Data Science Course Mapping

Read the descriptions carefully and fill in the form as described in the instructions below.

For your admission to the Master's of Data Science you need a Bachelor's degree in Computer Science, Mathematics, Physics, Electrical Engineering or a related area. You need to fill in the following form in which you state the relevant courses you have taken. To account for your mathematical background you have to provide a mapping of your courses to the courses needed for admission. You have to completely fill in either table 1a. or 1b. Additionally, you need to provide the course mapping accounting for at least 60 ECTS in table 2a-c.

You can fulfill a course either by a single course or a combination of courses you have taken. You may use a course you have taken mutliple times in the mapping.

You can find course description in RWTHonline. Please attach information about the courses you took (offcial module or course descriptions).

Table 1a.

Course Name	ECTS	Your Course
Analysis I or Analysis for CS	8	
Linear Algebra I or Linear Algebra for CS	6	
Stochastic I or Introduction to Applied Stochastic	6	

Table 1b.

Course Name	ECTS	Your Course
Höhere Mathematik I	8	
Höhere Mathematik II	8	
Höhere Mathematik III	8	

Table 2a. (Mathematics)		
Course Name	ECTS	Your Course
Discrete Structures	6	
Analysis II	9	
Analysis III	9	
Functional Analysis	9	
Complex Analysis (Funktionentheorie)	9	
Computer Algebra	9	
Numerical Analysis I	9	
Numerical Analysis II	9	
Numerical Analysis III	9	
Stochastic II	6	
Ordinary Differential Equation	9	
Höhere Mathematik IV	7	
Multivariate Statistics (Multivariate statistische Verfahren)	9	
Mathematical Statistics	9	
Categorical Data Analysis	9	
Computer Stochastic	6	
Stochastic Analysis	9	
Optimization A	9	
Optimization B	9	
Discrete Mathematics I	9	
Graph Theory I	6	
Mathematical Logic I	6	

Table 2b. (Computer Science)

Course Name	ECTS	Your Course
Data Structures and Algorithms	8	
Introduction to Software Engineering (Einführung in die Softwaretechnik)	6	
Databases and Information Systems	6	
Operation Systems and System Software	6	
Lab Course Systemprogramming	6	
Data Communication and Security	6	
Formal Systems, Automata and Processes	6	
Computability and Complexity	6	
Efficient Algorithms	6	
Model Checking	6	
Satisfiability Checking	6	
Complexity Theory	6	
Advanced Automata Theory	6	
Model based Software Development	6	
Advanced Internet Technology	6	
Communication System Engineering	6	
Embedded Systems	6	
Implementation of Databases	6	
Artificial Intelligence	6	
Knowledge Representation	6	
Statistical Classification	6	
Automatic Speech Recognition	6	
Computer Graphics	6	
Computer Vision	6	
Designing Interactive Systems	6	
High-Performance Computing	6	
Computational Differentiation	6	

Table 2c. (Physics)		
Course Name	ECTS	Your Course
Experimentalphysik IV	7	
Experimentalphysik Va	5	
Experimentalphysik Vb	5	
Vernetzung der Experimentalphysik	5	
Theoretische Physik III	9	
Theoretische Physik IV	9	
Vernetzung der Theoretischen Physik	8	
Fortgeschrittenen Praktikum	9	