

# Statistical Science Master of Science

The two-year master's programme Statistical Science provides you with a thorough introduction to the general philosophy and methodology of statistical modelling, data analysis and data science.



The Statistical Science programme has two specialisations. You can specialise in either life and behavioural sciences or in data science. Key topics in the first specialisation are longitudinal analysis, genomics, genetics, high dimensional ("big") data, medical imaging and psychometrics. In the data science specialisation you focus more on data mining, pattern recognition and deep learning. The Statistical Science programme consists of a core programme shared by all students, and specialisation specific courses, electives, an internship and a master's thesis.

- The Statistical Science programme is a unique collaboration of top institutes in The Netherlands. Leiden University's Institutes of Mathematics, Psychology and Computer Science, and the university's Medical Center cooperate with institutes at Wageningen UR and VUmc Amsterdam. This means that education is provided by statistical experts in their respective fields.

## Why Statistical Science at Leiden University?

- Each specialisation offers you a unique combination of knowledge and expertise. These allow for an elaborate preparation for a career as a data scientist, researcher or statistician anywhere.
- Job perspectives after graduation are great: statisticians and data scientists are highly sought after in various industries such as academia, marketing, banking, government, official statistics, healthcare, bioinformatics and more.

## Facts and figures

Language	English
Duration	2 years
Degree	Master of Science
Start	September or February
Admission	Start September: 1 April non-EU/15 June EU Start February: 15 October non-EU/1 December EU
Tuition fee	€ 2,078 EU/18,300 non-EU

## More information

For more information about the programme, entry requirements, admissions procedures, tuition fees and scholarships, please visit our website: or contact the programme

[masters.universiteitleiden.nl/  
statisticalscience](https://masters.universiteitleiden.nl/statisticalscience)  
[pr@stat.leidenuniv.nl](mailto:pr@stat.leidenuniv.nl)



**Universiteit  
Leiden**  
The Netherlands

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# Statistical Science: programme overview and courses

## Programme overview (120 EC)

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### Compulsory core elements (53 EC)

- Statistics and Probability (9 EC)
- Mathematics for Statisticians (3 EC)
- Statistical Computing with R (6 EC)
- Linear & Generalized Linear Models and Linear Algebra (9 EC)
- Mixed and Longitudinal Modelling (6 EC)
- Statistical Consulting (5 EC)
- Advanced Statistical Computing (3 EC)
- Multivariate Analysis and Multidimensional Data Analysis (6 EC)
- Bayesian Statistics (6 EC)

### Data Science specialisation (67 EC)

#### Specialisation courses (27 EC)

- Introduction to Data Science (3 EC)
- Databases (6 EC)
- Statistical Learning Theory (6 EC)
- High-Dimensional Data Analysis (6 EC)
- Advances in Data Mining (6 EC)

#### Electives (choose 6 EC)

- Bayesian Networks (6 EC)
- Neural Networks (6 EC)

#### Internship (0-10 EC)

During the 7 week internship, you are free to apply your knowledge and skills at positions throughout a wide array of industries.

#### Thesis (24-34 EC)

The master's thesis is targeted to be more theoretical with stringent requirements in terms of supervision and academic content. Upon approval, the internship may be included into the master's thesis to form an extended master's thesis (34 EC).

### Life and Behavioural Sciences specialisation (67 EC)

#### Specialisation courses (9 EC)

- Introduction to the Life and Behavioural Sciences (3 EC)
- Study Designs in the Life and Behavioural Sciences (6 EC)

#### Electives (choose 24 EC)

- Statistical Learning Theory (6 EC)
- Psychometrics and SEM (6 EC)
- High-Dimensional Data Analysis (6 EC)
- Statistical Genetics (6 EC)
- Survival Analysis (6 EC)
- Survey Data Analysis (6 EC)
- Optional Course 1 (6 EC)
- Optional Course 2 (6 EC)
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