

Richard Chambers

MD Trading,
Goldman Sachs, New York



Richard graduated from University of Galway with a First Class BSc in Financial Mathematics & Economics.

Why did you choose the Financial Mathematics & Economics degree at University of Galway?

From Mayo, and going to school in St Jarlath's Tuam, it was a very natural progression to go to Galway as my older siblings and friends were all heading in that direction. I chose Fin Maths as I knew I wanted to go into business in some form and always enjoyed Maths. It was the best course in Galway that suited my needs.

Looking back, what do you think of the degree?

I loved it, people were super sharp in the class, and it had a healthy competitive environment. It covered so many topics and gave me a very strong base in core subjects like International economics and Stats.

Tell us about some opportunities you availed of while at University of Galway.

Joined young Fianna Fail ahem.. (the tiger was well and truly roaring). The university has a real mix of backgrounds and I found it such an easy place to build a strong network of friends, some of whom remain my best friends now. I met my wife in Corrib village which was the biggest opportunity availed of. I learned about capital markets in my final year through recruiting roadshows, whereby high street banks visited the college and discussed different job profiles within their institution.

Did the maths degree at University of Galway prepare you in any way for your career path?

Trading is about hard work, discipline and making sure you have calculated your risk/reward profiles sufficiently. Exposure to tough Math courses can only have helped in that regard.

What's your current position? What's it like?

I run Short Macro and Short Term Interest Rates trading globally at Goldman Sachs in New York. It covers a wide range of instruments, interest rate derivatives, fx derivatives, g10 govt bonds and secured funding ie repo. We look at central bank policy, major economic events and macro themes in the market across assets for our clients and the firm.

How hard was it to find a job?

I went through 4-5 of the milk round applications in London. It was competitive but you improved as you went along. I realized you had to try to find some sort of edge in the interview process as you met front office staff, be that a dodgy suit or asking a unique question!

Any advice for Leaving Cert students thinking of registering for a degree with mathematics?

Try to find a summer internship for one year of the degree. I was the only graduate hired by BNP Paribas in cap markets who did not have an internship in 2006. Put the odds in your favour and allocate sufficient time to the intern process. At Goldman Sachs we generally only hire analysts from internship class.

Any advice for today's maths students?

Always push your lecturers to apply real life examples to what you are learning. Enjoy college, they really are the best days of your life.

Patrick Farrell

Associate Professor of Numerical Analysis, University of Oxford

Patrick graduated from University of Galway with a First Class BSc in Mathematics.



Why did you decide to study mathematics at University of Galway?

I loved every subject I studied in school, but when it came to deciding what to pursue further there was no real contest. Mathematics is the language in which the fundamental laws of nature are written. I wished to understand as best I could the universe around me, and was therefore compelled to study mathematics. As for the choice of location, I am from Galway and loved the city, but the strength of the department also played a strong role.

What's your current position?

I'm an associate professor of numerical analysis at the University of Oxford. My research is on the numerical solution of partial differential equations. The laws of physics are generally formulated as partial differential equations (the Navier-Stokes equations of fluid mechanics, the Maxwell equations of electromagnetism, the Einstein field equations of general relativity, etc.), but most of the time they are intractable to solve analytically. I work on algorithms for computing very accurate approximations to the solutions of such equations very quickly.

What's it like?

My job is absolutely wonderful: it's a wonderful privilege to do what you love every day. Doing research is both frustrating and thrilling, as you solve problems you have been stuck on for some time. I also love teaching; sharing the sheer beauty of a deep theorem with a student is a joy. One aspect of the job that Leaving Cert students might not expect is the travel; before the pandemic I would spend several months of the year abroad, visiting collaborators, attending conferences, and giving seminars.

Unusually for a mathematician, I have also undertaken fieldwork for my research. I served for a month on an oceanographic cruise across the mid-Atlantic, and spent six weeks in the Antarctic taking velocity measurements of glaciers with the British Antarctic Survey. It's amazing where maths can take you, even to the ends of the Earth!

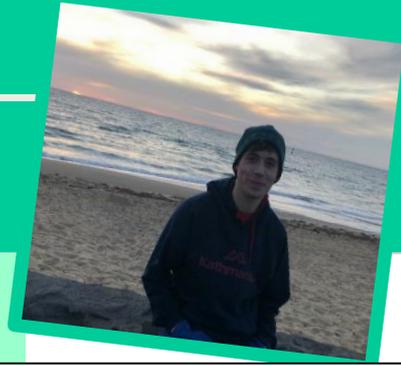
Any advice for Leaving Cert students thinking of registering for a degree with mathematics?

The degree will challenge you, and you will have to work very hard. Thinking mathematically is different and difficult. It is also one of the most rewarding experiences you can pursue; I have never met anyone who regretted it.

Brandon Creagh

Meteorologist, Met Éireann

Brandon graduated from University of Galway in 2019 with a BSc in Mathematical Science.



Why did you choose the Mathematical Science degree at University of Galway?

Maths was always my favourite subject in secondary school, and I wasn't sure what kind of job I wanted to have after college, but I knew that Maths would let me keep my options open after graduation. I chose University of Galway because I had visited Galway a few times in secondary school, and I loved the city and I knew that the college had a great reputation.

Looking back, what do you think of the degree?

When choosing the course during Leaving Cert I didn't think too much about it, but looking back now I feel like I got really lucky having chosen a degree that I thoroughly enjoyed for four years. The fact that I had a lot of freedom in choosing my modules every year was a big plus, and every year had plenty of interesting modules and lecturers. The coursework did get quite difficult at times, but getting through it made the whole experience extremely rewarding.

Tell us about some opportunities you availed of while at University of Galway.

I spent some of the summer of my third year doing an internship with the school of maths, where I was able to spend 6 weeks focusing solely on one project with one of the college lecturers. That gave me a different perspective on mathematical work that is more creative than the common structured mathematics that is given in the classroom and lecture halls. Each year I also had some modules that were offered through Irish, which gave me a unique experience that you probably won't find in many other colleges.

Did the maths degree at University of Galway prepare you for your career path?

Absolutely, the main requirements to becoming a meteorologist is to have a background in either mathematics, physics, or meteorology. The training that this degree gives you in how to approach abstract problems helps me in my work every day. When interviewing for my position I was asked quite a lot of technical applied mathematics questions, so all those years of studying definitely helped!

Any advice for Leaving Cert students thinking of registering for a degree with mathematics?

If you're interested in maths I'd say definitely put it down as an option. I ended up enjoying maths far more to the end of my degree than I ever did in secondary school, and the further you go with maths the more rewarding it seems to get.

Any advice for today's maths students?

I would say to consider working in groups with the other students in your course as much as possible, and engage in classroom discussion. The ability to work in teams will be a skill that stands to you in any aspect of your life in years to come, and I found that I was always able to understand a concept much better after working through it with others, as opposed to if I had worked on it solely on my own.

Amy Forde

Actuarial Associate, Pramerica, Donegal



Amy graduated from University of Galway in 2020 with a First Class BSc in Financial Mathematics & Economics.

Why did you choose the Financial Mathematics & Economics degree?

I chose it in Galway due to its blended nature of mathematics and economics. I knew I wanted to work in business to some degree, but I also really liked maths. Therefore, this course gave the 'best of both worlds'. I also did not know exactly what I wanted to work at when I graduated, hence the broad scope attracted me to the course.

Tell us about some opportunities you availed of while at University of Galway.

I thoroughly enjoyed my time in Galway. The university has many opportunities beyond course work that can help develop students. During my four years I was a committee member for the Finance Society. I was also the Chief Operations Officer of the Student Management Fund, which was a real-life investment fund managed entirely by students. I also spent a summer as an accountancy and finance intern with Glanbia, based in Dungarvan, Co. Waterford. During the second semester of third year, I studied abroad in the University of Groningen in the Netherlands. This was an amazing opportunity. I got to study maths and economics from a new perspective, travel to over 21 cities all over Europe and meet friends for life. I also tutored a first-year maths for business module when I was in final year. This really helped to develop my public speaking and my ability to communicate complex information.

Did the maths degree at University of Galway prepare you in any way for your career path?

I felt this degree really prepared its graduates for a broad range of careers, many of which, I did not even know existed when I sat my leaving certificate. As an actuary, I used the knowledge I learnt throughout my years every day. I have begun studying for actuarial exams which are accredited with the Institute and Faculty of Actuaries. I have been awarded exemptions from my degree which has helped on my path to becoming a fully qualified actuary. Working on projects throughout the course (especially our final year project) really helped to prepare me for the world of work, developing skills such as teamwork, time management and critical thinking.

What is your current position like?

Pramerica's parent company is [Prudential Financial Inc.](#), one of the world's largest financial services institutions. I am employed as an actuarial associate within the Model Risk Management section. I have calls daily with my teams based both in Letterkenny and New Jersey, reviewing actuarial models and trying to mitigate model risk which I find really interesting!

How hard was it to find a job?

I found this degree sets us as graduates apart - having a maths degree is so valuable. The many practical skills such as coding languages (R, Python and MATLAB to name a few) coupled with our mathematical and economic knowledge made it easier to be considered for graduate positions. I had secured my graduate position early in my second semester of final year, which helped me to fully concentrate on my final exams.

Any advice for today's maths students?

Do not get too worried if at first you do not understand a topic or question - the eureka moment usually comes with some practice and time spent in the library! Get involved within the university, there are so many opportunities at your disposal to develop your CV and meet new people. Finally, I would advise maths students to enjoy your time spent at University of Galway, the four years will be over before you know it and you will want to start all over again!!

Jack Hampson

PhD Student/Marie Curie Researcher NUI Galway

Jack graduated from University of Galway in 2016 with a First Class BSc in Applied Mathematics.



Why did you choose the BSc Applied Mathematics degree at University of Galway?

I actually started in BSc Astrophysics. But by second year I found I was fascinated with applied mathematics, and made the decision to change course to the GY301 BSc, which offers a great variety of modules to choose from. There's a good deal of overlap between physics and applied maths, so I was able to make the switch in third year without issue. As for "Why maths?"; well it's the language we use to understand and learn about the world around us; how we describe fluids, mechanics, computer science, engineering, population growth, statistical correlations, the list goes on and on, and I just don't think there's anything more incredible to study than that.

Did the maths degree at University of Galway prepare you in any way for your career path?

It definitely did. It took me a while find the path I'm now on. But what's amazing about having studied maths, through the diverse range of topics offered at University of Galway, was so many different opportunities were open to me once I graduated. I used my BSc results to jump into an MSc in aerospace engineering of all things, and after that worked as project engineer for a superconducting magnet manufacturer. Now I'm in academia again, and it simply wouldn't be possible without that initial BSc specifically in maths.

What's your current position? What's it like?

I've just started a PhD, back in University of Galway. I won a Marie Curie scholarship to work on a Europe-wide team, where I'm modelling drug diffusion for a new treatment combatting multiple sclerosis. Honestly, without the BSc, this project would have been completely out of reach for me. It's very rewarding to know I'm working on some cutting edge stuff, aimed at helping real people now and in the future.

How hard was it to find a job?

I went for an MSc before I got a job. But graduates can take around six months to land that first role these days, and that's about what it took me. Don't be disheartened if it takes a while, but never stop improving how you apply. I implore any student to visit the career guidance and CV workshops at University of Galway, they're excellent. In my experience it's your cover letter that really drives home the impact of the CV. Employers would much rather hire someone they can connect with than an A+ graduate that doesn't show some personality!

Any advice for Leaving Cert students thinking of registering for a degree with mathematics?

In my Leaving Cert, I wasn't particularly amazing at mathematics. I think I got a C+ in higher level. But I knew I loved science and a challenge. I won't downplay that mathematics is a hard discipline and you will need to work hard at it to keep up, but don't be put off just because you're not getting A's in school. If you're not quite sure what you want to do continuing your education, but you know you're curious about how the world works up close, I guarantee there's a niche, a pathway of modules with maths in University of Galway that will be perfect for you.

Any advice for today's maths students?

Get used to asking your lecturers questions; ask them your silliest no-brainers if you're not clear on something, because they were students too once and they want you to do well! Catch them at the end of lectures or email them; be polite. They're incredibly busy, but in University of Galway the team is very patient, friendly and helpful. One last note would be to watch out for yours and your friends' mental health. Being a student is tough at times. Don't be afraid to let somebody know if you're struggling with anything at all, there are wonderful services in University of Galway to help.

Claire Watson

Technology Consulting Analyst, Accenture, Dublin

Claire graduated from University of Galway in 2016 with a First Class BSc in Mathematical Science.



Why did you choose the Mathematical Science degree at University of Galway?

Ever since I was young I loved Maths. I think I have to give some credit to my Dad here, he used to write out very elementary sums for me “for fun” before I ever even started school, which apparently I met with the excitement of a child having just been given bubble wrap (I’m sceptical too – can anything compare to the joy of popping some bubble wrap?).

When looking at all of the degrees I could apply for in my Leaving Cert year, this one stood out for me. It covers such a wide variety of areas in Maths and gives you the opportunity to get a feel for what you are suited to.

As fate would have it, I got bang on the points for this degree - my first choice. What are the chances of getting the exact amount of points that I would need for this degree you might ask? Well, after taking this course you could be able to answer that yourself! See, Maths is everywhere!!

Looking back, what do you think of the degree?

I really enjoyed my time at University of Galway. The degree covered a huge variety of modules across the Computer and Mathematical sciences, which gave me the opportunity to explore areas of Maths that I had never even thought about. There was always constant support from lecturers, tutors and classmates, which I found to be invaluable throughout the four-year degree. My only wish was that the degree was longer, honestly! Looking back now I can think of so many modules I would have loved to have studied further. My advice to anyone would be to try different modules that you aren’t as familiar with, because there are so many exciting areas with really interesting maths behind them!

Tell us about some opportunities you availed of while at University of Galway.

I was involved in a number of clubs and societies through the years. I played with the University of Galway women’s hockey team and ended up becoming the Club Secretary and then the Club Captain. I would really encourage anyone to try out some of the clubs and societies available in the college. It is a great way to meet different people. It was really important for me to have something outside of my studies to keep me fit and healthy, with a strong social element.

What's your current position? What's it like?

I work as a Technology Consulting Analyst in Accenture. My job changes day to day and a lot of my job involves working on client side. I consult the client on technology solutions, build requirements with them to suit their needs and work on the project to delivery.

Any advice for Leaving Cert students thinking of the mathematical science degree?

If you are passionate about Maths please do consider this course. It provides a great opportunity to develop your mathematical ability. There is also a great support system, including a free, walk-in tutoring service so you won't get left behind!

Sarah King

Associate Consultant, Mercer, Barcelona.

Sarah graduated in 2003 with a First class honours in the BSc in Financial Mathematics & Economics. She was the first University of Galway Hamilton Prize winner.



Why did you decide to study Financial Maths at University of Galway?

In school I always enjoyed maths classes and working with numbers.

I found it comforting to find my way to a right answer, when so many other parts of life (and many other subjects) felt like working in the dark by comparison. I chose the BSc (FME) in University of Galway because it offered a mix of maths, economics and actuarial studies, which would give me good career options after college. It was close to home, and it was in Galway, the best college city in Ireland!

What's your current position?

I'm an associate consultant with Mercer, a HR consultancy firm, and we help our clients with all financial, actuarial, financing and accounting aspects of their pension plans.

What's a typical day at work like?

I typically have 5-6 projects on the go at a time. We work in teams, so I might have to review data, perform a valuation, check somebody else's work, or peer review a report. Then I pass the baton to one of my team members and move on to another project. In a typical day I will have one formal meeting, and many more informal meetings with the team to discuss progress, to agree on assumptions, to delegate tasks or just to check in and help one another with questions and doubts.

We also have a lot of contact with clients, by phone, email and in person. Visiting clients takes a lot of time, but it is an integral and exciting part of being a consultant.

How hard was it to find a job?

After graduation I moved directly to Barcelona! After two years of working in an unrelated position, speaking English, I started to look for actuarial work in Barcelona. It was not very difficult to find a job – my college results were good, and having English was seen as an advantage despite my still imperfect Spanish. My new colleagues in Mercer were very accommodating – they improved my Spanish, taught me the local legislation and how we work here, and in return all they asked was that I work hard, learn quickly, and review their English in emails to international clients.

What did prospective employers think of your degree, as far as you could tell?

Clearly they were impressed with my results. Having won the Hamilton prize also played in my favour. The actuarial qualification system works differently in Spain than in Ireland, so I asked for help from University of Galway to explain the subjects I had studied and they were very helpful.

Did the maths degree at University of Galway prepare you in any way for your career path?

Yes, indirectly. Mercer taught me everything that I do now, but my maths degree taught me how to think and understand mathematical and actuarial concepts, so I was a quick learner. The 1st year felt like I was finally seeing the link between abstract mathematical concepts and real-world problems.

Any advice for Leaving Cert students thinking of registering for a degree with mathematics?

If you like maths, then you should follow on. The really interesting stuff happens after the Leaving. In most jobs the most important skills you can have is to be able to think logically, find patterns, solve problems, and you learn all these skills through maths! Plus, it's honestly a lot of fun, and I loved seeing deeper and deeper the further into the degree I went.

Any advice for today's maths students?

Enjoy your time at University of Galway. The world will never be as straightforward and answers will never be as easy to find as in maths class, so enjoy it while it lasts. Don't worry about how any particular subject relates directly to a future job. One day you will see the connection, and it will be unexpected.

Caitriona Kelly

Software Developer,
Tyro Payments, Sydney

Caitriona graduated in 2010 with a BSc in
Mathematics & Computer Science



Why did you decide to study Computer Science and Mathematics at University of Galway?

I began my studies by being primarily interested in maths. When I was trying to pick a course, I remembered that maths had been my best subject in school, so I just went with it. I was not one of these people with career direction at 17. During my degree, I found the computing side more enjoyable, particularly coding, so I focused my career aspirations there.

Had you studied Computer Science in school?

I had no coding experience before I started, but I found that the course was tailored for beginners and I learnt quickly.

Was the degree challenging?

The degree was challenging to a certain extent. Some modules were definitely more difficult than others but I found that by spending extra time on these subjects and taking advantage of all the resources available, doing well was perfectly achievable.

One memory comes to mind: I was stuck on a previous year's exam question as the current exams were approaching. I emailed the lecturer looking for a book reference or just a general hint but he replied with listing his free office times and told me to pop in and he'd go through it with me. While the degree has its difficult moments, the support is there to get you through.

Did you find it hard to get a job after graduating?

Not at all. I started applying for graduate programs in fourth year and found there were a lot of options available to me. My first job was with Cisco as a Software Engineer in Galway, where I worked for three years. I was offered that position a month before the final exams so that definitely took the pressure off! My classmates went into various areas of IT and Finance.

What is your current position?

I am currently working as a Software Engineer for Tyro Payments in Sydney. While I enjoyed my previous role with Cisco, I wanted to travel and fell in love with Australia. I found my degree and previous experience were a fabulous passport. My current company has a great work culture. I spend most of the day coding on financial products for the payments industry and I work with very talented people.

Any advice for today's students?

Within University of Galway, there are many opportunities available to you to learn outside of your core degree and I would recommend students take full advantage of that choice. It will really help you stand out from the crowd in job applications. But more importantly, do what you're interested in as it is a long four years otherwise.

Erika Herrero

Student, Higher Diploma in Software Design and Development – Galway

Erika joined University of Galway in 2014 through the Access programme after being 10 years away from formal education. She graduated in 2017 with a First-Class Honour's BA in Mathematics & Information Technology.



How did you end up studying Mathematics in University of Galway?

I have always had a passion for Mathematics and numbers. I chose mathematics as a subject in the Access programme and I had so much fun that I decided I wanted to continue with it.

Looking back, how easy/hard was it to enter and complete the degree?

I came from Peru to Ireland in my early 20s to learn English. I loved it so much that I decided to stay here in Galway. I had always wanted to study at 3rd level and the Access Course gave me that opportunity. I had to work very hard, but I'm very grateful for the Education System here in Ireland. As a secondary school student in Peru, I hadn't done any course in Calculus. I was coming from a much lower background than most of the Irish students, but in the end, I was able to achieve high results through hard work.

In the last year of my degree, I got diagnosed with Rheumatoid Arthritis which made things harder than before, but I got lots of support from my partner (whom I met in the Honours Maths Stream!), the lecturers and the University. I think doing something that you love makes things easier and gives you the strength to do your best every day.

After your degree, you did an IT postgraduate course here. Were you well equipped?

I am doing the Higher Diploma in Software Design and Development – Industry Stream, which is a course in high demand. Having done Mathematics in my degree helped me to develop analytical thinking and problem-solving skills.

I have spoken with some representatives from IT companies and they are usually happy to hear I have a mathematics background. Mathematicians have a logical mind, can analyse and solve problems at different levels of abstraction, are perseverant and very curious people!

Any advice for mature students or foreigners thinking of registering for the Access programme in Science?

I recommend to just do it, it has changed my life for the better! I do understand that it can be frightening to do a course in another language, especially if you have been away for several years from formal education. Remember that many students in the access programme and in the University feel the same. However, people and lecturers in the Access course and in the School of Mathematics are very approachable and they always try to help.

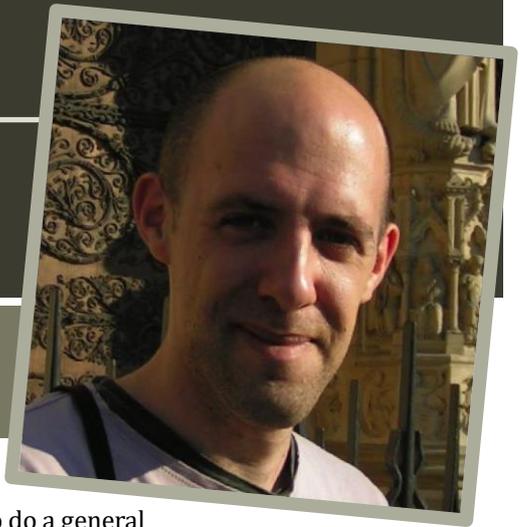
Any advice for today's maths students?

I found that many maths students tend to isolate themselves (it may be the way our brains work, who knows?) I would tell them to be more open. Mathematics can be a very demanding subject, but having friends to talk to and share your maths problems with makes things easier. There are many services and people in the University who will be happy to help you. You are not alone. Finally, you need to have fun, time flies and you are going to miss these years!

Oisín Mac Conamhna

Quantitative Analyst, Lloyds Banking Group UK

Oisín graduated from University of Galway in 2000 with a BSc in Applied Mathematics.



Why did you decide to study maths at University of Galway?

For as long as I can remember, I wanted to be a scientist. I got very interested in astronomy at secondary school and then my plan was to do a general science degree, followed by postgraduate study abroad. In the University of Galway, I was fascinated by General Relativity and its mathematical foundations, so I specialised in applied and pure maths in my third and fourth years. I chose Galway because I wanted to experience as much as I could of the cultural life of the west of Ireland. I couldn't have imagined going anywhere else.

Any memory that sticks out?

Academically, what I enjoyed most was my final year project on black holes. It was a good opportunity to really get to grips with the mathematics, geometry, and physics of general relativity, and I was given a great deal of support and encouragement by my supervisor. Socially, I had a wonderful time in Galway.

What did you do after your degree?

I went to Cambridge to study theoretical physics, for a Masters and then a PhD in the Relativity and Gravitation group. I was lucky enough to get Stephen Hawking as my supervisor. Understanding some of Stephen's early work had been one of the goals of my final year project, and to have the opportunity to study with him was a great privilege. I was interested in studying solutions of Einstein's equations with special symmetry. After my PhD I was awarded a 3-year grant to pursue this research at Imperial College London.

What's your current position and why did you change tack?

I'm an interest rate options quant at Lloyds Banking Group. My job is to formulate the mathematics of the bank's probability models for interest rate option pricing and risk management, then to write computer programmes implementing the mathematics. The programmes calculate the price and risk of option trades, either for traders on Excel spreadsheets, or in the nightly revaluation of the bank's portfolio for the official systems. It makes a change from supergravity. I became a quant in May 2008, just before the financial crisis really exploded. I suppose the main reason I quit academia was that I wanted to start a family sooner rather than later, and this can be difficult as an academic without a permanent job, or even country of residence. As my fellowship in Imperial was coming to an end, I decided to apply for permanent academic positions and quant jobs at the same time, and to take whichever came up first. Lloyds made me an offer and I resigned from Imperial the next day.

Did the applied maths degree at University of Galway prepare you in any way for your current work?

Most of the mathematical techniques I've used in my modelling work at the bank I learned as an undergraduate. Also, the only formal training I ever had in scientific computing was at UNIVERSITY OF GALWAY: even though I was fairly rusty, it was a very useful skill to have when moving from academia to finance. That said, because much of what was written on financial mathematics before the crisis is now obsolete, one is often obliged to make up the modelling approach as one goes along. For this, my experience as a postgraduate and professional research mathematician has also proved extremely useful.

What are your future career goals?

To pay my mortgage, save enough to send my daughter to college, and then to become a maths teacher.

Any advice for Leaving Cert students thinking of registering for a degree with mathematics?

Think no further and do it. For a scientific career, remember that every scientist must understand and use mathematics, no matter what their specialty. For a career in the private sector, I think that graduates with third level mathematics are more generally employable than any others because the world is more and more driven by technology and by the mining and manipulation of data and statistics. In my opinion, the skills and thought patterns of trained mathematicians make them best able to compete at the elite level in the jobs market in these (and many other) fields. This is a trend I can only see becoming more pronounced over time.

Any advice for today's maths students?

Work hard, but make sure to enjoy yourselves along the way. Galway is a wonderful place to be a student, and the time will pass very quickly!

Nichola Leonard

Maths Teacher,
Loreto Secondary School, Kilkenny

Nichola graduated from University of Galway in 2012 with a First Class BA in Mathematics & Education.



Why did you decide to study maths at University of Galway?

In 2008, University of Galway offered for the first time the BA in Mathematics and Education. I had always wanted to be a teacher and this course ticked all the boxes for me by allowing me to become a maths teacher, a subject which I am passionate about.

Looking back, was the degree easy/hard?

In hindsight the degree surely threw up some challenges along the way. One stands out in particular: trying to find the centre of mass of a robot which was sitting down. After hours of bouncing ideas around we finally managed to come to a solution! Like everything in life, if you put in the hard work it gets easier. There were definitely many enjoyable moments throughout the course in both mathematics and education. Getting experience in the classroom which allows you to pass on your knowledge and illustrate your passion to students and hopefully- ly kindling a spark of interest in maths: these are some of the best feelings ever!

Was it hard to find a job after your degree?

Nowadays getting a teaching job is difficult but the BA in Mathematics and Education qualifies you to teach honours Leaving Cert maths which makes a huge difference. I was one of the lucky ones who got a job straight out of college, after sending out a countless number of CVs and doing a few interviews.

What's a typical day at work like for you?

I guess in teaching there is no such thing as a typical day: every day throws up new unexpected challenges, questions and problems, which means there is never a dull moment! Usually I am in school at 8 AM to get everything in order for the day ahead. Each day consists of five to nine teaching classes. Then add in training of soccer, Gaelic or hockey during break or after school, along with plenty of corrections, some supervision, staff meetings, and you will soon realise that a teacher's life is very hectic but very rewarding.

What did prospective employers think of your degree, as far as you could tell?

As far as I could tell, they were impressed as they gave me the job! Being qualified to teach to Honours Leaving Cert level played a major part in getting the job, along with being qualified to teach Applied Maths, which is a rare qualification. They also were interested in the numerous teaching placements completed throughout the course. Through these one gains buckets of wisdom, confidence and improves in their delivery of classes.

Did the Maths & Ed degree at University of Galway prepare you in any way for your current work?

Yes it did as completing a Maths degree takes commitment, hard work and a deep understanding of abstract concepts. These are qualities you must pass on as a teacher to inspire future generations. In the Education modules we learnt different techniques, methods and procedures but the hands-on elements of actual teaching practice was where the most learning was done! For my block teaching practice of 12 weeks in final year, I participated in the partnership programme, where my mentoring teacher sat in weekly on one of my classes and continuously gave me advice and feedback. Through this, my confidence grew and my teaching improved! This is definitely one of the best opportunities that a young starting off teacher can get to learn the ropes.

Any advice for Leaving Cert students thinking of registering for a degree with mathematics?

If as a Leaving Cert student you are contemplating a degree with mathematics, then you need to be up for the challenges that are going to face you. Don't be afraid to think 'outside the box' as many concepts are a little abstract. Be prepared to work hard. This is the advice I give my pupils!

Any advice for today's maths students?

They need to put in the hard graft, attend the lectures, and ask the lecturers and the tutors if something doesn't make sense because maths tends to build from one concept to the next. Also, make extensive use of SUMS (Support for Undergraduate Maths Students): it's like free grinds, but better! Most of all, enjoy the experience and strive on completing challenges handed to you.

Eoin Moran

Director of Met Eireann,
Dublin

Eoin graduated from University of Galway in 1993 with a First Class BSc (Hons) in Mathematics and in 1994 with a Masters in Mathematics.



Why did you decide to study maths at University of Galway?

I loved Maths in school. University of Galway (or UCG as it was called at the time) has a great reputation as a College with excellent academic standards, which made it a natural choice—of course, its location in a fantastic city was also a key factor in my decision to study there!

Any memories that stick out?

The camaraderie in the weeks coming up to exams, swapping notes and drinking coffee with classmates in Smokeys created friendships that exist to this day. In fact it's hard to single out a single memory of my time in Galway: it was all good!

Was it hard to find a job after your degree?

Not really because Maths gave us a lot of career options. Some people headed into IT, others finance, others research and teaching, all areas where numeracy and analytical skills are required. In fact, these skills are in general highly valued by potential employers. I was fortunate to become aware of a vacancy in Met Eireann after completing my MSc and I entered a scientific environment where a good knowledge of mathematical computing was (and still is) required.

What's a typical day at work like for you now?

My work encompasses a broad range of management activities for Met Eireann. My day usually involves meetings with colleagues in Met Eireann and external stakeholders. These meetings deal with for example programme planning, representation of Met Eireann to National and International organisations, and financial planning for Met Eireann.

Did the Maths degree at University of Galway prepare you in any way for your current work?

Today my work has little connection to academic mathematics. However, in my role as Assistant Director I must regularly review and assess scientific programmes which often contain a high mathematical component. My mathematical background assists me greatly in this part of my work. Also the rigour and problem solving skills acquired in the course of studying maths stands me in good stead in identifying solutions in many work-related areas.

What do prospective employers/Met Eireann think of a maths degree, as far as you can tell?

A background in Mathematics, Applied Mathematics or Physics is the basic entry level requirement for all meteorologists.

Any advice for Leaving Cert students thinking of registering for a degree with mathematics?

A strong mathematical skill set gives you the basic literacy to engage successfully with a greater level of confidence in several areas of human endeavour such as Science, Finance, IT and Engineering. It therefore opens the door to many potential careers and is a highly transferable skill set.

Any advice for today's maths students?

Study maths but also broaden your interests to ensure that you understand the context of your study and how your skills can relate to other disciplines. Also make sure that you have well-developed 'generic' computing and modelling skills, as these skills are highly sought after in the workforce.

Alan Brett

Business strategy consultant,
Mars & Co, London

Alan graduated from University of Galway in 2016 with a First Class BSc (Hons) in Mathematical Science.



Why did you choose the Mathematical Science degree at University of Galway?

Because it offered a broad introduction into the various areas of mathematics, with the ability to specialise further down the line. I was also attracted to the relatively small class size of around 20 people - by the end of the 4 years we had formed a tight-knit group!

Tell us about some opportunities you availed of while at University of Galway.

Three things come to mind. First, I had the incredible opportunity to spend a semester studying abroad at The Hong Kong University of Science and Technology - words cannot begin to describe how unforgettable that experience was. Second, I availed of the range of open and welcoming societies available, from juggling on Mondays to poker on Fridays. Third, the School of Mathematics at University of Galway offers internships and workshops each summer, in which you, along with a number of teammates, try to solve a real-world problem - this was especially helpful down the line when participating in job interviews.

Did the maths degree at University of Galway prepare you in any way for your career path? Certainly. It is my firm belief that a degree in Mathematics is the most highly respected and sought after by job recruiters. In addition to helping me secure a job, it has given me a solid analytical grounding that is essential for my job today.

What's your current position? What's it like?

I currently work as a business strategy consultant for a boutique international consulting firm called Mars & Co. I'm based in their London office, but our projects are of global scale, and we work mostly with companies in the Fortune 100. It is certainly an intense, fast-paced job with at times long hours, but the learning outcomes are unparalleled, and the job opportunities beyond consulting can be very lucrative. If you are interested in a career in strategy consulting, I would highly recommend studying mathematics, as the number one ability firms seek out is whether their candidates have analytical rigour.

How hard was it to find a job?

After graduating from University of Galway, I decided to complete an MSc in Management Science at the London School of Economics. The combination of my maths background from University of Galway and my degree at LSE definitely made the job application process easier. I always recommend, however, that anyone in their final year of university begins the application process as early as possible, as often job application windows shut unexpectedly early.

Any advice for today's maths students?

By the time 4th year starts coming to an end, many students will still be unsure as to whether they might want to pursue academia or enter the working world, so my first recommendation would be to try gain some internship experience in the summer months leading up to final year. I'd also advocate trying out new sports/societies at the college - one of the highlights of my degree was spending a week in Morocco with the surf club!

Niall O'Keeffe

PhD Scholar, University of Cambridge

Niall graduated from University of Galway in 2013 with first class honours in the BSc (Hons) in Applied Mathematics.

He was the 2013 Sir Joseph Larmor Prize winner.



How did you end up studying Applied Maths at University of Galway?

In Leaving Cert I always knew I wanted to continue studying Maths in University. As a straight Maths degree was not available at the time, I started the Undenominated Science course, choosing Maths, Applied Maths, Physics and Computer Science in Year 1. After two years I eventually chose Applied Maths for my degree because I was extremely interested in understanding how mathematical models could describe real-world phenomena.

After your degree you did a Masters in Mathematical Modelling and Scientific Computing at Oxford. How hard was it to enter that programme?

The application can be pretty long. I had to provide them with all my exam results, three references, a CV and write a personal statement. After this they invited me for a technical interview through a video chat, where I had to tackle some applied maths problems on the spot. That was a bit nerve-racking, but I must have done ok since they offered me a place!

Were you well equipped for the Masters in Oxford?

The Masters is designed to give you extensive training in how to formulate and solve mathematical models of real-world problems. It was very demanding! But the broad mathematical foundation I had gained during my BSc in Galway placed me in a great position to learn advanced modelling techniques and apply them to many interesting scenarios. For example, my Masters thesis involved mathematics and coding to optimise tidal turbine layouts in the North of Scotland.

What's your current position? How do you support yourself? What do you do all day?

I'm a PhD student working on Hydraulic Fracturing in the Department of Applied Mathematics and Theoretical Physics, Cambridge. I'm funded under an industrial case award from BP.

I normally get into my office around 10am. Most mornings I attend a lecture and analyse a paper or work on a problem. We then have group coffee where you have the opportunity to have an informal chat with any member of the fluids group and lab technicians. Every Friday at lunchtime, a member of the group will give a talk about their research. I might spend the afternoon in the lab working on my experiment which simulates the process of hydraulic fracturing, where water is injected at high pressure into a medium (gel in this case) and cracks propagate. Moreover, I attend at least 3 seminars a week, mostly concerned about fluid mechanics. I aim to leave the department by about 6pm. In the evenings I do more work if there is a pressing deadline or giving a talk that week, but otherwise I relax, play sport and enjoy the brilliant atmosphere around the Cambridge Colleges.

Any advice for Leaving Cert students thinking of registering for a degree with mathematics?

If you enjoy maths you should definitely give either the Undenominated Science Degree or the Denominated Mathematical Science degree a go. Maths at university is a bit different from school but definitely more interesting. Both degrees allow you to specialise in different areas, such as pure and applied, and figure out which suits you best, which is extremely important.

Mathematics degrees also give you skills that are very sought after by employers, making maths graduates some of the most employable around.

Any advice for today's applied maths students?

Try to get really involved in project work; it will give you an idea of how research works. Keep an open mind. In Leaving Cert I always thought I would stay in Pure Maths and go straight into a job after my BSc. Before my MSc I thought a PhD wasn't for me, but after getting to grips with what was involved, I found the opposite to be true.

Kate Sugrue

Senior Data Analyst, Vhi Healthcare



Kate graduated with a BA in Mathematical Studies & English in 2009, a Higher Diploma in Mathematics in 2010, and an MA in Mathematics in 2011, all with first class honours.

Why did you decide to study maths at University of Galway?

I really enjoyed maths in school, I was good at it. I didn't really know what I wanted to do after the Leaving Cert. For a while I considered engineering but my heart wasn't in it. Then I was advised by career counsellors that a maths degree would help me get a job after college, and it turned out to be true!

Looking back, how easy/hard was the degree?

It was tough at times but I was able to keep up so long as I went to lectures and did the assignments. The small classes in University of Galway helped. I never felt self-conscious about asking questions, which was a nice change from secondary school! All the lecturers were very approachable, even outside of class.

How long did it take you to find a job after graduating?

Not long at all, within a month. I got several offers and decided to accept a graduate position with *Accenture*. I stayed there for 3 years before moving on to *Vhi*.

What do prospective employers think of your degree, as far as you can tell?

I get contacted a lot by recruiters; they find the mixture of English & Maths curious, I'm told!

Did the maths degree prepare you in any way for your successive positions?

Yes, very much. I use maths every day. Apart from the actual calculations, it makes me approach tasks in an analytical and problem-solving way.

What's a typical day at work for you now?

A typical day always involves coding and communicating ideas with colleagues. My main job is to detect outliers in our data using statistical models. I also spend a lot of time supporting Business users with data analytics solutions. Although the work is very challenging at times, I love my job! I find I have a great work-life balance.

Any advice for Leaving Cert students thinking of registering for a degree with maths?

Do it! If you like maths in school and have the points for maths in college then you're well able for it. If you were to contact any recruiter, they would tell you that Ireland has a huge skills shortage when it comes to maths and computing. Maths will get you a job.

Any advice for today's maths students?

- Try to do a final year project that can be adapted to a work environment.
- If you don't already know how, then learn to code.
- Apply for every job going just so you can do as many interviews possible. If you're relaxed and comfortable in interview scenarios then when the role you really want comes up, you will be ready. Also, research the company very well before you go to an interview.
- Try to do some online certifications in MS Office at some stage, it looks good on a CV.

Alan Walsh

Performance Analyst, Irish Rugby Football Union

Alan graduated with First Class Honours in the Mathematics and Education BA in 2014.



Why did you choose the BA in Mathematics and Education BA

Although I had always grown up aspiring to pursue a career in architecture or engineering it was a late calling to education which drew me to the Bachelor of Arts (B.A.) in Mathematics and Education. Mathematics was always one of my strongest subjects in school and I enjoy working with numbers. It was the perfect fit!

Looking back, how easy/hard was the degree?

I can honestly say that I loved every minute of my time at University of Galway. All my lecturers were always so supportive and obliging, and the balance between studying mathematics and education was enjoyable. I made many close friends during my degree, because a large amount of the coursework was as collaborative as it was challenging. I have no doubt that the experience helped shaped my future career.

Tell us about some opportunities you availed of while at University of Galway.

There was a practical element to my degree which was spread out over three of the four years. It varied year to year but it was mostly an in-school student teacher placement which ranged from a classroom assistant, then a special needs assistant, then right the way up to a student mathematics teacher. In addition, I also aided the running of regional Applied Mathematics and Project Mathematics courses throughout the duration of my degree, as well as being a member of many clubs and societies including snooker/pool and rugby.

Did the maths degree prepare you in any way for your career path?

Without question. As a Performance Analyst I work with numbers every day. Even though the study of academic mathematics goes far beyond the needs of the statistical analysis in rugby, studying and working with mathematical problems everyday developed a confidence with numbers/large data sets and problem-solving skills. Also studying education enhanced my interpersonal skills, which is just as important a skill in my career as I work with a vast number of people.

What's your current position? What's it like?

I am the Performance Analyst Sevens and Women's Rugby at Irish Rugby Football Union. I am responsible for overseeing and delivering feedback on relevant rugby-related performance for the Irish Men's and Women's 7s teams and also the National Women's team. It is an exciting role which takes me all around the world on the Sevens World Series and 6 Nations tournaments. We film all matches and training sessions and post each performance code of each team and players' on field contributions to provide the relevant feedback to coaches and players. It is a role which varies day to day, week to week and is both demanding and exciting!

How hard was it to find a job?

After graduating I was immediately offered an Internship with Connacht Rugby to develop my skills as a rugby analyst. However, as jobs in professional rugby in Ireland are relatively limited, I chose to further my education and study for an MSc Performance Analysis before securing my current role.

Any advice for Leaving Cert students thinking of registering for a degree with maths?

The study of mathematics is hugely engaging and rewarding. Employers in science, engineering, business and sports all look favourably on Mathematics degrees both at home and internationally. If you enjoy maths and a challenge, go for it!

Aisling Connolly

Research Engineer in Cryptography, Ingenico Paris

Aisling graduated with a BA in Mathematics and Economics in 2012.



Why did you choose the BA at University of Galway?

Although I am from Galway, I was living in Dublin at the time I decided to pursue my degree. Galway is much more affordable to live as student and it seemed like the best option. I always had an interest in Maths, but did not have strong confidence in my abilities, so I thought it would be a good idea to enter the BA program to have more options.

Looking back, what do you think of the degree?

I sometimes wonder, knowing what I know now, if I would choose to do a BA or if I would take a more purely math focused program. I think the answer doesn't matter. A bachelor's degree is as much about furthering your education generally, as it is about deepening your understanding of a particular subject. Taking the BA gave me a broad understanding of various subjects and helped me to understand what I really like to think about and study. Studying Maths through Arts gave me all the exposure I needed to pursue a mathematically oriented career. I feel this is largely due to the ethos of the members of the maths department at University of Galway. The lecturers were so open to talk and discuss problems (both mathematical and personal) at length, and it's thanks to their support, advice, criticism, and encouragement that I followed the path I did. I'll be forever grateful.

Did the maths degree prepare you in any way for your career path?

Absolutely. I was always the kind of student who preferred to *understand*, rather than to just learn things off by heart. When it came to exams, I was often disappointed by my results. I felt I really understood the topics, so how could it be the case that my results were not as good as I'd like? After discussing with my lecturers, I learned that although my understanding was clear, I lacked precision and detail in my answers. This was the greatest lesson I learned from my maths degree; if you can understand and be clear, critical, and precise then you will go far in any career.

What's your current position? What's it like?

I'm currently a Research Engineer in the Advanced Research team at Ingenico. I work on the forward looking Cryptography and Privacy related research questions that we'll face in the coming years. My job is super interesting; on a day-to-day basis, it feels like I just solve lots of nice puzzles. Looking at the bigger picture, Ingenico is the global leader in payment and secure electronic transactions, so my work might affect billions of people in 170 countries, which can be pretty daunting at times!

How hard was it to find this position?

Actually, pretty difficult. Finishing a maths degree, I found it confusing to know what to do next. I wanted to go deeper into maths but I also wanted to do something to benefit society. I took the Cryptography course during my maths degree and found it to have the right amount of fun puzzles, hard math, and societal benefits. It was only through talking to many experienced people (and taking a few wrong turns) that I found the right path for me.

Any advice for Leaving Cert students thinking of registering for a degree with maths?

If you've even got to the point where you're considering it, just do it. Don't be afraid of it. Math is a whole world, and a whole language in itself; there will be some corner of it that's perfect for you. Just have some patience and go find your perfect corner.

Any advice for today's maths students?

Talk to people! Talk to me (@AisConnolly)! Talk to everyone at the school of maths. Reach out to people online. The world is a lot bigger than you realise. There's way more fun stuff than you can imagine, but also the problems get harder and the solutions more difficult to find. It's only through talking to people that you can really engage and learn your subject, and find the right path for you.