Course Offer Master Summer Semester 2023

Digital Health (DH)

(Status: 04/14/2023)

	Course Titel	Type	Lecturers Supervisors	weekly hours per semester	CP	Participants (max.)	Language	Health Systems and Sciences for Digita Health	Software Architectures for Digital Health	Ethics, Law and Copliance for Digital Health	Data Science for Digital Health	Digital Health Project Lab	Concepts and Methods	Technologies and Tools	Specialization	Concepts and Methods	Technologies and Tools	Specialization	Concepts and Methods	Technologies and Tools	Specialization	Concepts and Methods	Technologies and Tools	Specialization	Communication Skills	Management and Leadership	Design Thinking Basic	Design Thinking Advanced	Principles of IT Systems	Fundamentals of Programming	Introduction to Principles in Medicine	Fundamentals of Healthcare Systems
								Digital Health					**Scalable Computing Algorithms for Digital Health**			**Digitalization of Clinical Research Processes**			**Acquisition, Processing and Analyis of Health Data**			**Health Data Security**			**Professional Skills**				**Bridge moduls**			
								DH					**SCAD**			**DICR**			**APAD**			**HDAS**			**PSK**				**BM**			
								HPI-DH-HSS	HPI-DH-SAW	HPI-DH-ELC	HPI-DH-DS	HPI-DH-PL	HPI-SCAD-CM	HPI-SCAD-TT	HPI-SCAD-S	HPI-DICR-CM	HPI-DICR-TT	HPI-DICR-S	HPI-APAD-CM	HPI-APAD-TT	HPI-APAD-S	HPI-HDAS-CM	HPI-HDAS-TT	HPI-HDAS-S	HPI-PSK-CO	HPI-PSK-MLE	HPI-PSK-DTB	HPI-PSK-DTA	HPI-Einstieg-IT	HPI-Einstieg-PM	HPI-Einstieg-MM	HPI-Einstieg-HS
								MA Digital Health Prüfungsordnung 2021					**MA Digital Health Prüfungsordnung 2021**												**MA Digital Health Prüfungsordnung 2021**								
1	**21st Century Health Care Businesses: Regulatory, Legal, and Public Policy Aspects**	S	Prof. Dr. Ariel Stern	2	3	20	EN			3																						
2	**Advanced Competitive Programming**	L	Prof. Dr. Tobias Friedrich, Philipp Fischbeck, Hans Gawendowicz	4	6		DE						6	6	6																	
3	**Advanced Cryptography**	L/E	Prof. Dr. Anja Lehmann, Dennis Dayanikli	4	6		DE															6	6	6								
4	**Advanced Medical Machine Learning Seminar**	S	Prof. Christoph Lippert	4	6	10	EN						6	6	6				6	6	6											
5	**Algorithmic Game Theory**	L/E	Prof. Dr. Tobias Friedrich, Dr. Pascal Lenzner	4	6		DE						6	6	6																	
6	**Anonymous Credentials**	S	Prof. Dr. Anja Lehmann, Cavit Özbay, Katja Assaf	4	6	10	EN															6	6	6								
7	**Application Security**	L	Dr. Anne Kayem	4	6		EN															6	6	6								
8	**Applied data science on real-world hospital data**	S	Ferdous Nasri, Prof. Dr. Bernhard Renard	4	6	10	EN						6	6	6				6	6	6											
9	**Applied Machine Learning for Digital Health**	S	Dr. Matthieu Schapranow	4	6		EN				6						6	6		6	6											
10	**Business Process Intelligence**	L	Prof. Dr. Mathias Weske	4	6		EN						6	6	6	6	6	6														
11	**Competitive Programming with Deep Learning**	PS	Prof. Dr. Tobias Friedrich, Dr. Sarel Cohen, Dr. Kirill Simonov	4	6		EN				6		6	6	6																	
12	**Computational Statistics**	L/E	Prof. Dr. Bernhard Renard, Fabio Malcher Miranda, Pauline Hiort, Hendrick Rätz	4	6	60	EN						6	6	6				6	6	6											
13	**Concept & Techniques for Analysis and Visualization of Spatial Data**	S/P	Prof. Dr. Jürgen Döllner, Dr. Rico Richter, Justus Hildebrandt, Sebastian Schulz	4	6		DE						6	6	6				6	6	6											
14	**Cryptographic Protocols**	S	Prof. Dr. Anja Lehmann, Tarek Galal, Maximilian Kroschewski	4	6	20	EN															6	6	6								
15	**Digital Health Systems**	S	Prof. Lorenzo Valle Garcilazo	4	6		EN									6	6	6														
16	**Digital N-of-1 trials and their application**	S	Dr. Stefan Konigorski, Dr. Matteo Danieletto	2	3	20	EN				3		3	3	3	3	3	3	3	3	3											
17	**Distributed Algorithms**	L/E	Prof. Dr. Tobias Friedrich, Dr. George Skretas	4	6		EN						6	6	6																	
18	**Dynamic Programming and Reinforcement Learning**	L/E	Dr. Rainer Schlosser, Alexander Kastius	4	6		EN						6	6	6	6	6	6														
19	**Ethical Issues for Digital Health**	L/S	Prof. Robert Ranisch	2	3		EN			3																						
20	**Future Interactive Technology**	L	Prof. Dr. Patrick Baudisch, Muhammad Abdullah, Lukas Rambold	4	6		EN									6	6	6														
21	**Future Internet**	L	Prof. Dr. Holger Karl	4	6		DE/EN						6	6	6																	
22	**Global Team-Based Innovation II**	P/S	Prof. Dr. Falk Uebernickel	4	6	15	EN																		6		6					
23	**Hardware Conscious Data Processing**	L	Prof. Dr. Tilmann Rabl	4	6		EN						6	6	6																	
24	**HCI Project Seminar: Software systems for Virtual Reality and Fabrication**	S	Prof. Dr. Patrick Baudisch	4	6		EN						6	6	6																	
25	**Machine Learning for Image Analysis**	L/E	Prof. Dr. Dagmar Kainmüller	4	6		EN						6	6	6				6	6	6											
26	**Machine Learning for Time Series Data**	PS	Dr. Tim Januschowski, Dr. Jan Gasthaus	2	3		EN						3	3	3	3	3	3	3	3	3											
27	**Managing and Researching Healthcare Systems**	L	Prof. Dr. Reinhard Busse, Dr. Wilm Quentin	4	6		EN	6																								
28	**Natural Language Processing**	L/E	Prof. Dr. Gerard de Melo	4	6	50	EN				6					6	6	6	6	6	6											
29	**Netzwerksicherheit**	L	Prof. Dr. Christian Dörr	4	6		DE															6	6	6								
30	**PACE challenge on Twinwidth**	PS	Prof. Dr. Tobias Friedrich, Dr. Davis Issac, Dr. Kirill Simonov, Aikaterini Niklanovits	4	6	10	EN						6	6	6																	
31	**Parameterized and Approximation Algorithms**	L/E	Prof. Dr. Tobias Friedrich, Dr. Davis Issac, Dr. Kirill Simonov	4	6		EN						6	6	6																	
32	**Practical Applications of Deep Learning**	S	Dr. Haojin Yang, Ting Hu, Jona Otholt, Gregor Nickel	4	6		EN				6		6	6	6				6	6	6											
33	**Probability and Computing**	L/E	Prof. Dr. Tobias Friedrich, Dr. Samuel Baguley, Dr. Andreas Göbel	4	6		EN						6	6	6																	
34	**Responsible artifical Intelligence**	PS	Prof. Dr. Holger Giese, Christian Adriano, Christian Zöllner, Matthias Barkowsky	4	6		EN												6	6	6											
35	**Safe Reinforcement Learning for Self-Adaptive Systems**	PS	Prof. Dr. Holger Giese, Christian Adriano, Sona Ghahremani, He Xu, Iqra Zafar, Mustafa Ghani	4	6		EN				6		6	6	6																	
36	**Source Detection in Complex Networks**	S	Dr. Katharina Baum	4	6	10	EN						6	6	6				6	6	6											
37	**Statistics in Connected Healthcare**	L/E	Prof. Dr. Bert Arnrich	4	6		EN						6	6	6	6	6	6	6	6	6											
38	**The Fundamentals of Human-Centred Digital Health Applications**	S	Dr. Danielly de Paula	4	6		EN						6	6	6	6	6	6	6	6	6											
39	**Towards Generalizable Hierarchical Classification**	S	Prof. Dr. Bernhard Renard, Fabio Malcher Miranda	4	6	3	EN						6	6	6				6	6	6											
40	**Trends in AI and Deep Learning Research Seminar**	PS	Prof. Dr. Gerard de Melo, Maximilian Schall, Sedigheh Eslami, Jingyi Zhang	4	6	20	EN				6					6	6	6	6	6	6											
41	**Usable Security and Privacy**	S	Dr. Anne Kayem	4	6		EN															6	6	6								
42	**Visual Data Exploration and Story Telling - the good, the bad, and the ugly**	S	Prof. Dr Bernhard Renard, Dr. Christoph Schlaffner, Simon Witzke	4	6	12	EN						6	6	6				6	6	6											
43	**Visual Media Analysis and Processing Techniques**	S/P	Dr. Matthias Trapp, Max Reimann, Jobin Wattasseril	4	6		DE						6	6	6				6	6	6											
	Professional Skills - Courses																															
44	**Academic Writing for Science**	S	Dr. Sharon Nemeth	2	3	15	EN																		3							
45	**Advanced Track Desgin Thinking (D-School)**	P/S	Dr. Claudia Nicolai	6	9	30	EN																					9				
46	**Basic Track Design Thinking (D-School)**	P/S	Dr. Claudia Nicolai	6	9	80	EN																				9					
47	**Communicating technology successfully - developing communication strategies**	S (Block)	Nadine Lux	2	3	20	EN																		3							
48	**Dealing with uncertainty**	S (Block)	Christoph Burger	2	3	30	EN																		3	3						
49	**Design Thinking for Digital Engineering**	L	Dr. Julia von Thienen	2	3		EN																		3			3				
50	**Führungskompetenz**	S (Block)	Michael Heidemann Eugen Unger	4	6	30	DE																			6						
51	~~**Global Design Thinking Workshop (D-School)**~~ **Does not take place !**																															
52	**How to be a (Startup)-CTO**	S	Dr. Frank Pawlitschek	2	3	30	EN																			3						
53	**Management Essentials - englisch**	L	Prof. Dr. Eric Kearney	2	3	25	EN																			3						
54	**Management Essentials - german**	L	Prof. Dr. Eric Kearney	2	3	25	DE																			3						
55	**Managing stakeholders – The psychology and neuroscience of successfully influencing others**	S (Block)	Dr. Franziska Frank	2	3	25	EN																			3						
56	**Product Builder**	S	Dr. Frank Pawlitschek, David Hahn	4	6	20	EN																			6						
57	**Responsible Data Science**	S (Block)	Dr. Simon Hirsbrunner	2	3	20	EN																		3							
58	**SonicThinking - Methods of Working with Sound**	S	Dr. Julia von Thienen	2	3		EN																		3			3				
59	**Was brauche ich, was brauchst du? - Konflikte verstehen und konstruktiv bearbeiten**	S (Block)	Anna-Lisa Obermann	2	3	20	DE																		3	3						
60	**Wayfinder: Self- and Leadership Development (D-School)**	P/S	Dr. Martin Schwemmle, Dr. Claudia Nicolai	2	3	18	EN																			3		3				