

# Data Science

**Code:** SCI3096

**Extent:** 20-25 credits

**Language:** English

**Teacher in charge:** [Prof. Aki Vehtari](#)

**Administrative contact:** [Planning Officer Elsa Kivi-Koskinen](#)

**Target group:** All Aalto students, with sufficient prerequisite knowledge. Not for Data Science major students. M.Sc. students should check with their own study programme that this minor can be included in the degree.

**Application procedure:** Open for all students of Aalto University.

**Quotas and restrictions:** No quotas.

**Prerequisites:** Basic courses in engineering mathematics (or equivalent knowledge) and either CS-A1110 Programming 1 (follow-up course CS-A1120) or CS-A1111/CS-A1113 Basics in Programming Y1 (follow-up course CS-A1121/ CS-A1123). Students are requested to check the prerequisites of the courses before signing up. Some of the optional courses for the minor subject are quite demanding.

## Content and structure of the minor

Code	Name	ECTS	Period	Suggested year
Compulsory programming course, 5 cr:				
<a href="#">CS-A1120</a>	Programming 2*	5	IV-V	year 1
<a href="#">CS-A1121/CS-A1123</a>	Basics in Programming Y2*	5	IV-V	year 1
Compulsory courses, 10 cr:				
<a href="#">CS-C3160</a>	Data science	5	II	year 2
<a href="#">MS-C1343</a>	Linear algebra	5	I	year 2
Optional courses. Choose 5-10 cr:				
<a href="#">MS-C1620</a>	Statistical Inference	5	III-IV	
<a href="#">MS-C2111</a>	Stochastic processes	5	I	
<a href="#">MS-C2128</a>	Prediction and time-series analysis	5	II	
<a href="#">CS-E3190</a>	Principles of Algorithmic Techniques	5	I-II	
<a href="#">CS-E3210</a>	Machine Learning: Basic Principles	5	I-II	
<a href="#">CS-E4640</a>	Big Data Platforms	5	I-II	
<a href="#">CS-E4600</a>	Algorithmic Methods of Data Mining	5	I-II	
<a href="#">CS-E5710</a>	Bayesian Data Analysis	5	I-II	
<a href="#">CS-E4800</a>	Artificial Intelligence	5	III-IV	
<a href="#">CS-E4840</a>	Information Visualization	5	IV	
<a href="#">CS-E4580</a>	Programming Parallel Computers	5	V	

\*Students who have Programming 2 in their basic studies, cannot include Basics in Programming Y2 in the minor. If Programming 2 or Basics in Programming Y2 are placed elsewhere in the degree, students should choose one more optional course instead.