

Appendix A. Modules and examinations for the Master's program in Data Science and Artificial Intelligence

Master's program (M.Sc.) Data Science and Artificial Intelligence													
category	module name	type of test	grading	CP (ECTS)		semester							
						1		2		3		4	
						V/U/P SWS	CP	V/U/P SWS	CP	V/U/P SWS	CP	V/U/P SWS	CP
				without grade	with grade								
DSAI core lecture <small>core lecture in computer science</small> DSAI core lecture or DSAI advanced lecture or DSAI seminar	(Alternating modules, 9 CP each, see below) (Alternating modules, 9 CP each, see below) (Alternating modules, seminar (7 CP each), core lectures (9 CP each) or advanced lectures (variable number of CP), see below)	exam(s), PVL	b	0	18	4/2/0 each	9	2/2/2	9				
		exam(s), PVL, verbally, in writing	b	0	9	4/2/0 each	9						
			b	0	27 to 31	2/2/0	6	2/2/0	6	2/2/0	6		
DSAI seminar <small>elective subject area</small>	(Various modules, 7 CP each, see below) (Various modules, variable number of CP, see below)	verbally, in writing	b	0	7	2/2/0	6			2/0/0	3		
			u	at least 17	0			0/0/3 4/2/0	7 8		4/2/0	9	
		master's seminar master's thesis	b	0	12 30						12		30
SUM							30		30		30		30

DSAI core lectures	Artificial Intelligence	exam(s), PVL	b	0	9
	Information Retrieval and Data Mining	exam(s), PVL	b	0	9
	Database Systems	exam(s), PVL	b	0	9
	Machine Learning	exam(s), PVL	b	0	9
	Neural Networks: Theory and Implementation	exam(s), PVL	b	0	9
	Image Processing and Computer Vision	exam(s), PVL	b	0	9
	Automated Reasoning	exam(s), PVL	b	0	9
The examination board can modify the course offering.*					

core lectures in computer science (corresponds to: core lectures of the Master's program in Computer Science without core and advanced lectures DSAI)	Algorithms and Data Structures	exam(s), PVL	b	0	9
	Compiler Construction	exam(s), PVL	b	0	9
	Complexity Theory	exam(s), PVL	b	0	9
	Computer Algebra	exam(s), PVL	b	0	9
	Computer Graphics	exam(s), PVL	b	0	9
	Cryptography	exam(s), PVL	b	0	9
	Data Networks	exam(s), PVL	b	0	9
	Distributed Systems	exam(s), PVL	b	0	9
	embedded systems	exam(s), PVL	b	0	9
	Geometric Modeling	exam(s), PVL	b	0	9
	Human Computer Interaction	exam(s), PVL	b	0	9
	Introduction to Computational Logic	exam(s), PVL	b	0	9
	Operating Systems	exam(s), PVL	b	0	9
	optimization	exam(s), PVL	b	0	9
	Semantics	exam(s), PVL	b	0	9
	Software Engineering	exam(s), PVL	b	0	9
	Telecommunication 1	exam(s), PVL	b	0	9
	Verification	exam(s), PVL	b	0	9
The examination board can modify the course offering.					

advanced lectures DSAI The range of advanced DSAI lectures can vary each semester.	Ethics for Nerds (aka Data Ethics)	exam(s), PVL	b	0	variable
	Security	exam(s), PVL	b	0	9
	Stochastics 1	exam(s), PVL	b	0	9
	Stochastics 2	exam(s), PVL	b	0	9
	Mathematical Statistics AI	exam(s), PVL	b	0	9
	Planning	exam(s), PVL	b	0	9
The examination board can modify the course offering.*					

DSAI seminars The range of DSAI seminars can vary every semester. The examination board can modify the course offering.*	verbally, in writing	b	0	7
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elective subject area	tutor	tutoring	u	4	0
	Soft Skill Seminar	verbally, in writing	u	variable	0
	Language courses (max. 6 CP)	verbally, in writing	u	3 or 6	0
	Industrial internship (max. 6 CP)		u	6	0
	Master internships (6 CP each)		u	6	0

	Further modules from the area of DSAI or computer science	exam(s), PVL	u	variable	0
The examination board can modify the course offering.					

* The current offer is published on the website of the Examination Secretariat.

Legend:V = lecture, Ü = exercise, P = project or internship, PVL = preliminary examination, CP = credit points, SWS = semester hours per week