Department of Mathematics
Undergraduate Studies

Royal Holloway
University of London

Royal Holloway
University of London

Royal Holloway is widely recognised on the world stage as one of the UK's leading teaching and research universities. One of the larger colleges of the University of London, we are strong across the sciences, social sciences, arts and humanities. Our 8,500 students work with internationally renowned scholars in 20 academic departments.

The University of London degree gained by our talented, high-achieving graduates is valued the world over.

As a cosmopolitan community, with students from 130 countries, we focus on the support and development of the individual. Our friendly campus, just 19 miles west of central London, provides a unique environment for university study. Campus life revolves around the Students' Union, which runs over 100 societies and sports clubs, and we are recognised as London's best sporting college.

The Department of Mathematics is a lively and friendly place with an international reputation for the quality of its teaching and research. Academic staff are active in pioneering research which is making an impressive impact on the world stage.

This strong research culture influences our curriculum, helping students to keep in touch with the latest developments in the field. Our staff's passion and enthusiasm for the subject transmits through their teaching and they are on hand if you need advice or support. Study Mathematics with us and open up a wealth of opportunities.

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This brochure is designed to complement Royal Holloway's Undergraduate Prospectus and information on the department's website at **www.rhul.ac.uk/Mathematics/**

It is also available as a PDF at www.rhul.ac.uk/studyhere/ prospectus/brochures/mathsug.pdf

Why study Mathematics?

Mathematics is intrinsically beautiful and can be studied for its own sake: you can gain pleasure from the subtleties of sets, numbers, patterns and algebraic structures, and develop logical and analytical skills. Mathematics is also the central tool in the physical and natural sciences as well as in other disciplines such as finance, economics, management and IT. Whatever your taste in Mathematics, Royal Holloway's varied curriculum will have something to suit you.

By studying Mathematics you gain a diverse range of transferable skills. You learn how to apply the universal language of mathematics in a multiplicity of situations and see connections between them.

Mathematics also provides an excellent foundation for a variety of fulfilling career paths or opportunities for further study.

Why choose Mathematics at Royal Holloway?

"Mathematics is the door and the key to the sciences... for the things of this world cannot be made known without a knowledge of Mathematics."
Philosopher Roger Bacon (c. 1260)

- Internationally recognised for the quality of our research in Pure Mathematics, Information Security, Statistics and Theoretical Physics.

- Each year our graduates rate the Department of Mathematics highly for 'Overall Student Satisfaction' in the National Student Survey.

- A strong focus on small group teaching led by inspirational staff who are acknowledged experts in their fields.

- Flexible degree programmes enabling you to mix Mathematics with other subjects and explore broader interests.

- Challenging courses covering a varied curriculum, including pure mathematics, discrete mathematics, statistics, cryptography, quantum mechanics, informatics, and financial mathematics.

- Dedicated support network, including a personal Academic Adviser to guide you in your studies.

- A track record of high-achieving graduates, well-prepared for future employment. In addition, many of our graduates go on to do MSc or PhD programmes, both here and at other top universities.

- On-campus support from a careers service that is part of the wider University of London Careers Advisory Service.

- Extensive postgraduate opportunities within our thriving research portfolio, including, as part of our School of Mathematics and Information Security, the internationally renowned Information Security Group.

- Friendly campus environment, with an impressive range of modern facilities and a vibrant social scene.

- Set in a beautiful part of Surrey on the edge of Windsor Great Park, with excellent national and international communication links (40 minutes by train to London Waterloo, and seven miles from Heathrow).

Welcome

Choosing the right course and university is an important step. In this brochure we aim to help you make the correct decision by providing detailed and up-to-date information about the Mathematics courses that we offer at Royal Holloway.

Mathematics is one of the oldest academic disciplines, and today it is thriving as never before. Most areas of modern life are based on mathematical ideas. For example, mobile phones, the internet, genomics, microwave ovens, financial markets, weather forecasts, insurance, drug testing, X-rays, and satellite navigation, would not exist without mathematics. In addition, many situations require logical and analytical thinking – a skill you develop by studying mathematics. For these reasons, we find that our graduates are highly employable.

Mathematics is not only widely applicable, it is also beautiful. Simply doing mathematics can be deeply satisfying; finding the solution of a difficult mathematical problem is uniquely thrilling and requires a high level of creativity. A well-constructed mathematical argument can possess a beauty not unlike that of a poem.

If you enjoy mathematics and are looking forward to a challenge, I would encourage you to apply to Royal Holloway.

James McKee
Head of Mathematics

Admissions and entry requirements

The department admits about 150 new students each year. Applicants to the College come from a diverse range of backgrounds and students are admitted on the basis of attainment at A-level or equivalent qualifications.

Prospective students are encouraged to visit the department, talk to members of staff and students and find out more about studying at Royal Holloway on one of our open days. Parents are welcome to visit the department at the same time. We also invite many applicants for an informal interview when possible.

Typical offers: We make a standard offer to nearly all candidates, unless there are special circumstances. For Mathematics degrees we are looking for students with 340 UCAS tariff points from 3 A-levels, including a grade A in A-level Mathematics. For degree courses combined with other subjects, the conditions may vary slightly: see the departmental website for full details.

Mature students and alternative qualifications: Applications from mature students are very welcome. People of any age can study Mathematics with enjoyment and success. We accept many alternatives to traditional A-levels, so long as the qualifications are sufficiently rigorous and cover the core material needed to begin a degree in Mathematics.

Although two Mathematics A-levels are a help, especially in the first year, we do not assume that our students will have more than one and so the starting point of our first year courses is based on the A-level 'common core'.

We try to assess each applicant individually, taking into account personal circumstances, and do not necessarily take a hard-and-fast line. If you have any queries, please contact the Departmental Admissions Tutor.

Deferred entry: Applications from those who wish to take a year's break between school and university are welcomed.
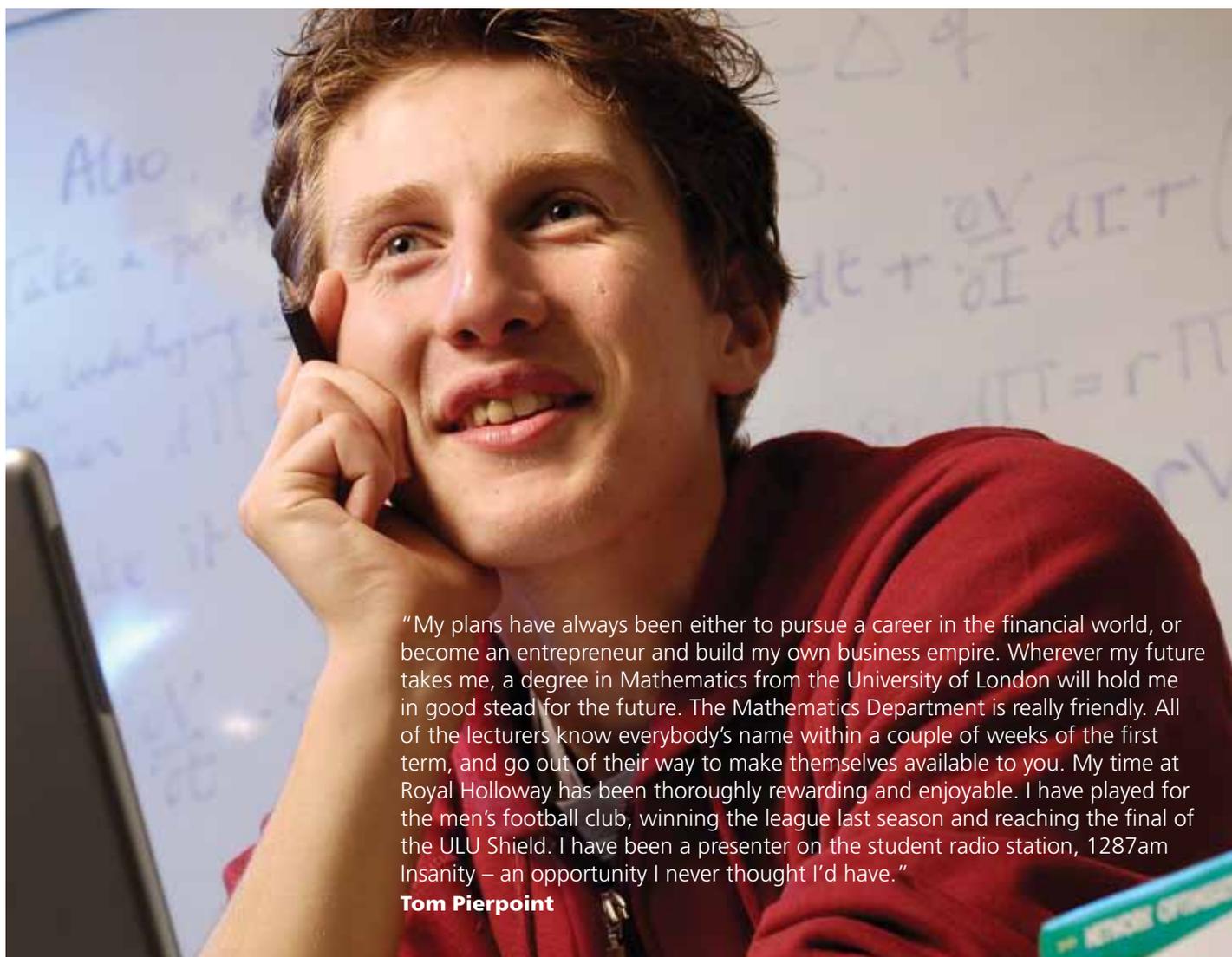
"My plans have always been either to pursue a career in the financial world, or become an entrepreneur and build my own business empire. Wherever my future takes me, a degree in Mathematics from the University of London will hold me in good stead for the future. The Mathematics Department is really friendly. All of the lecturers know everybody's name within a couple of weeks of the first term, and go out of their way to make themselves available to you. My time at Royal Holloway has been thoroughly rewarding and enjoyable. I have played for the men's football club, winning the league last season and reaching the final of the ULU Shield. I have been a presenter on the student radio station, 1287am Insanity – an opportunity I never thought I'd have."
Tom Pierpoint

"Our Mathematics department building McCrea, that is reminiscent of a Lego construction, houses the offices of our friendly lecturers and support stuff. They along with my lovely classmates and friends made studying the difficult but interesting subject of Mathematics and coping with all the highs and lows during the three years at Royal Holloway, a smoother journey. The office hour system is one to take advantage of – if you tried you best and still need help, just go ask for it! "

Sharon Wan, BSc Mathematics with Management

At the centre of our teaching programme are two specialist degrees: the MSci in Mathematics (a four-year degree, called an MMath in some universities), and the BSc in Mathematics (a three-year degree). We also offer a BSc in Mathematics with Statistics, enabling students to concentrate on the theory and applications of statistics. Alternatively, students can choose from a variety of degree programmes that are shared between Mathematics and another subject: the large number of available combinations provides the opportunity for you to pursue your other interests.

All undergraduate degree programmes at Royal Holloway are based on the course unit system. This system provides an effective and flexible approach to study, while ensuring that our degrees have a coherent and developmental structure. This is particularly essential in Mathematics, which is both logical and wide-ranging. In the case of some of our combined degree programmes, it also makes it possible to change the balance of your subjects during your time at Royal Holloway.

The Department of Mathematics website gives detailed lists of the units taken for each different degree programme.

Year 1 (G100/G103)

Calculus

Functions of Several Variables

Number Systems

Matrix Algebra

Numbers and Functions

From Euclid to Mandelbrot

Introduction to Applied Mathematics

Principles of Statistics

Year 2 (G100/G103)

Linear Algebra and a Group Project
(the project may be in any area of Mathematics)

Real Analysis

Complex Variable

Plus five from:

Vector Analysis and Fluids

Ordinary Differential Equations and Fourier Analysis

Statistical Methods

Probability

Groups and Group Actions, or Further Linear Algebra and Modules*

Graphs and Optimisation

Rings and Factorisation

*Given in alternate years.

Year 3 (G100/G103)

Eight from:

Mathematics in the Classroom

Number Theory

Groups and Group Actions, or Further Linear Algebra and Modules*

Quantum Theory I

Dynamics of Real Fluids

Electromagnetism

Non-Linear Dynamical Systems

Quantum Information and Coding, or Quantum Theory II*

Inference

Time Series Analysis

Applied Probability

Mathematics of Financial Markets

Advanced Financial Mathematics

Error-Correcting Codes

Cipher Systems

Principles of Algorithm Design, or Complexity Theory*

Channels

Combinatorics

Computational Number Theory

Public Key Cryptography

Applications of Field Theory

A Supervised Project

The precise selection of courses is liable to vary from year to year, but the above gives some indication of the available range.

*Given in alternate years.

Year 4 (G103)

A Supervised Project

Plus six from:

Computational Number Theory

Applications of Field Theory

Combinatorics

Quantum Information and Coding, or Quantum Theory II*

Advanced Financial Mathematics

Principles of Algorithm Design, or Complexity Theory*

Channels

Public Key Cryptography

Advanced Cipher Systems

Theory of Error-Correcting Codes

It is possible to include one or two from the Year 3 list.

*Given in alternate years.

Structure for Combined Degree Programmes

The choices of students following combined degree programmes will be influenced, to some extent, by the needs of their programme, so that, for example, Economics and Mathematics students will take courses in statistics, mathematical programming and financial mathematics.

The precise structure for these programmes, as well as other valuable and up to date information, is available online at:
www.rhul.ac.uk/Mathematics/informationforcurrentstudents/home.aspx

Degree options

Single Honours	Joint Degrees (50%)
G103 Mathematics MSci (four-year)	GG41 Computer Science & Mathematics
G100 Mathematics BSc (three-year)	LG11 Economics & Mathematics
Specialist Degree	NG31 Finance & Mathematics
G1G3 Mathematics with Statistics	GN12 Mathematics & Management
Mathematics as a Major Subject (75%)	GW13 Mathematics & Music
G1R1 Mathematics with French	GFC3 Mathematics & Physics MSci (four-year)
G1R2 Mathematics with German	GF13 Mathematics & Physics BSc (three-year)
G1R3 Mathematics with Italian	**Mathematics as a Minor Subject (25%)**
G1N2 Mathematics with Management	R1G1 French with Mathematics
G1V5 Mathematics with Philosophy	N2G1 Management with Mathematics
G1R4 Mathematics with Spanish	

Mathematics is a subject that can be studied on its own, or fruitfully combined with a large variety of other academic subjects. It is sometimes difficult to know which combination to choose, and we provide as much flexibility as we can in the early stages of our programmes. We give here a few words about various combinations that are possible at Royal Holloway. If you would like further advice about any particular option, then do please contact our Admissions Tutor.

G100 Mathematics BSc (three-year)
G103 Mathematics MSci (four-year)

Mathematics is unique – at the same time it is both a beautiful and fascinating world of abstract structures and ideas and a down-to-earth, practical subject at the heart of modern science and technology. Much of its attraction comes from studying the relations between these aspects; for example an elegant theorem on complex functions also governs the lift on an aircraft wing, and apparently highly abstract algebraic results have important consequences in data security. Our degree courses aim to convey the power, beauty and excitement of the subject.

The MSci degree is primarily aimed at those who will continue to use Mathematics at a high level after graduation – for example in commerce, industry or research – while the BSc is aimed at those who will use mathematical skills in areas such as administration, management, accountancy and teaching. We realize that on entry, most students will not have decided on a career, so the BSc and the MSci programmes have a common first year, and the choice between them is made at the start of the second year. Therefore it does not matter which degree you register for initially.

G1G3 Mathematics with Statistics

It was said of Florence Nightingale that 'the study of statistics was for her a religious duty'. She realized that to create and run an organization efficiently, data on its operation must be collected and made use of when making decisions. Today this view is universally agreed, although the approach to decision-making is much more sophisticated. In fact, statistics is based on Mathematics, not only because the data used are usually numerical, but because the fundamental concepts of probability theory are closely linked to pure mathematics. Therefore, there is a great need for graduates with a good understanding of Mathematics who can use statistical methods correctly, and this course aims to produce such graduates.

G1N2 Mathematics with Management

All business organizations face problems which are basically quantitative, and managers must make decisions on, for example, the allocation or acquisition of resources. Over the last 50 years, mathematical techniques have been applied with great success to routine problems, leaving more time for managers to tackle more difficult situations. Now, year by year, more powerful and sophisticated techniques are being introduced, so that messy, complicated, ill-posed managerial problems can be handled. Most managers do not have the mathematical background to understand these techniques, while the consultants used too often do not understand the background to the problems. The aim of these degree courses is to fill the gap and provide graduates with some understanding of business, as well as a thorough grasp of the appropriate branches of Mathematics.

G1R1 Mathematics with French
G1R2 Mathematics with German
G1R3 Mathematics with Italian
G1R4 Mathematics with Spanish

Galileo described the universe as a book written in the mathematical language, and the concept of Mathematics as a universal language is a powerful one. Like other languages, it can be studied for its own sake, and also as a vehicle for transmitting ideas. So it is logical to study Mathematics with a foreign language – and this option also opens

up a wide range of careers. These programmes combine most of the specialist Mathematics BSc degree with a study of the spoken and written appropriate language. Note that these are three-year degrees and do not include a year abroad.

G1V5 Mathematics with Philosophy

Philosophy addresses fundamental questions about knowledge, reasoning, our view of the universe, and their impact on people's lives. Many questions such as, 'what is a number?' or, 'is Mathematics discovered or invented?' are basically philosophical, and Greek philosophers introduced the idea of applying Mathematics to describing the universe. The philosophy courses in this programme include Greek and Roman Philosophy, Modern European Philosophy, and the Philosophy of Politics.

GG41 Computer Science & Mathematics

There is an obvious connection between Computer Science and Mathematics – many of the subjects studied by computer scientists are basically mathematical, and there is no branch of Mathematics which has not been radically altered by computer techniques. A degree course in Computer Science & Mathematics will show that Computer Science is a serious intellectual discipline and Mathematics is a relevant and useful subject. This combination opens up a very wide range of career opportunities.

LG11 Economics & Mathematics

Economic analysis relies more and more on mathematical foundations. Optimal individual behaviour is found through the use of calculus, the dynamic properties of economies are studied with difference and differential equations, and important results in welfare economics are established from topological properties. In areas of management consulting and in financial institutions, advanced mathematics and computing are vital in determining the best strategy for the firm and for investing in different assets. The Economics courses consider the analysis of individual behaviour and markets, with options in financial and industrial economics and numerous other fields; econometric analysis shows how to analyse data. The Mathematics courses consider the fundamental properties of the Mathematics used, from calculus to probability and statistics, mathematical programming and game theory.

NG31 Finance & Mathematics

Just as physical quantities such as distance and time are described numerically, and the laws of physics use mathematics, money is quantitative, and the study of finance needs a good knowledge of mathematics. This programme provides the mathematical skills and the economic background needed, and gives insight into ideas such as risk and return, volatility and the sophisticated mechanisms observed in financial markets. Graduates from this programme will be well placed to find jobs in the City, in banking and in financial consultancy.

GN12 Mathematics & Management

Managers in any business are faced with varied and usually complex situations. There are always issues of finance, logistics, inventory control, scheduling and so on – and the skills developed in a Mathematics degree are just the ones needed. Combine these with a study of Management and Accounting, and you will be well equipped when you graduate.

GW13 Mathematics & Music

Both Mathematics and Music are concerned with the creation, understanding and analysis of abstract patterns. In the 6th-century BC Pythagoras and his followers developed a unified theory of arithmetic, geometry and music, based on ideas of proportion and harmony.

This was the μάθημα, or 'what should be learnt', from which the name Mathematics comes. Though the link between Mathematics and Music is not so close now, it is still well worth combining these two subjects.

GFC3 Mathematics & Physics MSci (four-year)
GF13 Mathematics & Physics BSc (three-year)

Mathematics and Physics are two branches of knowledge which have formed a fruitful partnership for centuries, enabling us to explain and predict the behaviour of the universe. They form a natural combination for a degree course. The compulsory core of the course contains the fundamental ideas of Physics, the useful ideas and techniques of Mathematics, and the wide range of options available allows you to follow your own interests.

The MSci degree is aimed at those who wish to develop an advanced understanding of how mathematics can describe and predict the physical universe, and a wide range of transferable skills. It is aimed primarily at those who will continue to use mathematics and physics at a high level after graduation, for example in research or industry.

We realize that on entry most students will not have decided on a career, so the BSc and the MSci programmes have a common first year, and the choice between them is made at the start of the second year. Therefore it does not matter which degree you register for initially.

Teaching and assessment

Studying Mathematics at Royal Holloway is not just about collecting skills and information for a future career (though of course that is important). It is about developing a feel for the subject in many different, often small, ways, and becoming part of a community of people who care about the subject.

We aim to provide an environment in which it is a pleasure for you to study and which will encourage you to follow your strengths and interests in order to achieve the best possible degree. Our compact size helps to promote a friendly and inspiring atmosphere where students are known as individuals. Staff are always ready to give help and advice, and a member of staff is also assigned to you as a Personal Adviser. Your Personal Adviser will help you with any queries or difficulties (academic or otherwise) and guide you in your choice of courses. Typically, your Adviser will be the person who writes your job references in the final year.

Our teaching was rated 'excellent' during our most recent quality assessment, reflecting the care we take in the design and delivery of our courses. Our research interests, such as number theory, cryptography, quantum dynamics and information theory, influence our curriculum, particularly in the final year. These subject areas are extremely useful – they give students the tools to apply their Mathematics in real-life situations.

A variety of teaching methods are used. Our approach is to start in the first year with plenty of academic support, and gradually reduce the level as students gain in confidence. Generally the first year courses are taught by a combination of lectures, problem-solving workshops and tutorials in groups of four or five; in the second year we use lectures and workshops; and in the third and fourth years mostly lectures.

As Mathematics is only learnt by practice, we support every course with weekly worksheets: the students' work is collected, corrected where necessary, and returned with comments. This feedback is a vital part of the teaching and learning process.

Computers are used as an aid in many courses, especially in statistics. Simple use of a powerful mathematical computing package is taught to all students; it can be used in a variety of ways, for instance to check any routine calculation (numerical or algebraic).

Learning to prepare and present the results of your work is something we (and employers) see as important. Therefore we provide several opportunities to do so. In the second year, all students work in small groups to prepare a report and an oral presentation on a mathematical topic of their choice. Most of the statistics courses include a project component, and in the third year, two courses (Mathematics in the Classroom and one Mathematics Project course) are assessed entirely by project work. A supervised project forms a quarter of the work in the final year of the MSci. In a typical week, students will attend 12–15 hours of formal teaching: lectures, tutorials, workshops and computer classes.

Outside of these times, they are expected to work on worksheets, revision, and preparation of projects.

Apart from projects (mentioned above) all courses are examined by written papers in the Summer Term.

There is more to learn in a Mathematics course than the material presented in lectures. You must be able to convince yourself of the validity of a piece of Mathematics and to present results to others in an intelligible fashion – to explain something you have just learnt (or, even better, just discovered) can be a pleasure.

"As a joint honours student (Mathematics and Physics), flexibility within the degree is paramount to ensure all core modules are covered whilst allowing enough choice to tailor the degree to your interests; the Maths department certainly delivers that flexibility and offers excellent individual support to make sure you achieve your degree and career goals – all you have to do is ask."

Sam Wenham, MSci Mathematics and Physics

Facilities

The Department of Mathematics is housed in the McCrea Building, named after the remarkable Professor William McCrea, FRS, former Head of Mathematics and one of the leading cosmologists and relativists of his generation. There is a dedicated computer laboratory for students, and a range of specialist Mathematics software available. Further computer facilities (some with 24-hour access) are conveniently located around the campus. Data Cabling and wireless networks have also been installed in many of the residences to provide you with intranet access and enable you to use your computer laptop for your studies. The Bedford Library holds an extensive stock of Mathematics textbooks, monographs and journals, and is next to the McCrea Building.

For further information on careers and employability, visit
www.rhul.ac.uk/mathematics/YourFutureCareer

Postgraduate Opportunities

Many students see a Mathematics first degree as a useful platform from which to move to further study, and the department offers exciting opportunities for postgraduate study.

Over the years we have earned an international reputation for our research, reflected in our strong performance in recruiting PhD students and post-doctoral researchers and in attracting research grants in a diverse range of areas, including Number Theory, Cryptography, Quantum Dynamics and Information Security. The Department of Mathematics forms one half of the School of Mathematics and Information Security; the other half is the internationally renowned Information Security Group (ISG). Through all of our research, we aim to extend the boundaries of the subject and make a difference in the real world.

Quite a few graduates proceed to MSc degrees, which deal with applications of Mathematics, to equip them for more specialised types of employment. ISG offers MSc courses in Mathematics for Applications, Mathematics of Cryptography and Communications, and Information Security. Students have also gone on to study at other prestigious universities for higher degrees in all branches of Mathematics, and in related fields such as business administration and specialised areas of engineering.

Mathematics in the Classroom (The Undergraduate Ambassadors Scheme)

Endorsed by the DTI and DfES, the Undergraduate Ambassadors Scheme provides an opportunity for third year undergraduates to gain valuable transferable skills and experience of science education.

Each student spends half a day each week, for one term, in a local school. You will work under the supervision of a specific teacher, who will act as a trainer and mentor, and determine your tasks and responsibilities. This course counts towards the final degree result in the same way as other third year Mathematics courses. For more information, visit: **www.uas.ac.uk**

Study Abroad

The department has strong international links, and it is possible to spend one year abroad at another university. The College also has a series of exchange links set up with universities across the world, including in Australia, Hong Kong, Russia and the USA. For more information, please see the College's Study Abroad brochure.

College Open Days

An Open Day at Royal Holloway offers a unique opportunity to come and see the College for yourself. You will have the chance to meet our students and teaching staff, and get a taste of what university life is really like. Parents and friends are very welcome to come with you.

Dates of Open Days can be obtained from the department or from the College website:
www.rhul.ac.uk/studyhere/opendays/home.aspx

For further information please contact: liaison-office@rhul.ac.uk

Your Future Career

Your Future Career

A Department of Mathematics degree from Royal Holloway, University of London can lead onto many different career paths and the department takes the employability of its graduates very seriously.

88% of recent graduates from Royal Holloway, University of London's Department of Mathematics were in full time employment or further study within six months of graduation.

Graduate Destinations

The department's graduates have begun professional careers performing a range of jobs including:

- IT Consultants and Planners
- Computer Analysts and Programmers
- Computer Operations Managers
- Chartered Accountants
- Chartered and Certified Accountants
- Teachers
- Actuaries.

Graduates are working for well known organisations such as:

- KPMG
- Ernst & Young
- Ministry of Defence
- Lloyds Banking Group
- Logica
- McLaren
- TowersWatson.

The department also has graduates who have gone on to do PhDs and Masters degrees.

Careers Support and Internships

The department endeavours to help students to recognise their own strengths, skills and abilities so that they can make strong applications for their chosen job or training course. Advice on careers – including CV writing, completing application forms and preparing for an interview – is provided by the College Careers Service, which is part of the University of London Careers Advisory Service.

Every student in the department has a personal adviser who guides them through their time at Royal Holloway, and who will become a natural choice for writing references for job applications.

The careers team also hold regular sessions, specifically for Mathematics students, on summer internships, vacation employment and the careers available to them on graduation.

University of London degrees enjoy international recognition, and are especially valued by employers. The strong links which the department has with various companies and organisations help us to stay in tune with the very latest needs of employers.

Maths Careers website

The Institute of Mathematics and its Applications, together with the London Mathematical Society and the Royal Statistical Society, have recently launched a new Maths Careers website. This site includes useful advice on finding the right career. For more information, visit: **www.mathscareers.org.uk**

Graduate Profile

Alumnus:	Mark Arnold
Subject:	Mathematics
Graduated:	1973
Place of Work:	Albion Investors, LLC
Position:	Managing Partner

Mark is a Managing Partner of Albion Investors LLC, which he co-founded in 1995, and is based in the Rockefeller Centre in central New York. Albion specialises in buying smaller middle-market companies and growing them, through organic growth and acquisition, to make them more profitable businesses.

Speaking about what he learnt studying Maths at Royal Holloway, Mark said: "The thought processes, that I had to learn to think my way though problems, were enormously valuable to me when I left Royal Holloway. I felt confident that I could handle, and maybe even dominate, the technical aspects of business.

"The professors were good and accessible. In my first year we were introduced to metric spaces and this was a concept that was entirely new to me.

My professor gave me additional help outside of the classroom – this helped me get the top grade in that subject at the end of the year."

Graduate Profile

Alumna: Dr Helen Warren

Subject: BSc Mathematics with Statistics

Graduated: 2007

Place of Work: London School of Hygiene & Tropical Medicine (LSHTM)

Position: Research Fellow in Statistical Genetics & Epidemiology

"In the summer after my second year, I participated in the University of London's City Course, which our Careers Service had advertised. This actually helped to confirm that a job in the financial sector wasn't for me! Then after especially enjoying the statistics courses and seeing interesting applications to medical statistics, I plucked up the courage to say to my lecturer "This is what I want to do!" to which the response was, "Let's chat over coffee" and before I knew it, I was being given the encouragement and support to challenge myself and apply for a PhD, as many such careers, whether in research or pharmaceutical industries, for example, prefer postgraduate experience.

"The best bit about the Maths course was the flexibility. As the course progressed, most of the study units were optional modules, so you could choose your preferred topics, and there was such a variety to choose from."

Academic staff

Dr Koenraad Audenaert is a Reader in Applied Mathematics. His research interests are quantum information theory and matrix analysis.

Dr Yiftach Barnea is a Reader in Pure Mathematics. His research interests include profinite groups and Lie algebras.

Professor Simon Blackburn is a Professor of Pure Mathematics, with interests in algebra, combinatorics, and cryptography.

Dr Jens Bolte is a Reader in Applied Mathematics. His research interests are in mathematical physics, and in particular in quantum chaos and semiclassical quantum mechanics.

Dr Carlos Cid is a Reader in Information Security. His research interests include cryptography, information security and computer algebra.

Dr Cecilia Busuioc is a Teaching Fellow in Pure Mathematics. Her area of research includes Eisenstein cohomology, Milnor K-theory, and special values of L-functions.

Dr Christine Davies is a former Senior Lecturer in Applied Mathematics. Her area of interest includes magnetohydrodynamics and applications to astrophysics.

Dr Rainer Dietmann is a Lecturer in Mathematics. His research interests include Analytic Number Theory and Diophantine equations.

Dr Christine Farmer is a former Senior Lecturer in Applied Mathematics. Her area of interest includes the mathematics of quantum mechanics.

Dr Stefanie Gerke is a Reader in Pure Mathematics. Her research interests include (random) graph theory and algorithms.

Dr Alexey Koloydenko is a Lecturer in Statistics and Probability Theory. His research interests include statistical image analysis, algebraic statistics, and hidden Markov models.

Dr James McKee is a Reader in Pure Mathematics. His research interests include Salem numbers, Pisot numbers, Mahler measure, elliptic curves, and computational number theory.

Dr Iain Moffatt is a Lecturer in Pure Mathematics. His research interests are on the interface of combinatorics and topology, in particular with applications in knot theory.

Dr Francisca Mota-Furtado is a Reader in Applied Mathematics. Her research interests include classical and quantum chaos in atomic systems.

Professor Sean Murphy is a Professor of Mathematics, with interests in cryptography and data security.

Dr Siaw-Lynn Ng is a Lecturer in Information Security, with interests in combinatorics and finite geometry, and their applications in information security.

Professor Brita Nucinkis is a Professor in Pure Mathematics. Her research interests are in homological methods in group theory.

Professor Pat O'Mahony is a Professor of Applied Mathematics, with interests in quantum dynamics, chaos, and atomic theory.

Professor Rüdiger Schack is a Professor in Applied Mathematics. He is interested in open quantum systems and the physics of information, including quantum information theory and quantum cryptography.

Dr Eira Scourfield is an Honorary Research Associate in Pure Mathematics. Her research interest is analytic number theory.

Dr Teo Sharia is a Lecturer in Statistics. Her research interests include asymptotic theory of parametric estimation, iterative methods and stochastic approximation.

Dr Andrew Sheer is a former Senior Lecturer in Applied Mathematics. His area of interest includes applications of operational research to transport and finance.

Dr Martin Widmer is a Lecturer in Pure Mathematics. His research lies within the broad field of Diophantine analysis, in particular the distribution of discrete algebraic objects in algebraic structures and the theory of heights.

Dr Mark Wildon is a Lecturer in Pure Mathematics. His research interests are in representation theory, group theory and combinatorics.

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