DEPARTMENT OF MATHEMATICS AND STATISTICS

ASPECTS OF MATHEMATICS



As a discipline mathematics is unique. The theory and methods we study in pure and applied mathematics and statistics are relied upon and used by subjects from architecture to zoology. If you have a mathematical mind there are countless problems to solve, collaborations to enter into, and wide-ranging employment opportunities to take advantage of.

Through our degree courses we aim to motivate, enthuse and support students in developing not only knowledge of mathematical and statistical techniques, but also the skills required to tackle unfamiliar problems and to understand when others may be using these techniques incorrectly. We want our degree courses to provide the ideal preparation for whatever future challenges lie ahead.

The Department of Mathematics and Statistics celebrates its diversity: the diversity of the mathematics which we learn, teach and research; the diversity of how we teach; and the diversity of the individuals – both staff and students – within it. This helps to create the supportive, dynamic and interactive environment from which we all benefit, helping us to maximise our potential and reach our personal and academic goals. It is this department that we would like you to become a part of.

reading.ac.uk/maths

66 ...the most rewarding part is the "Aha" moment, the excitement of discovery and enjoyment of understanding something new – the feeling of being on top of a hill and having a clear view. 99

Maryam Mirzakhani First woman to win the Fields Medal



SMART SUSTAINABLE TECHNOLOGIES



The global production of plastics is approaching 400 million metric tons per year, affecting the health of future generations and causing environmental impact that lasts hundreds of years. Novel smart materials and medicines with tailored properties are essential to meet the evolving requirements in healthcare and sustainability.

Dr Zuowei Wang's interdisciplinary research, using mathematical modelling and computer simulations of biological and synthetic systems, is providing valuable insights for experimental techniques and designs to address this challenge.

Zuowei focuses on how the raw polymer materials behave under various processing conditions and uses his findings to improve existing, or design new, plastic manufacturing techniques.

66 Our research group, Complex Fluids and Theoretical Polymer Physics, has carried out extensive multiscale studies to understand and predict the structural, dynamic and mechanical behaviours of polymers under different flow conditions. Our theories can be applied to guide the development of economical and sustainable processing technologies to reduce the environmental impact of plastic manufacturing. **99**

66 Our theories can be applied to guide the development of economical and sustainable processing technologies to reduce the environmental impact of plastic manufacturing. 99 The development of recyclable polymer materials is another crucial element of Zuowei's research, contributing to alleviating the environmental impact caused by white pollution. By applying a combined computer simulation and mathematical modelling approach, Zuowei's findings impact the design of novel sustainable polymers, as well as new smart materials, such as self-healing, stimulisensitive and shape-memory materials, which have numerous practical applications.

Zuowei's research also extends to healthcare, through identifying key chemical features of peptides to design innovative antimicrobial and antiviral drugs with high efficiency.

66 I work with colleagues in Mathematics and Chemistry to develop and apply machine learning methods, combined with computer simulations at the molecular level, to gain a microscopic understanding of why peptides with anti-microbial features can work efficiently in penetrating the membranes of bacteria in order to kill them. **99**

Zuowei's teaching of mathematical modelling enables students to develop problem-solving and independent research skills by applying mathematical knowledge to solve a broad range of real-world problems across scientific, engineering and economical fields. He has also worked alongside students as part of the Undergraduate Research Opportunities Programme, giving students the opportunity to get involved in real-world research that seeks to address global challenges.

COST-EFFECTIVE CLINICAL TRIALS



Professor Sue Todd

66 ... sufficient evidence to draw valid conclusions ... may become apparent as the trial proceeds, rather than when the trial concludes, and can be acted upon earlier. 99 In order for a new treatment or therapy to be used in medical practice, clinical trials must be run during the research and development process, often taking years to complete and costing millions of pounds. Professor Sue Todd's research combines methodological work on novel statistical design and analysis approaches with practical research to facilitate implementation of statistical methods in the healthcare sector.

Approximately 30,000 new clinical trials worldwide are now registered annually, with around 300,000 clinical studies registered globally since 2000. To improve efficiency of the clinical trial process, such that treatments can be identified and ruled out more quickly and cost-effectively, Sue's research has made important statistical contributions to the field of multi-arm multi-stage adaptive designs.

66 The advantage of such methods is that trials can be made more efficient in terms of cost, time and benefits to patients. For example, sufficient evidence to draw valid conclusions about the efficacy (or futility) of the treatment(s) under study may become apparent as the trial proceeds, rather than when the trial concludes, and can be acted upon earlier. 99 Sue's research has been implemented in clinical trials by pharmaceutical companies such as AstraZeneca, Avexa, Novartis, as well as publicly funded trials. Her work has underpinned improvements in statistical software and has fed into the development of trial reporting and regulatory authority guidelines.

Drawing from her professional experience, Sue shares real-world examples in her lectures, discussing effective ways to communicate statistics and how to understand the value of data. Utilising her connections with statisticians in the pharmaceutical industry, she advises students about career opportunities, such as the role of a medical statistician.

66 Before talking to Sue Todd I was really unsure of which industry I wanted to go into after university. After mentioning I was interested in statistics, but unsure what I wanted to do, Sue told me about a careers event specific to medical statistics. The event was amazing and helped me to decide to look for a job in the pharmaceutical industry. 99

Elizabeth Yearsley Undergraduate Mathematics student

PREDICTING THE UNPREDICTABLE



A stochastic process is a measurable phenomenon that develops randomly in time, and such processes can have widespread application and value. The ability to predict probable outcomes of random variables over time has a huge impact on sectors such as finance, healthcare and engineering. Dr Abhishek Pal Majumder specialises in applied statistics and probability, with research topics including stochastic processes, time series models and econometric models.

Dr Abhishek Pal Majumder

Stochastic processes are essential tools for quantitative business forecasting based on historical data. They can be used in many ways to identify future trends in an uncertain environment, including: predicting future event patterns, such as the evolution of an epidemic; estimating future business performance; providing market traders with insight to make informed investments; and predicting housing prices.

Abhishek's research focusses on regime switching stochastic processes, applying theory to address problems, for instance, in quantitative finance, actuarial science, economics, biology and ecology. Regime switching models demonstrate structural changes in a time series through different latent states. For example, this could mean the datagenerating process is observed in both positive and negative economic growth, allowing us to see how changes in the underlying regime can impact the relevant characteristic of the observed process.

66 My research goal is to analyse how different aspects of latent structures change the long-term behaviour of the overall stochastic process, by looking at causes and their effects of random events or phenomena. In statistics, my research is motivated by questions related to stochastic dynamical systems where the parameters that characterise overall stability of the systems, fluctuate over time driven by an underlying latent process. 99

In his teaching, Abhishek provides students with the tools to solve problems from a variety of applications like molecular motion, population dynamics, weather, and finances.

66 By using different applications in physical and biological sciences, we address guestions like: how fast can an epidemic spread, what will be the stock price of a share in the near future, and how can the forecasting of weather be modelled? 99

66 ... we address questions like: how fast can an epidemic spread, what will be the stock price of a share in the near future, and how can the forecasting of weather be modelled? **99**

COURSES

You can choose to study mathematics as a single honours degree or combine it with other subjects.

You can also include a summer placement, a year placement, and/or a year studying abroad into your degree.¹

BSc Mathematics^{2,3}

MMath Mathematics⁴

BSc Mathematics with Computer Science²

BSc Mathematics and Economics

BSc Mathematics with Finance and Investment Banking^{2, 5}

BSc Mathematics and Statistics with Data Science²

1 Subject to availability, see inside back cover.

- 2 Accredited by the Institute of Mathematics and its Applications to meet the educational requirements of the Chartered Mathematician designation when followed by subsequent training and experience in employment to obtain competencies equivalent to those specified by the QAA for taught master's degrees.
- 3 We offer a four-year BSc Mathematics with International Foundation Year specifically for international students who don't meet the requirements for direct entry onto the BSc Mathematics.
- 4 Accredited by the Institute of Mathematics and its Applications to meet the educational requirements of the Chartered Mathematician designation.
- 5 We offer a four-year BSc Mathematics with Finance and Investment Banking with International Foundation Year specifically for international students who don't meet the requirements for direct entry onto the BSc Mathematics with Finance and Investment Banking.





BSc MATHEMATICS

This well-rounded degree can be personalised to meet your interests and is a stepping stone to a wide range of careers.

In the first year, you will be taught pure and applied mathematics as well as statistics, giving you the opportunity to experience the breadth of mathematics. In later years, if you are fascinated by pure maths, you can tailor your degree through optional modules to contain more analysis and algebra. Alternatively, if you want variety, you can try something a little different such as statistical consultancy, numerical analysis or the application of mathematics in physics. You also have the opportunity to continue to study a combination of topics across pure and applied mathematics.

Regardless of your choices, you will have the opportunity to develop a range of skills that are highly desired by employers, including mathematical computing, communication skills and teamwork.

If you love maths and studying at Reading then, subject to module selection and performance, you can choose to switch from the BSc Mathematics course to the MMath Mathematics course as late as the third year of study.

Year one topics include:

Foundations of mathematics Calculus Linear algebra **Real analysis** Probability and statistics Communicating mathematics

Year two topics

Algebra Mathematical mod and professional sl **Differential equati** Mathematical met **Real analysis** Numerical analysis Linear models and data analysis

include:	Year three
	Cryptogra
elling ills	Mathemat
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ons	Statistical
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	Applied st

Probability and statistical theory

ee topics include:

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machine learning

erential equations

ochastic processes

ical physics

The final year also includes compulsory mathematics or statistics project work.



MMath MATHEMATICS

Gain a master's-level understanding of applied and pure mathematics through a degree that can be tailored to match your interests.

Develop an in-depth understanding of a subject that touches on every aspect of society and the natural world, from the physics of the oceans to the modelling of financial markets. This course is perfect for budding mathematicians that want to learn as much maths as possible and it is particularly appropriate if you are considering a career as a research mathematician.

During the first two years, amongst other skills, you will develop the ability to construct rigorous mathematical arguments, and correctly express

Year one topics include:

Foundations of mathematics Calculus Linear algebra **Real analysis** Probability and statistics

Year three topics

Further topics in alg Cryptography Number theory Dynamical systems Partial differential e Mathematical physi The third year also in compulsory mathe

project work.

Communicating mathematics

Year two topics include: Algebra

Differential equations Mathematical modelling

and professional skills

Real analysis

Numerical analysis

Linear models and data analysis

Probability and statistical theory

statements and proofs of mathematical theorems. You will learn the concepts of sets, functions and other familiar number systems, and you will build upon your current knowledge of calculus and extend it into two and more dimensions. In your study of analysis you will also learn a branch of mathematics not taught below degree level that can provide remarkable results that calculus cannot. The final two years will enable you to tailor the course to suit your interests and undertake an in-depth mathematics project.

include:	Year four topics include:
ebra	Complex analysis
	Functional analysis
	Further mathematical physics
	Asymptotic methods
luations	Applied stochastic processes
s	Several of the topics overlap with
ocludes natics or statistics	those offered in the third year. The final year also includes an advanced mathematics project.

BSc MATHEMATICS WITH COMPUTER SCIENCE

Develop your knowledge of mathematics alongside key computational skills such as programming. The split between the two subjects is roughly two-thirds mathematics and one-third computer science.

The modern world is increasingly rich in data, novel applications of technology and algorithmic processes. Many contemporary problems cannot be solved "by hand" and instead require a highly skilled blend of mathematical thought and computational expertise to solve. This degree will enable you to develop these highly sought after skills.

You will be given a thorough grounding in mathematics as well as developing key computational skills, including programming in Python – one of the most popular programming languages in the world – focusing on how to use the language to write scripts, create software applications and work with large data sets. During your studies you will look at the core topics of mathematics, extending your knowledge of differentiation and integration to greater dimensions. You will discuss the need for proofs in the rigorous study of mathematics, as well as exploring topics such as the famous 'twin prime conjecture'.

This will be balanced with your studies in computer science in which you will learn the fundamentals of programming and artificial intelligence, equipping you with practical problem-solving skills to tackle real-world problems.

Year one topics include:

Foundations of mathematics	
Calculus	
Linear algebra	
Imperative programming	7
Object-oriented programming	
Probability and statistics	

Year two topics include:	
Differential equations	
Real analysis	
Numerical analysis	
Mathematical modelling and professional skills	
Artificial intelligence	
Programming in Python	

Year three topics include:

Dynamical systems
Statistical machine learning
Number theory
Applied stochastic processes
Text mining
Image analysis

The final year also includes compulsory mathematics or statistics project work



BSc MATHEMATICS AND ECONOMICS

This course will enable you to develop your skills as a mathematician whilst gaining a strong grounding in the conceptual underpinnings of economics. You will spend equal amounts of time studying each subject.

In the first year the mathematics you will study will include the foundations of mathematics and calculus, which build on your knowledge of differentiation and integration, and pose questions such as why the derivative of x² equals 2x. You will gain an understanding of both pure and applied mathematics which you can choose to build on through your project and module choices in later years.

In economics you will study microeconomics starting with how markets work and how consumers and firms make decisions, up to game theory and oligopoly models in your final year.

Year one topics include: Foundations of mathematics Calculus Linear algebra Introductory macroeconomics Introductory microeconomics Quantitative methods

Year two topics include: **Differential equations Real analysis** Mathematical modelling and professional skills Intermediate macroeconomics Intermediate microeconomics Economic theory

As part of your macroeconomic study you will discuss the major concepts of growth, inflation, unemployment and interest rates and the relationships between these variables.

In the final year of your degree, you will be able to explore areas of interest in greater depth. Alongside mathematics or statistics project work, you can choose to explore a range of topics such as: development economics, money and banking, econometrics, number theory and asymptotic methods.

Year three topics include:

Advanced microeconomics

Advanced macroeconomics

International economics

Money and banking

Partial differential equations

Dynamical systems

Cryptography

The final year also includes compulsory mathematics or statistics project work.

BSc MATHEMATICS WITHFINANCE AND INVESTMENT BANKING

Prepare yourself for a career in the financial markets or investment banking studying at Henley Business School, the University of Reading's hub of business expertise, whilst developing your knowledge of mathematics. The split between the two subjects is roughly two-thirds mathematics and one-third finance and investment banking.

From your first year you will be able to gain a real insight into the world of finance and investment banking, discussing the role the financial system plays in the economy as well as being immersed in the trading environment using the latest software in Henley Business School's simulated dealing rooms.

You will also study core mathematics and build on your knowledge of differentiation, integration and differential equations. You will learn to write proofs, for example to establish the existence of infinitely

many prime numbers, whilst discussing questions such as: do we discover or invent numbers? Studying probability and statistics will support your understanding of quantities such as risk, and the maths side of the course continues in later years with a mix of applied and pure mathematics.

In your final year, you will be able to explore areas of interest in greater depth. Alongside mathematical or statistical project work, you will explore a range of topics such as: management of risk, financial engineering, dynamical systems, number theory and cryptography.

Year one topics include:

Foundations of mathematics Calculus Linear algebra Probability and statistics Introductory finance / trading simulation

Securities and markets

Financial modelling Portfolio management

Numerical analysis

Real analysis

Year two topics include: **Differential equations** Mathematical modelling and professional skills

Year three topics include:

Applied stochastic processes

Statistical machine learning

Derivatives securities

Financial engineering

Management of risk

The final year also includes compulsory mathematics or statistics project work

BSc MATHEMATICS **AND STATISTICS** WITH DATA SCIENCE

Vast amounts of data are being collected about almost every aspect of the world. Data science and machine learning are now part of our everyday lives; they are applied to process and interpret this data, to perform in-depth analyses with the aim of extracting valuable information, and to build artificial intelligence (AI) models. Applications include high-level strategic decision-making within public or private organisations, various personalised products for private customers, and individualised healthcare. Expertise in data science, statistics and mathematics are thus becoming increasingly important in a wide range of areas including finance and business, climate science, medicine and the civil service.

Mathematics, statistics and data science are inextricably linked. This course includes modules from all three subjects, providing you with the required skill set to be a quantitative scientist with the ability to bridge between disciplines. Alongside developing your expertise in mathematics and statistics theory, you will have the opportunity to experience the application of statistics and data science methods to real-world problems and increasingly complex data. You will learn how to explore the data and identify specific research questions so you can conduct the appropriate analysis, and to use statistical software to interpret and communicate findings. These are really useful exercises if you are considering a statistics or data science career in business and industry, as well as if you wish to pursue further independent study in statistics and data science.

In your first year you will study statistical distributions, and to do this you need to be able to differentiate, integrate and understand limits. In the second and third years you will continue to build on your mathematical skills, with the freedom to focus on either pure or applied mathematics, or to continue studying both. Alongside this, you will further enhance your skills in data science by building and evaluating models using both traditional and contemporary statistical machine learning methods. You will also have the opportunity to experience statistical consultancy, analysing data for an external 'client' from industry.

In your final year, you will be able to explore areas of interest in greater depth. Alongside mathematics or statistics project work, you will explore a range of topics such as: multivariate data analysis, statistical methods for machine learning and generalised linear models.

Year one topics include:

Foundations of mathematics Real analysis Calculus Linear algebra Probability and statistics Communicating mathematics

Year two topics include:

Differential equations Professional skills for mathematicians Probability and statistical theory Linear models and data analysis Mathematical modelling Numerical analysis Real analysis

Year three topics include:

Advanced statistical modelling

Statistical machine learning

Data integration and visualisation

Dynamical systems

Applied stochastic processes

The final year also includes compulsory mathematics or statistics project work.

SPOTLIGHT: MATHEMATICAL BIOLOGY

The concept of mathematical biology focuses on using mathematics to understand biological systems.

By their very nature, biological systems are complex, meaning simple interactions within them can lead to unexpected behaviour. Students are provided with an introduction to a number of application areas, including ecology, the spread of infectious diseases, cellular genetics and pattern formation. Students practise analysing mathematical models in these areas and using the results to inform the system being studied. Taught by Professor Marcus Tindall, you will be introduced to the rapidly developing area of Mathematical Biology which is providing vital evidence, enabling us to plan and adapt to the current changes in our world.

66 I chose to take mathematical biology because I've always enjoyed being able to see the real world applications of maths rather than just the theory. I'd also never considered biology to be a field that relies heavily on math, so I was curious to see how it is used.

The topic was challenging but also very interesting. It opened my eyes to how important maths can be, even in fields where you wouldn't typically think that it would have much use. Marcus was a very engaging lecturer, providing a good blend of maths and biology to make it understandable for people who don't have prior biology knowledge. I would definitely recommend this to other students. **99**

Elliott Sainsbury Undergraduate Mathematics student

FLEXIBLE OPTIONS

Our degrees offer you variety, flexibility and choice. Your final year will offer a variety of optional modules from pure and applied mathematics and statistics, so you can choose those which interest you most. Your final year consists of fewer compulsory modules than the first and second years, giving more choice of optional modules which reflect the research strengths of the department.

The joint degrees also allow you to switch to the single subject BSc Mathematics degree at the end of the first year if you choose to shift your focus to studying more mathematics.

66 One of the main reasons for choosing the University of Reading was the highly diverse range of courses on offer that utilise mathematics in the real world.

Throughout my first year, I really enjoyed the Probability and Statistics module. I learned that my interest really lay in this field, and data analytics was a career path that inspired me. I decided to dedicate more of my time to study further statistics modules. **99**

Sam Middlicott Undergraduate Mathematics student



STUDY ABROAD

Stand out from the crowd and see the world.

In an increasingly international and mobile world, studying abroad can help boost your future employability. It provides an exciting opportunity to acquire numerous transferable and desirable skills, and study specialisms additional to what's offered at Reading. It's also a fantastic life experience.

You have the option to apply to study abroad, subject to meeting the eligibility criteria*, which is available across many of our courses. All courses offered by our partner universities are taught in English.

For more information on our latest partner institutions, costs and how to apply visit: **studyabroad.reading.ac.uk/outgoing**

66 I've had the best time studying at La Trobe University in Australia, making friends with people from all over the world, as well as travelling to lots of places I never would have had the opportunity to go to had I not studied here. I really enjoyed studying algebra, linear codes and automata, particularly when learning about Turing machines.

Although studying in another country is a big change and can be really hard at first, choosing to study abroad was one of the best decisions I've ever made. **99**

Megan Chapman Undergraduate Mathematics student

* Subject to availability, see inside back cover.

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START WITH SUPPORT

At Reading we make a particular effort to smooth your transition to university and to support you throughout your studies.

With the help of current students we have developed a 'Bridging the Gap' pack containing preparatory material and study advice that we send you before your arrival. Then, in Welcome Week we spend time assisting you with your transition to life at the University, making you aware of all the support available and how to access it.

66 The staff in the School are incredible; the support and guidance they provide to each and every student is unmatched, they truly do go above and beyond. I cannot recommend it enough; Reading has given me the freedom to learn and struggle with new maths, but still be pulled back onto the right track when I wander too far. The teaching staff will truly do everything in their power to help develop your understanding and build up confidence in tackling new maths. 99

Kit Straw Undergraduate Mathematics student

66 I love studying maths at the University of Reading because the lecturers are very knowledgeable, passionate and always willing to help with anything. Maths is an amazing subject as there is always a correct logical answer so you instantly know if you are doing something wrong. l like the fact that it is also challenging as I have a great sense of achievement when l eventually understand the problems. I chose to study at the University of Reading as it has a beautiful campus and the department are all friendly and caring. 99

Jaspreet Grewal Undergraduate Mathematics student

PLACEMENTS AND VOLUNTEERING

a placement or year of professional experience during your studies.

If you choose to apply for the opportunity to take part in a Professional Placement Year and/or Summer Placement*, our dedicated placements team can provide support and advice to enable you to find the ideal post. We will keep in regular contact with you whilst you are with your placement employer.

You will have the opportunity to take advantage of the preparation and support offered through the whole process: from help identifying industries suited to your individual career interests; having your CV and application forms reviewed; building your confidence for interviews, tests and assessment centres; and receiving feedback.

The RED Awards (Reading Experience and Development Awards) are formal records of all your placements and volunteering which is included in your University transcript. This allows you to make the most of extra-curricular activities and experiences undertaken outside of your academic course and to share these with prospective employers on graduation.

Gain invaluable work experience and explore your career options by taking

The Students in Schools Scheme, particularly appealing for those with an interest in teaching, allows you to volunteer to work alongside teachers in local schools with the aim of raising the aspirations of school pupils and encouraging them to continue into Higher Education. You can also choose to take a summer placement working in a school to gain additional experience in this area.

www.reading.ac.uk/maths-and-stats/ undergraduate/maths-placements.aspx

"I was lucky enough to secure a job offer from my placement year. A lot of companies tend to hire their placement students, so you could return to university with a job already lined up for when you graduate. This really helps take the pressure off in final year so you can focus on your studies rather than having to apply for jobs at the same time."

Francesca Stranders Undergraduate Mathematics student

CAREERS

Graduates from any of our courses have the necessary skills for a wide range of careers. Various professions require mathematical or statistical expertise, and accountancy, financial, pharmaceutical and engineering professions draw heavily on graduates from our discipline. There are also many career choices for mathematicians and statisticians in the public, private and charity sectors; in industry, commerce and information technology; as well as opportunities such as government statistical services or health authorities.

Overall, 92% of graduates from Mathematics and Statistics at Reading are in work or further study within 15 months of graduation; of those in full-time employment, 91% are in graduatelevel roles¹. Our graduates have progressed to work for a broad range of organisations including Abbott Diabetes Care (pharmaceutical), Puma (retail), Morgan Stanley (banking), Government Operational Research Service (civil service). You will be well placed to pursue further study, including master's and doctoral courses. If teaching is a career path of interest, you can gain experience through a summer placement working in a school.

ENGAGING WITH EMPLOYERS

BSc Mathematics graduate, Connor Vidal-Cocker, secured full-time employment before graduation and went on to work for Moore Stephens within their Corporate Audit department. The careers support he received from the University and the Department ensured he felt prepared and confident throughout his job search.

Connor took the opportunity to engage with prospective employers whenever possible, including speaking with the Moore Stephens team at the University Careers Fair; the same team ran his assessment centre, and he also used the University's professional skills hub to practise for online tests and ran through practice interview questions with the department's placements team.

66 I always try to encourage people who enjoy working with numbers to carry on working with them as they open so many doors. So many graduate jobs are interested in the skills that you develop during your time studying for a maths degree and the staff within the Department of Mathematics and Statistics do their best to help you whenever they can. 99

Connor Vidal-Cocker BSc Mathematics graduate

CAREER INSPIRATION

BSc Mathematics with a Placement Year graduate, Gwen Perry, took a placement with Thames Water as a data analyst.

66 I used a little bit of my knowledge from the statistics side of my studies (such as linear models), but the most important thing I brought from my studies was an analytical and inquisitive mind; most of the work that I've done has been taught on the job. The work I've completed has been really 'mathsy', but definitely business-based.

For example, one of the projects I worked on was looking into Low Pressure Incidents 2014–2018: events where areas of Thames have had difficulty with low pressure, affecting our customers.

To do that project I used Excel and a statistical program called R. I've carried out some simple statistics in R and produced really interactive plots that you can scale and mess around with. I'm a data analyst who does computer programming to carry out the analysis. uploaded the report to a HTML document online which can be viewed by other members of Thames Water in the cloud.

Though I like lots of different areas in maths, statistics is by far my favourite. I hope to be a data analyst in the future, basically doing what I'm doing now at work. 99

Gwen Perry BSc Mathematics with a Placement Year graduate

Based on our analysis of HESA data © HESA 2022, Graduate Outcomes Survey 2019/20; includes first degree Mathematics and Statistics responders



Important Information

This brochure was issued in 2023 and is aimed at prospective undergraduate students wishing to apply for a place at the University of Reading (the University) and start a course in autumn 2024. The University makes every effort to ensure that the information provided in the brochure is accurate and up-to-date at the time of going to press (May 2023). However, it may be necessary for the University to make some changes to the information presented in the brochure following publication – for example, where it is necessary to reflect changes in practice or theory in an academic subject as a result of emerging research; or if an accrediting body requires certain course content to be added or removed. To make an informed and up-to-date decision, we recommend that you check reading.ac.uk/study.

The University undertakes to take all reasonable steps to provide the services (including the courses) described in this brochure. It does not, however, guarantee the provision of such services. Should industrial action or circumstances beyond the control of the University interfere with its ability to provide the services, the University undertakes to use all reasonable steps to minimise any disruption to the services.

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Topics

Topics are provided as a taster of the areas of study that may be available on each course. Information is correct at the time of going to press (May 2023), for a list of compulsory (core) modules please check **reading.ac.uk** for the most up to date information. Teaching staff on specific courses mentioned in this brochure may be subject to change.

Joint courses

Our joint courses may have extra requirements, including English language requirements. Please check the individual course pages on our website for further details.

Year abroad and placement fees

Some courses include an optional or compulsory year abroad or placement year. During this year you will only pay a partial fee which is currently set at 15% of the normal tuition fee. Check the website for the latest information: reading.ac.uk/fees-and-funding

Placements

Programmes with a Professional Placement Year (also known as 'Year in Industry' or 'Placement Year') are fully dependent on students securing their own placement opportunity, normally through a competitive recruitment process. The University provides dedicated career and application support for placement year students. Students who do not secure a placement or who are unable to complete the placement year due to extenuating circumstances, have the option to transfer to a three year variant of their programme with agreement from their School/Department.

Study abroad

The partnerships listed are correct at the time of publication (May 2023). For up to date information on the University's partnerships contact **studyabroad@reading.ac.uk**

Where Study Abroad is not a compulsory part of the degree programme, the University of Reading cannot guarantee that every applicant who applies for the scheme will be successful. Whilst efforts are made to secure sufficient places at partner institutions, the number of places available and the University's partners can vary year-on-year. In all cases, the University cannot guarantee that it will be possible for applicants to choose to study abroad at a particular institution.

Further, certain courses and/or institutions may require you to satisfy specific eligibility criteria. It can be a competitive process. For further information on the University's Study Abroad Scheme please contact studyabroad@ reading.ac.uk



Department of Mathematics and Statistics

reading.ac.uk/maths-and-stats/undergraduate

f /MathsStatsReading

♥ @UniRdg_Maths

Ask us a question

reading.ac.uk/question







THE QUEEN'S Anniversary Prizes ор Furth 2021