unine
Université de Neuchâtel
Faculty of Science

# Master of Science in Statistics

## A challenge for the future

Professions are becoming increasingly multidisciplinary. It is no longer enough to master only one technological or managerial field; it has become necessary to know how to combine aspects from several disciplines, in order to manage a coherent body of information and data. In this sense, the field of statistics plays an important role as it helps us to sort out information, keeping only that which is essential to draw relevant conclusions. The importance of statistical tools becomes clear when one considers the steadily increasing flow of raw data that needs to be processed.

Statistics also plays an important role in health fields, especially in epidemiology and medicine. In epidemiology, vaccination programs have been the subject of statistical studies. Here, the aim is to determine the population segments most susceptible to a disease, the rate of disease vector transmission, and the consequences of vaccination. In medicine, clinical trials are particularly useful in comparing various treatments to demonstrate the effectiveness of new medications.

## Acquired skills and objectives

The objective of the Master's degree in Statistics is to train students to become independent statisticians, ready to enter and operate in the professional environment. Statistical methodology and applications are undeniably indispensable. Training in Statistics must combine experimental, practical and theoretical aspects.

The Master's degree in Statistics is particularly designed to equip students with these vital skills. The programme provides solid training in statistical theory and applied methods in practical experience. It caters to both university students and professionals.



### Degree awarded

Master of Science in Statistics
(Master of Science en statistique)

### Credits

90 ECTS, 3 semesters

### Teaching language

English

### Conditions d'admission

The MSc is open to all students in possession of either a Bachelor's degree in Sciences, Economics or Human Sciences, or of any other degree deemed equivalent by the admissions committee. The prerequisite is a sufficient level in mathematics (analysis and linear algebra) and statistics (inference and linear modelling).

### Application deadline

30 April for the autumn semester (mid-September)
Start of the Master program: Autumn semester

### Registration

Bureau des immatriculations
Av. du 1er-Mars 26
CH-2000 Neuchâtel
+41 32 718 10 00
www.unine.ch/immatriculation

### Information

Institute of Statistics (ISTAT)
mscstat@unine.ch
www.unine.ch/mscstat

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## Specific strengths

Courses in the MScSTAT programme are taught by internationally recognized visiting professors and the faculty of the Institute of Statistics (ISTAT). Research interests include sampling, estimation, semi-/non-parametric methods, multivariate statistics, data mining and complex data analysis. ISTAT maintains a constant and productive collaboration with the Swiss Federal Statistical Office. Public as well as private organizations engage the Institute for a range of different projects.

- Study for your Master's degree with pre-eminent specialists
- Enjoy a flexible system of learning
- Achieve a balance between theory and application
- Study in a friendly environment with affordable registration fees
- Build your confidence in an English-speaking work environment
- Expand your professional horizons
- Join a dynamic and multicultural student body

## Structure of the programme

The Master's degree programme is divided into two semesters, each lasting 14 weeks and followed by a semester for the thesis or final report. It is comprised of regular courses, seminars, elective courses and applied research projects. Classes are concentrated within one part of the week. The Master's degree is awarded when students have obtained 60 course or seminar credits, and have written a thesis that passes review by a thesis committee (the thesis is worth 30 credits). A total of 90 ECTS credits is therefore needed in order to obtain the Master's degree.

## Careers

Students that have already successfully completed the program occupy high-ranking positions in various well-known entreprises and organizations or in the field of public statistics, biostatistics or finance.

## Master programme

### Semester 1

- Advanced regression methods
- Inferential statistics and test theory
- Multivariate analysis
- Probability theory
- Seminar of statistical software
- Survey sampling
- Elective courses

### Semester 2

- Generalized linear modelling
- Seminar of Applied Statistics
- Time series analysis
- Bayesian statistics
- Elective courses

### Semester 3

Master's thesis or internship with report

## For further information

www.unine.ch/mscstat