Course Programme DAS in Data Science

The DAS in Data Science consists in total of 35 to 45 ECTS.

More precisely, one must take one foundations course from a set of three (6 to 8 ECTS), at least 12 ECTS coming from a specialization track, and a capstone project (8 ECTS). The remaining credits can be freely chosen from the catalogue of the programme.

Foundations courses (choose one) – must be taken in the first semester

Course #	Course	ECTS	Semester
252-0220-00	Introduction to Machine Learning	8	Spring
401-3632-00	Computational Statistics	8	Spring
227-0105-00	Introduction to Estimation and Machine Learning	6	Autumn

Specialization tracks (choose one track only)

Track: Hardware for ML			
227-0150-00	Systems-on-chip for Data Analytics and Machine Learning	6	Spring
227-0155-00	Machine Learning on Microcontrollers	6	Autumn/ Spring

Track: Image Analysis & Computer Vision			
263-5902-00	Computer Vision	8	Autumn
227-0391-00	Medical Image Analysis	3	Spring
252-0579-00	3D Vision	5	Spring
227-1034-00	Computational Vision	6	Spring
263-3710-00	Machine Perception	8	Spring
Track: Neural Information Processing			
227-0973-00	Translational Neuromodelling	8	Spring
227-0395-00	Neural Systems	6	Spring
227-0421-00	Learning in Deep Artificial and Biological Neuronal Networks	4	Autumn
227-1033-00	Neuromorphic Engineering I	6	Autumn
227-1032-00	Neuromorphic Engineering II	6	Spring
227-1034-00	Computational Vision	6	Spring
Track: Statistics			
One of the two courses: 401-3622-00 **or** 401-0649-00	 Statistical Modelling **or** Applied Statistical Regression	 8 5	 Autumn Autumn
One of the two courses: 401-4623-00 **or** 401-6624-11	 Time Series Analysis **or** Applied Time Series	 6 5	 Autumn Spring

One of the two courses: 401-6102-00 **or** 401-0102-00	 Multivariate Statistics **or** Applied Multivariate Statistics	 4 5	 Spring Spring
401-0625-01	Applied Analysis of Variance and Experimental Design	5	Autumn
401-4632-15	Causality	4	Spring
401-3621-00	Fundamentals of Mathematical Statistics	10	Autumn
401-3612-00	Stochastic Simulation	5	Autumn
401-3628-14	Bayesian Statistics	4	Autumn
Track: Machine Learning and Artificial Intelligence			
263-3210-00	Deep Learning	8	Autumn
252-3005-00	Natural Language Processing	5	Autumn
252-0535-00	Advanced Machine Learning	10	Autumn
261-5110-00	Optimization for Data Science	10	Spring
263-5210-00	Probabilistic Artificial Intelligence	8	Autumn
252-0526-00	Statistical Learning Theory	8	Spring
263-5300-00L	Guarantees for Machine Learning	7	Autumn
263-2400-00	Reliable and Interpretable Artificial Intelligence	6	Autumn
263-3710-00	Machine Perception	8	Spring
227-0689-00	System Identification	4	Autumn

Track: Big Data Systems			
One of the two courses: 263-3010-00 **or** 252-3900-00	 Big Data **or** Big Data for Engineers	 10 6	 Autumn Spring
263-2800-00	Design of Parallel and High-Performance Computing	9	Autumn
252-0834-00	Information Systems for Engineers	4	Autumn

The courses are regular offers from ETH Master's programs and will thus be held throughout the regular semesters. Courses will be taught in either spring or autumn semester.

Zurich, 09.02.2022