High-level training in statistics and the modelling of random processes for applications in science, business or healthcare

For many complex systems in nature and society, stochastics can be used to efficiently describe the randomness present in all these systems, thereby giving the data greater explanatory and predictive power. This specialisation will train you to become a mathematician that can help others make better decisions, conclusions and predictions.

Why study this specialisation at Radboud University?
- You can focus both on theoretical and applied topics.
- Mathematicians here are expanding their knowledge in random graphs and networks, with many applications.
- In a unique and interesting collaboration with Radboudumc, stochastics students can help researchers at the hospital with very challenging statistical questions.
- With the national Mastermath programme, you can follow the best mathematics courses in the Netherlands, regardless of the university that offers them.
- Teaching takes place in a stimulating, collegial setting with small groups. This ensures that at Radboud University you’ll get plenty of one-on-one time with your thesis supervisor.
Programme outline (2 years, 120 EC)
The programme of this specialisation consists of:
• Compulsory courses (15 EC)
• Major electives (15 EC)
• Minor electives (24 EC)
• Free mathematical electives (16 EC)
• Professional preparation (1 EC)
• Philosophy (3 EC)
• Free electives (6 EC)
• Master’s thesis (40 EC)

Courses
Below you can find an overview of the compulsory courses and some examples of electives. Please have a look at the online prospectus (see ‘More information’) for more detailed information.

Compulsory courses
• Regression Analysis or Stochastic Processes (6 EC)
• Biostatistics or Measure Theoretic Probability (6 EC)
• Master Seminar (3 EC)

Examples of specialisation electives
• Asymptotic Statistics (8 EC)
• Time Series (8 EC)
• Applied Stochastics (6 EC)
• Queueing Theory (6 EC)

Mastermath programme
Radboud University takes part in the Dutch Master’s Degree Programme in Mathematics, or Mastermath for short. Every semester the Departments of Mathematics of Dutch universities organise joint courses in mathematics. These courses offer you the highest quality of instruction and allow you to meet and interact with mathematics students and researchers from universities all over the country. And if you wish to pursue a PhD programme after completing your Master’s programme, Mastermath increases the range of options open to you.

Master’s thesis
For your Master’s thesis, you can investigate a research question or hypothesis in a field that one of the research members is specialised in, or you can bring your own research suggestion. Examples of research topics at the Department of Applied Stochastics (ru.nl/science/as) are:
• Probability and mathematical statistics
  › Prof. Eric Cator
• Quantum probability
  › Prof. Hans Maassen
• Probabilistic and extremal combinatorics
  › Dr Ross Kang
Another option would be to do an internship within a company or organisation, where you’ll investigate a problem related to stochastics that is relevant for them. Additionally, there are close contacts with the Max Planck Institute in Germany. For other possibilities, you can always contact a lecturer or the student advisor (see ‘More information’).

Your advantages on the labour market
The skills learned during this Master’s will help you find jobs even in areas where your specialised mathematical knowledge may initially not seem very relevant. This makes your job opportunities very broad and is why many graduates of a Master’s in Mathematics find work very quickly. Possible careers include: researcher (at research centers or within a company), teacher, risk model validator, consultant, policy maker, and analyst.

Admission requirements
You are required to have a Bachelor’s degree in Mathematics or a closely related discipline. You must also have a sufficient proficiency in English. For details, please visit the website or contact the student advisor (see ‘More information’).

Application procedure
The programme starts in September. The application deadline is 1 April for students from non-EU/EEA countries and 1 May for students from within the EU/EEA.
You apply for the Master’s programme in Mathematics via www.studielink.nl. After admittance to the Master’s programme, you can enrol for the specialisation in Applied Stochastics.

More information
Prospectus: www.ru.nl/prospectus/sciencefaculty
Mastermath: www.mastermath.nl
Student advisor Mathematics: Ina de Vries
› mathematics@ru.nl / +31 (0)24 365 23 86

www.ru.nl/masters/appliedstochastics