



Academic year 2026-2027

Master in Data Science (MDS)

The study plan and course descriptions provide an overview of the programme's structure and content, and may be subject to changes. In case a study programme offers multiple specialisations or streams, these are presented consecutively within the same document.

High-Performance Computing Track

Study Plan

1st semester (SA 2026-2027)

Core courses (24 ECTS)	Lecturers	Tags	ECTS
High-Performance Computing	Schenk, Eftekhari		6
Introduction to Data Science (MSc)	Wit		6
Introduction to Programming (Python)	Binder		6
Numerical Algorithms	Hormann		6
Elective courses (6 ECTS)	Lecturers	Tags	ECTS
Algorithms & Complexity	Papadopoulou		6
Fourier Analysis	Giacchi		3
Kernel Methods	Multerer		3
Machine Learning (MSc)	Wand		6

2nd semester (SP 2027)

Core courses (18 ECTS)	Lecturers	Tags	ECTS
Computer Architectures and Logic Design	Pozzi		6
Discretization Methods	Pivkin		6
Quantum Computing	Wolf		6
Elective courses (12 ECTS)	Lecturers	Tags	ECTS
Effective High-Performance Computing & Data Analytics	Schenk		6
Graphical Models	Wit		6
Particle Methods	Pivkin		6

3rd semester (SA 2027-2028)

Core courses (21 ECTS)	Lecturers	Tags	ECTS
MCS Master thesis preparation	Eftekhari, Schenk, Wit		6
Distributed Algorithms	Pedone		6
Distributed Systems	Eugster		6
Elective courses (9 ECTS)	Lecturers	Tags	ECTS
Algorithms & Complexity	Papadopoulou		6

<u>Bioinformatics</u>	Limongelli	6
<u>Data Analytics for Fraud Detection</u>	Pasadakis, Sathe	3
<u>Deep Learning Lab</u>	Vercesi	3
<u>Fourier Analysis</u>	Giacchi	3
<u>Graph Deep Learning</u>	Alippi	3
<u>Introduction to Programming (Python)</u>	Binder	6
<u>Kernel Methods</u>	Multerer	6
<u>Machine Learning (MSc)</u>	Wand	6
<u>Software Atelier: Simulation, Data Science & Supercomputing</u>	Schenk	6

4th semester (SP 2028)

Core courses (0 ECTS)	Lecturers	Tags	ECTS
<u>MCS Master thesis preparation</u>	Eftekhari, Schenk, Wit		6
Elective courses (6 ECTS)	Lecturers	Tags	ECTS
<u>Advanced Topics in Machine Learning</u>	Alippi		3
<u>Effective High-Performance Computing & Data Analytics</u>	Schenk		6
<u>Graphical Models</u>	Wit		6
<u>Particle Methods</u>	Pivkin		6
Thesis			24

Statistical Science Track

Study Plan

1st semester (SA 2026-2027)

Core courses (24 ECTS)	Lecturers	Tags	ECTS
<u>High-Performance Computing</u>	Schenk, Eftekhari		6
<u>Introduction to Data Science (MSc)</u>	Wit		6
<u>Introduction to Programming (Python)</u>	Binder		6
<u>Numerical Algorithms</u>	Hormann		6
Elective courses (6 ECTS)	Lecturers	Tags	ECTS
<u>Algorithms & Complexity</u>	Papadopoulou		6
<u>Fourier Analysis</u>	Giacchi		3
<u>Kernel Methods</u>	Multerer		3
<u>Machine Learning (MSc)</u>	Wand		6

2nd semester (SP 2027)

Core courses (12 ECTS)	Lecturers	Tags	ECTS
<u>Graphical Models</u>	Wit		6
<u>Stochastic Methods</u>	Sulem		6
Elective courses (18 ECTS)	Lecturers	Tags	ECTS
<u>Computer Vision</u>	Engelmann		6
<u>Data Analytics</u>	Bucur-Cosma		6
<u>Effective High-Performance Computing & Data Analytics</u>	Schenk		6
<u>Introduction to Bayesian Learning</u>	Mira		3
<u>Probability & Measure</u>	Multerer		6
<u>Text Analysis and Spatial Data for Economists</u>	Parchet, D'Ambros		6

3rd semester (SA 2027-2028)

Core courses (6 ECTS)	Lecturers	Tags	ECTS
<u>MCS Master thesis preparation</u>	Eftekhari, Schenk, Wit		6
Elective courses (66 ECTS)	Lecturers	Tags	ECTS
<u>Algorithms & Complexity</u>	Papadopoulou		6
<u>Analysis of Social Networks</u>	Lomi		6
<u>Bioinformatics</u>	Limongelli		6
<u>Computational Biology and Drug Design</u>	Limongelli		6
<u>Data Analytics for Fraud Detection</u>	Pasadakis, Sathe		3
<u>Deep Learning Lab</u>	Vercesi		3
<u>Fourier Analysis</u>	Giacchi		3
<u>Generative AI</u>	Engelmann		6

<u>Graph Deep Learning</u>	Alippi	3
<u>Introduction to Programming (Python)</u>	Binder	6
<u>Kernel Methods</u>	Multerer	6
<u>Machine Learning (MSc)</u>	Wand	6
<u>Software Atelier: Simulation, Data Science & Supercomputing</u>	Schenk	6
4th semester (SP 2028)		
Core courses (0 ECTS)	Lecturers	Tags
<u>MCS Master thesis preparation</u>	Eftekhari, Schenk, Wit	6
Elective courses (6 ECTS)	Lecturers	Tags
<u>Advanced Topics in Machine Learning</u>	Alippi	3
<u>Computer Vision</u>	Engelmann	6
<u>Data Analytics</u>	Bucur-Cosma	6
<u>Effective High-Performance Computing & Data Analytics</u>	Schenk	6
<u>Introduction to Bayesian Learning</u>	Mira	3
<u>Probability & Measure</u>	Multerer	6
<u>Text Analysis and Spatial Data for Economists</u>	Parchet, D'Ambros	6
Thesis		24