



Queen Mary  
University of London

# Mathematical Sciences Your Career, Your Future



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[qmul.ac.uk/maths](http://qmul.ac.uk/maths)



An aerial night view of London, showing the city's lights and buildings. The Shard is the most prominent skyscraper on the right, illuminated with blue and white lights. The Tower Bridge is visible in the middle ground, spanning the River Thames. The city is densely packed with buildings, many of which are lit up, creating a vibrant urban scene.

View towards the City of London at night

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# Introduction

This booklet has been designed to give you an insight into the wide range of job possibilities that are open to you when you graduate with a mathematical sciences degree from Queen Mary. Featured within the booklet are real-life stories of people who were once in your position, to help you think about where you want to go next, what opportunities are available to you and, more importantly, what you need to do to achieve your goals.







The Queens' Building, Mile End, has a proud association with not one, but four queens: Queen Victoria; Queen Mary (wife of King George V); Queen Elizabeth The Queen Mother; and our Patron, Queen Elizabeth II.

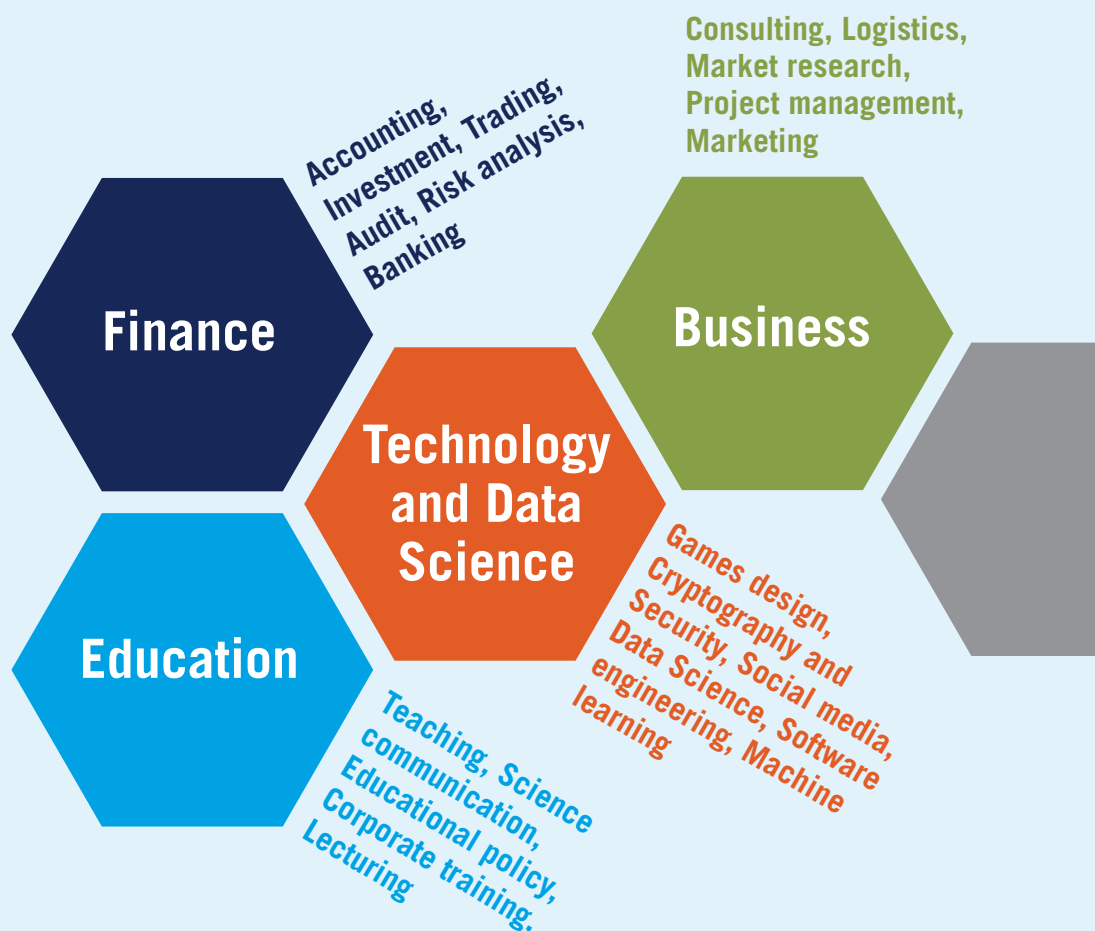
### QMUL highlights

- 91% of QMUL students are in work/study six months after graduating\*
- 120+ annual employer recruitment and networking events at QMUL
- 400+ employers and training organisations visited campus in 2016-17
- £24,000 average undergraduate starting salary\*

*\*Source: Destination of Leavers from HE Survey (DLHE) 2016*

# What careers are open to maths graduates?

When you graduate with a mathematics degree you will have a set of skills that employers will really value. As a result, mathematics graduates are not limited to one specific area of employment. Mathematics graduates can be found in:





**Actuarial  
Science**

*Insurance, Pensions,  
Investment management,  
Actuarial consulting*

Research, PhD study

**Further  
Study**

**Energy and  
Environment**

*Meteorology, Sustainable  
energy, Transport  
planning, Tourism,  
Environmental policy*

**Public  
Sector**

*Government statistics,  
Public policy,  
Fundraising strategy,  
Economic policy,  
Planning*

# Choosing a career

Knowing what to do when you graduate from university can be tough and it is normal to be unsure about which route you want to take. In today's job market, you are likely to change role, company or even career direction several times in your working life. Here are four steps you can follow to help you research and explore your options:

## Step 1: Get to know yourself

Take the time to think about your interests, skills, priorities and values. Ask yourself what is important to you and what you want to get out of your career.

### How?

1. List your achievements and the challenges you have overcome. Consider what skills you used and developed in these activities.
2. Ask others what they see as your strengths and what career they could imagine you pursuing.
3. Try out online tools that are designed to help you work out your career values and interests. You can find plenty of free tools using Google.

## Step 2: Explore Options

Investigate what other people have gone on to do with a maths degree by reading this booklet, attending events, online research and using your networks (including the university's alumni network). Discover what skills and experience you need to get into a career and how competitive the field is.

### How?

1. Explore careers for mathematicians on [www.mathscareers.org.uk](http://www.mathscareers.org.uk)
2. Look at the wide-ranging careers site [www.prospects.ac.uk](http://www.prospects.ac.uk) and check out the videos about different roles on [www.careerplayer.com](http://www.careerplayer.com)
3. If you are already studying at Queen Mary, make sure to come along to careers fairs and events.





## Get support:

Once you are studying at Queen Mary, a Careers Consultant can give one-to-one help with any stage of the decision process; from understanding yourself to action planning. We also offer opportunities to get support through mentoring, insight visits to companies and consultancy project work. Look out for workshops on CV and application writing, mock interviews and assessment centres.

## Step 3: Make Choices

Use everything you have learnt about yourself and your options to make a decision about the career you want to pursue.

### How?

1. Consider how you made decisions in the past – do you use gut instinct, talk through your choices, or like to rank options according to how well they fit your understanding of yourself?
2. When making your choice you may find it helpful to prioritise your options and to take into account how competitive some graduate entry routes are.
3. It is a good idea to identify your top two or three options. These could include one aspirational career choice, alongside others you feel more confident about.

## Step 4: Take Action

Research your target roles, review your own experience and skills and prepare for the application and assessment process.

### How?

1. Search job websites such as **Prospects** and **Wikijobs** for relevant roles. Review job adverts to prepare a comprehensive list of what employers are looking for.
2. Fill any gaps in your CV with work experience, volunteering and getting involved with clubs and societies.
3. Seek out contacts by exploring your own personal network, asking your tutors, attending events and conferences. Create a LinkedIn profile and use it to connect with your existing network and potential employers you meet.
4. The Careers team can help you prepare CVs or applications and practise for interviews, psychometric tests and assessment centres.

# Your career journey

To give yourself the best chance of securing your chosen role after graduation, it is helpful to start thinking about your career development as soon as you arrive at university. Here are some ideas of actions you could take at each stage of your time at university

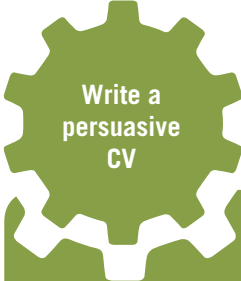
## First Year

The first year is about settling into university life, making friends and taking the first steps in your career journey.



**Complete  
100+ hours  
of work  
experience**

Find something that challenges you and showcases your skills (it doesn't have to be linked to your degree programme). You could even create your own work experience by applying for seed funding from Queen Mary to test out a business idea.



**Write a  
persuasive  
CV**

Make sure your CV is tailored to your target job role, using examples from your experience to evidence your skills. Make your CV stronger by getting involved in clubs and societies to show interests beyond your academic studies.




**Explore  
careers**

Talk to employers at one of our on-campus events, check out hundreds of graduate job profiles on **Prospects** and apply for 'insight weeks' to visit employers' workplaces.




## Second Year

The second year is about making decisions about your career direction and building knowledge and experience that will build your credibility in your chosen field. This is the time to start narrowing down your career choices.




### Focus on your chosen career

Follow through on your career explorations by deciding on what career you want to target. If you need support with this, you could read the 'Choosing a Career' section of this booklet. You might also want to talk to your Academic Adviser about studying a Masters degree.



### Research your chosen field

Build a good understanding of aspects of your chosen career: knowledge of the business sector, who the main employers are and key aspects of your target role, including the skills and experience needed and what the day-to-day working activities are.



### Find relevant summer work experience

Start looking for internships in your target area. For larger companies, roles will be advertised on graduate sites such as 'Rate My Placement' and 'Target Jobs'. Smaller companies may advertise on the Queen Mary careers website and you could also email them speculatively to enquire about work experience.

# Your career journey

## Third Year

Your final year is about job-seeking and successfully getting through the employers' recruitment processes.




### Build your job-seeking skills

Come along to workshops and read our advice sheets on CVs, applications, interviews and networking (available on [www.careers.qmul.ac.uk](http://www.careers.qmul.ac.uk)). Once you are offered a job interview, head to the Careers Service for a mock interview to practise your answers.



### Apply for graduate schemes

Graduate schemes are structured programmes with large employers that combine working and training. You should apply early in the academic year as places fill up quickly, and be aware that opportunities in some industries (e.g. investment banking) close in November. Useful websites are: **Gradcracker**, **Target Jobs** and **Milkround**.



### Search for other graduate jobs

There are only enough graduate scheme positions for an estimated 10% of graduates, and there are advantages to working in other graduate roles within smaller organisations that can offer wider-ranging and more flexible jobs. There is a much shorter lead time for these roles, so applications will start in the spring and summer.





# Case studies

## Education



**Name:** Bilkis Begum  
**Current Role:** Mathematics teacher  
**Degree programme:** BSc Mathematics, graduated 2016

### Queen Mary experience

The university champions the importance of theory with practical experience, which I have grown to recognise and appreciate. In my final year I carried out a project on collaborative learning as part of the Communicating and Teaching Mathematics module, where I developed and implemented my project with a local Further Education institute. This experience not only enabled me to apply my analytical skills while collecting and analysing data for my project, it also gave me insight into mathematics education.

### Looking ahead to graduation

I made use of the Careers and Employability Service while at Queen Mary. I attended graduate fairs and employer-led workshops and presentations, which helped me to find out about the career opportunities available and gave me an insight into what employers look for. I completed a Mathematics PGCE at UCL Institute of Education, whereby I was

exposed to both practical and theory of teaching. I undertook two placements consisting of 12 weeks each throughout the academic year in diverse and challenging schools within inner London. During the rigorous training process, I applied to available teaching posts and secured a Newly Qualified Teacher (NQT) position.

### Working life

I am working as a Mathematics teacher at a secondary school in the London borough of Tower Hamlets. My role involves adopting creative approaches to teaching maths to students of all abilities across Years 7 to 11. I am excited to embark on a new challenge to equip young people with knowledge and skills required to achieve their academic and professional potential. I enjoy maths, so being a teacher is a great way for me to stay in touch with the subject and continuously learn about how to teach it. I'm really interested in the notion of being a lifelong learner; I believe learning never stops! I also enjoy explaining mathematical concepts to pupils and helping them understand something they previously struggled with; it is an amazing feeling which makes teaching worth every second!



### The future

I am interested in deepening my understanding of mathematics education through higher level study by completing a Masters degree in Mathematics Education. Additionally, I would like the responsibility of creating schemes of work and leading professional development sessions for other teachers.

### My advice to you

I would recommend getting experience in working with young people, tutoring and mentoring pupils to see if you enjoy the prospect of being a teacher. I would also recommend students shadowing other teachers in schools to gain in-school experience. Although we all have attended school, your experience of schooling may be very different to now as education and policies are constantly changing. Also, I would highly recommend taking Queen Mary's Communicating and Teaching Mathematics module in your final year as it gives you practical experience of being a teacher.

## Get the facts: Education

### What is the field?

Teaching is a field where there is no such thing as a 'typical' day at work because no two days are the same. The opportunities for continuous professional development mean teaching can help you build a wide range of transferable skills. Once you qualify there are lots of chances to progress your career. Primary school teachers will usually teach a range of subjects while secondary and Further Education teachers tend to specialise in one or two.

### How do I get into the field?

There are two main training routes into teaching – both of which will include spending time in at least two schools and lead to Qualified Teacher Status (QTS).

- School-led training will give you hands-on experience in schools from day one and most courses lead to a Postgraduate Certificate in Education (PGCE).
- University-led training gives you the chance to learn the theory of teaching while doing practical placements and working towards a PGCE.

### Useful links

- Get Into Teaching: [getintoteaching.education.gov.uk](http://getintoteaching.education.gov.uk)
- TeachFirst: [teachfirst.org.uk](http://teachfirst.org.uk)

### Typical starting salary and progression

- Newly Qualified Teacher (NQT) salary: £22,467 or more if you work in London (up to £28,098)
- Progression up to £33,160 (£38,241 in London) as an experienced teacher and £59,264 (£66,638 in London) at middle and senior management level.

# Case studies

## Public Sector



**Name:**  
Elizabeth Oduwole

**Current Role:**  
Supervisor in  
Investment Banking,  
Financial Conduct

Authority (FCA)

**Degree programme:**  
BSc Mathematics with Business  
Management and Finance  
graduated 2010

### **Queen Mary experience**

The most enjoyable aspects of the course for me were the business and finance modules, and I also enjoyed the fact that it gave me a wide spectrum of things to study - in addition to mathematics I did a bit of economics and a bit of accounting in my degree.

The course was exactly what I was looking for. I had not made a decision about what kind of career I wanted before applying to university but my degree enabled me to keep my options open. Although I eventually decided to work in finance, I was also able to try out placements as a teacher, so I could sample two very different fields.

### **Looking ahead to graduation**

To prepare myself for work, I was working part-time in retail in central London, as an ambassador on campus and, as part of my course, I worked as a teacher for a short time in the local area so I had good experience of the world of work. I visited the careers service several times for help with interview preparation, looking at writing my CV and to get advice on where I wanted to go with my career, because at that stage I was still quite unsure. Initially I was unsuccessful in my application to the FCA but I was then able to do a Spring Insight Week with them, after which I applied again because I was very keen on the organisation. The recruitment process for the FCA was quite long, consisting of an application form, numerical and situational judgement tests, a phone interview and two assessment centres.

### **Working life**

I joined the Graduate Development Programme and did four rotations around different parts of the organisation. My role has already changed substantially over the time I've been here – I started within risk management and financial stability, then moved into enforcement, which was challenging but very interesting. My third rotation was in market conduct; looking at instances of insider dealing and suspicious transactions. This included a six month secondment to Paris which was a great

experience and I had a lot of support from the FCA for relocating abroad. My final rotation was in retail banking supervision - most graduates stay working in their final rotation area after the graduate programme ends.

One of the challenges has been adjusting to new areas for each rotation, although I enjoyed the chance to do something fresh and new each time. In my current role, in the banking division, their business model is quite new and complex so it has been a challenge to get up to speed.

### My advice to you

Study a subject you really enjoy and make sure you have something to offer outside of your studies and that you have additional skills you can bring to the table. Don't ever give up on what you really want to do - I applied to the FCA twice even though the first time I got rejected. It can be disheartening when people are saying 'no' but focus on what you want to do. I remember after one of my interviews in Canary Wharf, looking around and thinking, 'actually this is where I want to work', and I focused on that, and then it happened - so don't give up.

## Get the facts: Public Sector

### What is the field?

Public sector organisations are often large and have extensive reach and influence which can provide employees with a variety of potential career paths. The Civil Service is the key central government employer and comprises many different departments and agencies, including the Government Statistical Service, HM Treasury and the Security Service (MI5). Other notable employers in the public sector include the NHS, the Financial Conduct Authority and the National Audit Office.

### How to get into the field?

The Civil Service Fast Stream is a popular route into the public sector, offering fifteen graduate schemes, ranging from a generalist programme to specialised pathways for statistics, finance and technology. The minimum requirement is a 2:2 degree but some specialisms require a 2:1. Some governmental agencies offer their own graduate schemes; for example GCHQ, (the government's communications agency), and HM Revenue & Customs offer schemes that favour STEM students. Alternatively, the local government National Graduate Development Programme is a two-year management programme run by the Local Government Association for graduates with a 2:1 degree or above.

### Useful links

- Civil Service Fast Stream: [faststream.gov.uk](http://faststream.gov.uk)
- Local Government National Graduate Development Programme (NGDP): [local.gov.uk/national-graduate-development-programme](http://local.gov.uk/national-graduate-development-programme)

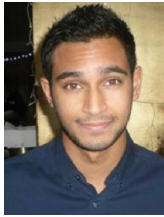
### Typical starting salary and progression

£28,000 for most Civil Service Fast Stream programmes, with progression to £45,000 upon successful completion. Typical starting salary for the Local Government NGDP is £23,698 plus London weighting.



# Case studies

## Finance



**Name:** Sahan  
Wijeratne

**Current Role:** Analyst  
at Deutsche Bank

**Degree Programme:**  
BSc Mathematics,

Statistics with Finance, graduated  
2011

### **Queen Mary experience**

I lived in or around the university campus for the majority of my time at QMUL and therefore was able to immerse myself completely into university life. Initially I found it a challenge to strike the balance between work and play in my first year, so I would advise getting this right as soon as possible. The industry I work in is competitive and some firms have a screening process whereby the first stage is reviewing your degree grade, so gaining a Upper Second (2:1) or First grade in your degree will really work in your favour.

### **Looking ahead to graduation**

I started applying for graduate roles after I graduated and it was challenging to maintain a full-time job to earn money while seeking and applying for more career-focused roles. I would definitely recommend thinking about graduate roles sooner!

### **My approach was to:**

- Look for roles in the evening, and have my CV and covering letter ready so I could send them out first thing in the morning
- Tailor every CV and covering letter to each individual role and make sure I checked my spelling and grammar
- Chase up with emails and calls to active applications. I have found this makes the applicant stand out and shows you are interested in the role
- Take advantage of any networking opportunities to increase my chances of obtaining a role through recommendation

A few months after graduation I secured a role at an investment management firm. I later moved on to a role at Deutsche Bank after a friend from Queen Mary told me about the role that was open in his department.

## Working life

I work in finance for Deutsche Bank. My role is primarily interested in the risk reporting of positions and what impact this has on the risk of an investment and EC (economical capital).

The majority of my work is project-based which means that it has a fixed timeframe, so I find it stays interesting rather than becoming monotonous. I also get satisfaction from seeing the results at the end of the project.

The most challenging aspect of my role is managing and meeting the expectations of the businesses I work with. The challenge can be met by developing good relationships and rapport with people, a skill that also serves me well in other aspects of the job and my career.

## Get the facts: Finance

### What is the field?

The UK is the largest exporter of financial services in the world and London is regularly ranked as the top global financial services centre. The industry is comprised of a wide variety of sectors and roles and there is strong demand for skilled and qualified graduates to enter into a finance profession. Banking is the largest sector within financial services, followed by insurance, securities markets and fund management. Other popular areas to work in include accountancy, financial planning and investments.

### How do I get into the field?

Graduate training schemes are a popular route into the leading employers within the finance industry – these programmes are structured to give you experience in a variety of business areas and often lead to a permanent job within the organisation. Most careers in the finance industry will require you to sit professional exams in order to progress – many people study while working and often your employer will support this. They may provide funding and study leave for some qualifications.

### Useful links

- Prospects: [prospects.ac.uk/jobs-and-work-experience/job-sectors/accountancy-banking-and-finance](https://prospects.ac.uk/jobs-and-work-experience/job-sectors/accountancy-banking-and-finance)
- eFinancial Careers: [efinancialcareers.com](https://efinancialcareers.com)

### Typical starting salary and progression

- Accounting and professional services: £16,000 - £42,000
- Banking and finance: £27,000 - £50,000
- Investment banking: £35,000 - £56,000

# Case studies

## Further study



**Name:** Paul Geffert

**Current role:** PhD in Dynamical Systems and Statistical Physics at QMUL

**Previous study:**

BSc Mathematics and Physics,  
MSc Physics

### **My journey to Queen Mary**

I am originally from Germany and I completed my Bachelors degree in Mathematics and Physics in Berlin. At the end of my Masters I was in collaboration with my current supervisor (Dr Wolfram Just) and he encouraged me to think about doing a PhD in the UK. I had not spent much time abroad before so I considered this a good opportunity to gain some different experience. I knew Wolfram and some of the others in the Dynamical Systems research group at Queen Mary already, so I applied for a studentship and here I am!

### **My PhD study**

What I am doing now relates to both applied mathematics and theoretical physics - there are overlaps between these fields.

My PhD focus is the non-equilibrium dynamic of smooth static systems. To explain it to a non-mathematician I would ask you to imagine you have an object on a table - when you lift up the table the object doesn't immediately start to slide because there is something called drive friction. Then imagine someone is shaking the table in random different directions - there are three possible directions of movement and we are interested in the correlation between these random shakings.

I find it interesting when you don't have a nice equation which describes everything, but you have some randomness in it; some strange forces.

### **Queen Mary experience**

I really appreciate the environment here - it's not as hierarchical as in Germany; you can call the academics by their first names and they are happy to discuss things with you. I know when my research goes in a particular direction that there are these different people to speak to.

You also get to know the other PhD students well. We have seminars where PhD students can present their work to each other, even those working in completely different fields. I like the idea that you have to think “OK, this person is doing algebra and he has no idea about dynamic systems theory so I have to cover the basics and give them an introduction to the main questions in this field”. It is a useful skill to learn, especially as later on you have to ‘sell’ your ideas to gain funding.

### The future

I have the same big decision to make as I did before I started my PhD: should I stay in academia or do something else? I think my experience has given me a lot of skills and opportunities for the future, like IT skills, my knowledge of statistics, physics and probability theory. These skills can lead to many jobs in finance or the actuarial industry. I’ve had some valuable help from the careers service here, looking over my CV and giving me some information about jobs in these sectors.

## Get the facts: Further study

### What is the field?

Further study in the form of a Masters degree or PhD can maximise your earning potential in an increasingly competitive market or prepare you for a career in academia. Masters degrees typically last one year (two if completed part-time) while a PhD will typically last three or four years. Postgraduate study is usually focused on one particular area, giving students in-depth, specialist knowledge of their topic. Masters degrees can either be taught or research-based while PhD students conduct their own original research in their specialist area.

### How do I get into the field?

Masters programmes at most institutions accept applications all year round but offers are often made on a first-come, first-served basis. In most cases, students apply directly to the institution at which they wish to study. The majority of institutions require PhD candidates to have studied a Masters degree and possess a Bachelors degree at 2:1 level or above. Some PhDs will be advertised online when the institution has particular research areas to fill, whereas some students propose their own research area and apply for funding.

### Useful links

- Find a Masters: [findamasters.com](http://findamasters.com)
- Find a PhD: [findaphd.com](http://findaphd.com)
- QMUL Postgraduate study: [qmul.ac.uk/postgraduate](http://qmul.ac.uk/postgraduate)

### Typical starting salary and progression

In 2015, the median salary in the UK for full-time employed Masters graduates was £39,000 (£28,000 for those under the age of 30). PhD studentships (similar to scholarships) are available at most institutions and offer funding of between £14-17,000 per year of study. Typically, salaries for PhD graduates completing postdoctoral study are around £30,000.



# Case studies

## Technology and Data Science



**Name:** Ruby Childs

**Current role:** Python Developer in an Artificial Intelligence start-up company

**Degree programme:**

BSc Mathematics, graduated 2010

### Queen Mary experience

My mathematical abilities are key to my role: I regularly use probability, statistics, statistical modelling and the techniques learnt in the Design of Experiments module I studied. In terms of my experience I have found that being a Course Representative and leading on projects whilst at QMUL have helped my communication, leadership and team-work skills, which were valuable in gaining my first positions after university.

### Career path

After I completed my degree, I found myself working as an investment banker. This wasn't right for me, however, as I felt that I was a small cog in a very large machine and that the work lacked meaning and challenge.

I became interested in entrepreneurship and the London start-up scene so decided I should learn to code to build things myself and did a computing Masters degree at Imperial College. You do not have to have a Masters degree to get into data science, but you should have enthusiasm for coding.

I found my first job in data science through AngelList. This is a website where you can browse start-ups and available positions. I focused my job search on start-ups as they allow a greater level of creativity and personal reward. In my experience large companies have more processes and models in place and I have found working within them more regimented and less enjoyable.

### Working life

I'm currently a data scientist at a start-up company. We take data to make recommendations for the future and make processes more data-focused. This differs from analyst roles, as we use state-of-the-art machine learning techniques to predict the future, whereas an analyst will look solely at past data.

Within one of my first data science roles, I worked at a financial technology start-up called Pariti. I was building the data science platform, so that we could extract meaning about clients from their transactions and use this to assist them with their financial health. I used a programming language - Python - to do this, along with extracting words through natural language tool kits.

The most challenging aspect is that the field is moving quickly and there is always more to learn. The best part about my job is that it is such a key part of innovation and changing the world. For example, you hear of data scientists working on automatic cars, robots, recommendations in online shopping accounts and much more. It wasn't really around or heavily in demand 10 years ago, so is very much a job of our time.

## Get the facts: Technology

### What is the field?

The technology industry is dynamic and growing, with smaller businesses and start-ups competing for a share of the market alongside traditional, large companies. A technology role could involve creating systems or applications, solving consumer problems or offering specialist or consultancy services. Areas with high demand for skilled graduates include software development and cyber security, reflecting the trends of fast-changing consumer needs and data protection. Many technology professionals also work outside of the sector - in retail, finance and public sector organisations.

### How do I get into the field?

Many large employers offer graduate schemes with a structured training programme which may give you experience in a variety of areas. However there can be advantages to starting your career at a smaller company or start-up which often allow greater responsibility at an earlier stage. Developing the technical computing skills that are in high demand, such as experience of key programming languages, as well as analytical and problem solving skills, will make you a strong candidate.

### Useful links

- TARGETjobs: [targetjobs.co.uk/career-sectors/it-and-technology](https://www.targetjobs.co.uk/career-sectors/it-and-technology)
- CWJobs: [cwjobs.co.uk](https://www.cwjobs.co.uk)
- AngelList: [angel.co](https://www.angel.co)

### Typical starting salary and progression

£25,000. Progression to an average salary of £45,000 for developers and £60,000 for technology consultant roles.

# Case studies

## Business



**Name:**  
Zaynab Beekawa

**Current role:**  
Senior Associate  
Consultant,

PricewaterhouseCoopers

**Degree programme:** BSc  
Mathematics, graduated 2012

### Queen Mary experience

I knew that a degree in Mathematics would keep a lot of career opportunities open to me. It's a cliché but there's a beauty and rewarding satisfaction to maths that I wanted to explore further by studying it at university.

I always wanted to go to a London university and Queen Mary had a great vibe and excellent credentials.

Life at Queen Mary was an absolutely brilliant three years that I still reminisce on with my friends now (people I met on my degree). The best parts were the people I met along the way and the way that the maths problems would always come together and make sense in the end.

### Looking ahead to graduation

I started applying to graduate jobs in my second year of university and had been to some careers fairs and an advice session with Queen Mary's careers team. Meeting so many fantastic international

graduates from different areas has helped me be a more rounded person, with better relationship and interpersonal skills – crucial as a consultant and teacher! Doing Mathematics as a degree has certainly developed my analytical, problem-solving, questioning mindset.

Support from mentors in the maths community was especially useful, one of whom encouraged me to apply to Teach First in my third year.

I had always wanted to work for a Big Four firm and regularly went to PwC events when I was at Queen Mary. My application process for PwC was slightly different to some as I applied through the Teach First route (meaning I would teach in schools for two years and then progress to an industry role) but it was still quite challenging. The process included numerical and English tests and also interviews.

### Working life

I am a Senior Associate Consultant in the Finance Consulting practice within PwC, working with clients to problem-solve and improve their finance functions.

Mid-way through qualifying as a secondary school maths Teacher on the Teach First programme, I completed a consulting internship with PwC. I really enjoyed the variety of work and wanted to try something corporate and different to teaching. I decided to take up the



PwC Consulting graduate scheme after completing Teach First and on completion of the graduate scheme I joined Finance Consulting.

The best part of my role is the amazing talent and calibre of the people I work with on a daily basis. I am constantly trying new things, learning, and being challenged. No two days are ever the same – I get to experience different projects and clients and use logic and problem solving every day.

There's always something new to learn so your development has to be quite rapid and constant. You can be thrown in the deep end from the very beginning – but that's also what makes it fun!

### My advice to you

Don't panic too much about your first job after university – these days people often try out a few different roles or industries and it is best to focus on developing your transferable skills. Ultimately those skills will help your career in the long term.

Work hard in your degree but don't burn yourself out – enjoy university to the fullest as you will miss those years when you are working. Travel and try new hobbies whenever you can because it really does open your mind and make you more interesting to potential employers!

## Get the facts: Business

### What is the field?

The business sector in the UK can be broadly split into two main areas: business management and consulting but opportunities are many and varied. Business managers can work in general management or be responsible for specific areas, such as strategy planning, HR or marketing. Consultants offer guidance to organisations to help them solve business problems and enhance their performance. Consultants can work either in large companies or specialised consultancy firms.

### How do I get into the field?

Most employers are looking for candidates with at least a 2:1 degree. Many large firms offer internships for undergraduates, which can lead to permanent employment when you graduate. You can meet them at university careers fairs or find details of their opportunities online. The speculative approach (sending CV and cover letter by email) is best for smaller companies. The 'Big Four' firms (Deloitte, KPMG, PwC and EY) and many large companies offer consulting graduate schemes. Management Consulting in particular is a popular choice among graduates. Employers will commonly use assessment centres and psychometric tests to seek out certain personality traits and skill sets.

### Useful links

- Graduate Scheme search engine: [prospects.ac.uk/careers-advice/getting-a-job/graduate-schemes](https://prospects.ac.uk/careers-advice/getting-a-job/graduate-schemes)
- Target Jobs: [targetjobs.co.uk/career-sectors/management-and-business](https://targetjobs.co.uk/career-sectors/management-and-business)

### Typical starting salary and progression

Major graduate schemes: £25,000 - £30,000 with rapid progression possible up to around £45,000 as a junior manager.

# Case studies

## Actuarial Science



**Name:** Ryan Twomey

**Current role:** Trainee Actuary, QBE Insurance Group

**Degree programme:** BSc Mathematics with

Finance and Accounting, graduated 2016

### Queen Mary experience

My experience at Queen Mary was both fun and hard work. I was studying my favourite subject surrounded by friendly staff and students. I was able to find a large group of like-minded people to spend my time with and never felt as though I couldn't approach lecturers to ask questions. Integrating into the Mathematics Society gave a strong family feel amongst peers and lecturers.

Lecturers went out of their way to help me gain extra skills associated with my future potential career, such as setting up training courses in Excel and SAS software. The balance of having a few financial modules combined with mostly mathematics was an excellent mixture, especially towards third year where finance modules and mathematics began to merge. Using computer applications for heavier statistics modules in computer lab tutorials accelerated my understanding of

the underlying theory, whilst teaching me how to apply it in real data scenarios.

### Looking ahead to graduation

I arranged a mock interview with the careers service before an interview for a graduate scheme. I came away with a list of extra topics to practise and felt confident for the real thing. I also attended a CV workshop arranged by the careers service - this gave me the professional CV structure I used after graduation.

The finance careers fairs and mathematics Impact Days both educated me on other jobs available to maths graduates and gave me contacts which I used to learn about a variety of careers. I sought out shadowing opportunities when I could not secure summer internships to demonstrate that I wanted an actuarial job.

### Working life

I am a trainee actuary working in a project-based pricing environment for a business insurer. I was contacted by a recruiter after putting my CV and details onto job-seeking websites. I had two formal interviews with QBE and was later offered the job. My work involves mathematical models and large databases to assess risk to calculate a fair price which can be offered to our clients. As I pass more actuarial exams I will have a greater technical knowledge to support the role where I can progress into

much deeper mathematical modelling. I am also expected to complete monthly and quarterly reports which assess the integrity and accuracy of our current modelling systems.

### The future

I aspire to become a Fellow of the Institute and Faculty of Actuaries. Learning a scripting language could also become useful in future as the actuarial profession evolves.

The greatest advantages I gave myself were researching heavily into the actuarial career, keeping up to date with insurance news via The Actuary magazine, and showing a true enthusiasm for insurance and the actuarial profession during interviews. My advice would be to ensure you know the exams you would be studying in future, and the daily routine of the type of actuary you are thinking about becoming – there is more than one type of actuary and their days can be very different. Knowing the exact role and challenges that actuaries can face will make a clear statement about your enthusiasm for the job role.

## Get the facts: Actuarial Science

### What is the field?

Actuaries use their skills to help measure the probability and risk of future events which may affect a company or market's performance – making forecasts and helping them to prepare for long-term risks. Most actuaries specialise in one of four areas: life insurance, general insurance, pensions or investment. However, there are many opportunities for actuaries to move into other areas within the financial sector thanks to their excellent analytical, communication and strategic thinking skills.

### How do I get into the field?

To qualify as an actuary you need to apply to become a student member of the Institute and Faculty of Actuaries (IFoA) after which you will need to pass professional exams. Most actuaries complete their professional exams while working at an actuarial firm as a trainee. Most actuarial employers will be looking for graduates with a 2:1 degree or above. The BSc Mathematics with Actuarial Science degree at Queen Mary is accredited by the and enables successful students to obtain up to a large number of exemptions from the Institute's Core Technical Examinations.

### Useful links

- IFoA: [actuaries.org.uk](http://actuaries.org.uk)
- Prospects: [prospects.ac.uk/job-profiles/actuary](http://prospects.ac.uk/job-profiles/actuary)
- BSc Mathematics with Actuarial Science: [qmul.ac.uk/G1N3](http://qmul.ac.uk/G1N3)

### Typical starting salary and progression

£25,000 - £35,000. Progression to £40,000 - £55,000 as a newly qualified actuary with senior level actuaries typically earning more than £60,000.

# Get started

During your time studying maths at Queen Mary, aim to treat your career as an additional module. Put in a bit of work in each year of study to help yourself be in the best possible position by the time you graduate, with a graduate-level job or a place on a course of further study. Using this booklet to decide on some actions you can take now is a great way to progress your career.

There is a wealth of support available to you and many people who can help. Once you become a student, come along to one of our frequent careers events to explore roles, develop your business knowledge and meet employers. Get work experience, starting with part-time work and then an internship, to showcase your skills. Learn CV, application and interview skills in careers workshops, through 1-2-1 appointments and with our fact sheets.

To find out about employer events, workshops and information sheets, visit our website: ([careers.qmul.ac.uk](https://careers.qmul.ac.uk)) and call the Careers Service to book a 1-2-1 appointment for a career discussion or mock interview.

Take encouragement from the fact that employers value maths graduates highly, because they recognise that you have excellent analytical and problem-solving skills as well as being comfortable understanding and interpreting numerical data. Additionally, the number of jobs needing maths skills is soaring as data, technology and machine learning shape the global economy. From financial services to digital marketing, coding to economic policy, a maths degree can be a route to an enjoyable and rewarding career.



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