

MDS Mathematical Data Science

- Students have to write their thesis in SP 3 or SP 4 and have to choose Computer Science as their minor subject.
- 60 C modules from mathematics have to be passed according to these regulations:

SP 3	SP 4	Practical course	Computer Science	Choose modules to fill up to 60 C
<p>At least 12 C SP 3 from the following cycles, including at least one (Ober-) Seminar:</p> <ul style="list-style-type: none"> - Optimisation - Variational Analysis - Image and Geometry processing - Scientific computing / applied mathematics 	<p>At least 12 C SP 4 from the following cycles, including at least one (Ober-) Seminar:</p> <ul style="list-style-type: none"> - Applied and mathematical stochastics - Statistical modelling and inference - Multivariate and non-Euclidean statistics - Statistical foundations of data science 	<p>One of these modules for 10 C :</p> <ul style="list-style-type: none"> - M.Mat.0731: Advanced practical course in scientific computing - M.Mat.0741: Advanced practical course in stochastics 	<p>One of the recommended modules from Computer Science below (at least 5 C).</p>	<p>To fill up to 60 C you can choose from:</p> <ul style="list-style-type: none"> - modules from SP 1-4 - up to 12 C from the minor subject computer science, recommended are the modules below

- 18 C in the minor subject Computer Science have to be chosen. All Computer Science modules from the master's degree programme in mathematics are allowed, but the ones listed below are recommended.
- 12 C in key competencies have to be chosen, from which at least one has to be offered by the Faculty of Mathematics and Computer Science.

Recommended modules from Computer Science

B.Inf.1236: Machine Learning (6 C)	M.Inf.1182: Seminar Knowledge (5 C)	M.Inf.1213: Algorithmisches Lernen und Mustererkennung (6 C)
B.Inf.1237: Deep Learning (6 C)	M.Inf.1185: Sensor Data Fusion (5 C)	M.Inf.1216: Datenkompression und Informationstheorie (6 C)
M.Inf.1112: Effiziente Algorithmen (5 C)	M.Inf.1186: Seminar Hot Topics in Data Fusion and Analytics (5 C)	M.Inf.1231: Spezialisierung Verteilte Systeme (6 C)
M.Inf.1151: Data Science and Big Data Analytics (5 C)	M.Inf.1187: Simulation-based Data Fusion and Analysis (5 C)	M.Inf.1232: Parallel Computing (6 C)
M.Inf.1171: Service-Oriented Infrastructures (5 C)	M.Inf.1210: Seminar Algorithmische Methoden und theoretische Konzepte (5 C)	M.Inf.1268: Informationstheorie (6 C)
M.Inf.1172: Using Research Infrastructures (5 C)	M.Inf.1141: Semistrukturierte Daten und XML (6 C)	M.Inf.1281: NOSQL Databases (6 C)
M.Inf.1181: Seminar NOSQL Databases (5 C)	M.Inf.1211: Probabilistische Datenmodelle und ihre Anwendungen (6 C)	M.Inf.1802: Praktikum XML (6 C)
M.Inf.2102 Advanced Statistical Learning for Data Science (6 C)	M.Inf.2201 Probabilistic Machine Learning (6 C)	M.Inf.1806: Projektseminar Datenbanken und Informationssysteme (6 C)
M.Inf.2241 Current Topics in Machine Learning (5 C)	M.Inf.1808: Practical Course on Parallel Computing (6 C)	