	Timm Oertel	Convex Geometry and Applications	2					5	[ 5 ]		[ 5 ]		Oral exam (15 min.)	
			Practical Session to Convex Geometry and Applications		1						[ ]		[ ]		
	Discrete Optimization	Alexander Martin	Diskrete Optimierung I	2					5	[ 5 ]		[ 5 ]		Oral exam (15 min.)	
	Diskrete Optimierung II	Alexander Martin	Diskrete Optimierung II	2					5		[ 5 ]		[ 5 ]	Oral exam (20 min.)	
			Übung Diskrete Optimierung II		1							[ 5 ]			
	Introduction to Material- and Shape Optimization	Michael Stingl	Introduction to Material and Shape Optimization	4					10		[ 10 ]		[ 10 ]	Oral exam (20 min.)	
	Numerical Aspects of Linear and Integer Programming	Alexander Martin	Numerical Aspects of Linear and Integer Programming	2					5		[ 5 ]		[ 5 ]	Oral exam (15 min.)	
			Übung zu Numerical Aspects of Linear and Integer Programming		½							[ ]			
	Optimization with Partial Differential Equations	Michael Stingl	Optimization with Partial Differential Equations	2					5	[ 5 ]		[ 5 ]		Oral exam (20 min.)	
			Tutorial to Optimization with Partial Differential Equations		½							[ ]			
Project seminar	Project responsables	Project seminar				4		5	[ 10 ]	[ 10 ]	[ 10 ]		Presentation, code, report		
		Project seminar				2				[ 5 ]	[ 5 ]	[ 5 ]			
Robuste Optimierung 2	Frauke Liers	Robuste Optimierung 2	2					5		[ 5 ]		[ 5 ]	Oral exam (15 min.)		
		Übung zu Robuste Optimierung 2		2							[ ]			[ ]	
Vertiefte Nichtlineare Optimierung <sup>1</sup>	Wolfgang Achtziger	Advanced Nonlinear Optimization	4					10	[ 10 ]		[ 10 ]		Oral exam (20 min.)		
		Tutorials to Advanced Nonlinear Optimization		1							[ ]			[ ]	
<b>Summe Hauptstudienrichtung Databased optimization (DO) für den Masterstudiengang Data Science</b>								<b>30</b>	<b>5-15</b>	<b>5-15</b>	<b>10</b>	<b>0</b>			
								<b>20</b>	<b>5-15</b>	<b>5-15</b>	<b>0</b>	<b>0</b>			

**Fußnoten:**

<sup>1</sup> This module will be offered in the winter term 22/23 for the first time.