



Institute
and Faculty
of Actuaries

MORE THAN MATHS

An Introduction to the
Actuarial Profession

www.actuaries.org.uk/become-actuary

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WHO WE ARE

Taking the first steps towards your dream career can be a little daunting. That's why we've put together this guide to help you understand the actuarial profession and why this could be the right choice for you.

If you want to solve real-world problems and use your love of maths to really make an impact, the actuarial profession could be exactly what you're looking for.

Here at the Institute and Faculty of Actuaries (IFoA) we're dedicated to educating, developing and regulating actuaries based both in the UK and internationally.

As the sole chartered body for actuaries and actuarial analysts in the UK, we not only regulate the profession but are also a trusted source of information about the industry.

We provide our 32,500+ members worldwide with professional recognition and support them with their education and career development through our exams and Continuing Professional Development (CPD) programme. As a member of the IFoA you'll access a range of events that will help you keep up-to-date with the latest developments within the profession and join a global community of like-minded individuals that are at the heart of every business.

WHAT IS AN ACTUARY?

Actuaries are problem solvers and strategic thinkers who use their skills to help measure the probability and risk of future events.

Business and industry increasingly depend on the skills of actuaries and analysts to help them model and plan for the future. As the world changes at an increasingly rapid pace, risk management expertise can help businesses navigate this evolving landscape.

Every area of business is subject to risk, which is why you'll find actuaries working within the public and private sector - in finance, government departments, health care and much more.



A career as an actuary or actuarial analyst gives you the chance to apply your skills in maths and statistics to real-world challenges. These include:

- ▶ New technologies
- ▶ Climate change
- ▶ Population growth
- ▶ The impact of artificial intelligence (AI) and big data
- ▶ Risks associated with cryptocurrencies
- ▶ Uncertainty related to national economies

Valued by employers

Employers understand just how valuable actuaries and analysts are to their business, which is why you'll find actuaries working across a number of areas including:

- ▶ General insurance
- ▶ Health and care
- ▶ Investments
- ▶ Life insurance
- ▶ Pensions
- ▶ Risk management
- ▶ Data science

You might work for a bank, insurance company, consultancy firm or government but one thing is guaranteed - each day will bring a variety of challenges that you'll have the satisfaction of solving.

“No day is the same, fresh and exciting challenges always come up and that is what I find most interesting.”

Prudence Maseko, Fellow of the IFoA

WHY YOU SHOULD BECOME AN ACTUARY

The actuarial profession is both challenging and hugely rewarding. You'll join a global network of respected professionals who use their love of numbers to solve problems and really make a difference.

Whichever area you work in, you will find a variety of roles available, offering a competitive salary throughout your career.



Averages based on salaries listed in Hays UK Salary & Recruiting Trends 2019



66%

of the IFoA's student members are from outside the UK

The IFoA has



32,500+
MEMBERS



82%

of actuaries receive bonuses



The average salary that a graduate trainee can earn is higher than a lot of other graduate roles. In fact, it is one of the highest overall, alongside investment banking

The IFoA has



16,590
student members

It's a young, dynamic profession, with

43%

of our membership aged **30** or under

MORE REASONS TO CHOOSE THE ACTUARIAL PROFESSION



**HIGH
QUALITY
TRAINING**



**STRONG
GOVERNANCE**



**PROFESSION
FOR LIFE**



**GOOD WORK/LIFE
BALANCE**



**IMPORTANT AND
CHALLENGING
WORK**



**SUPPORTED BY
EMPLOYERS
AND THE IFoA**



**LIFELONG
JOURNEY**



**EXCELLENT
RESOURCES**

WHAT OUR MEMBERS HAVE TO SAY

LLOYD RICHARDS

Manager, Crowe



“Working as an actuary has been challenging, enlightening, exhausting and inspiring, sometimes all at once!

I decided to become an actuary because I wanted to apply the mathematics I had learned at university to real-world problems, and being a people-person I gravitated towards consultancy. Now three years post qualifying, I manage a small team of actuaries and non-actuaries. Being presented to a prospective client as the problem-solving expert is daunting at first, but you quickly learn the value of the skills you’ve developed and understand how your unique blend of technical ability, professionalism, specialist knowledge and communication skills can create real value for clients.

What excites me is seeing how risk management develops differently in different industries: insurers are world-leaders in managing longevity and financial risks; whereas oil & gas companies have developed operational risk practices that exceed any insurer yet can fail to appropriately manage their financial exposure through derivatives. By seeing a range of clients you can take best practices across industries and enable everyone to benefit.”

PRUDENCE MASEKO

Fellow of the IFoA



“I first heard about the actuarial profession from my A level Mathematics teacher. He described it as “... the perfect career for maths lovers!”. Given the opportunity he would have become an actuary himself; he was keen to see that dream lived out in his students who had an interest and similar aspirations.

A typical day could be anything from carrying out bonus calculations for with-profits insurance policies or calculations on the quarterly valuation under Solvency II, or writing reports for board meetings. No day is the same; fresh and exciting challenges always come up and that is what I find most interesting.

Working and studying for the actuarial exams can be a challenging experience. However, after qualifying all the hard work pays off through a higher than the national average salary, a good work-life balance and an exciting job with plenty of opportunities to progress.”

If there’s one thing that all actuaries have in common it’s that they’re bright and engaged. It’s a young, energetic and dynamic profession.

Here’s what they say about their professional choice.

SAJANTHI NATHAN

Director, Longevity Reporting, Pacific Life Re



“I joined the actuarial profession after a year of working in a different industry because I missed working with numbers. I loved maths at school – its logic, its rigour and the art of problem solving. The actuarial industry is one of the few in which you do really get to apply mathematical thinking to what you do – more than just adding and subtracting numbers!

I started out as a graduate at Pacific Life Re, and worked through my exams at a steady pace, fitting in study around work. The support I received was excellent – a study mentor at work and a generous number of study days. With this, I managed to qualify after three and half years. Meanwhile, the company was great at giving me responsibilities and challenging projects to get stuck in to, to really ensure I was developing in the office too.

I was promoted to team director after four and a half years in the valuation team, and I currently manage students and qualified actuaries. We’re responsible for calculating the value of the company’s liabilities each quarter – in simple terms, this is how much money the company needs to hold. But we do take on a lot of other varied work: testing new model developments from our actuarial systems team; scenario testing various restructuring options for the Board; estimating impacts of Research and Development’s latest view of future mortality improvements; and building a story around our latest financial results in a report for the Chief Actuary, to name a few.

Day to day, I enjoy working with a collaborative team, challenging each other’s ideas to produce insightful results in the most reliable way we can.”

“I decided to become an actuary because I wanted to apply the mathematics I had learned at university to real-world problems.”

Lloyd Richards, Fellow of the IFoA

GETTING STARTED

If you want to move into the actuarial profession, your starting point will be a love of numbers and their possibilities. However, you'll need a whole range of other skills to succeed and the determination to complete your journey.

The good news is, there's more than one way to achieve your goal. You can choose a route that best suits your situation now and your long-term ambitions. We're here to support you in making the right choice. You can contact us for free, expert advice at careers@actuaries.org.uk

Remember that different employers have different requirements for entry into an actuarial/analyst role so take a look at our Actuarial Careers Guide or visit www.actuaries.org.uk/become-actuary

To get started, take a look at our route map and see which path looks most appropriate for you. You're right at the start of a hugely exciting career journey and it's up to you how far you travel.



BECOME AN ACTUARY

A successful career starts with a strong foundation.

Whichever route you choose, we always recommend you take an A level in Maths to build your skills in finance and statistics. Even if you don't have a Maths A level you could still study for a numerate degree.

Going to university

A maths-based degree is a great place to start. Some of the subjects you might want to consider are:

- ▶ Actuarial Science
- ▶ Mathematics
- ▶ Statistics
- ▶ Economics
- ▶ Engineering
- ▶ Chemistry
- ▶ Physics

Many degrees will offer work placements as part of your course. This is a great way to gain some valuable work experience before you graduate.

If you're sure that you want to become an actuary, then pursuing an IFoA-accredited degree programme is for you. Find out more about our accredited degrees at www.actuaries.org.uk/universityexemptions



No matter what course you choose, it's important to pick something that you will enjoy. Some employers may even consider non-numerate degrees but an A level in Maths will be key to getting ahead.

Finding a graduate role

There are many ways that you can increase your chances of gaining a graduate role, from general work experience while you're studying to joining a society or club at university. Your experience doesn't have to be related to the actuarial profession; any experience you gain will give you valuable transferable skills that employers look for.

Once you graduate, securing your first role is an important step on the road to an actuarial career. You can find more information about actuarial roles in our Actuarial Careers Guide or online at www.theactuaryjobs.com

Actuarial Higher Apprenticeships

You may also decide that the Actuarial Higher Level Apprenticeship is the option for you. Apprenticeships are offered to both graduates and non-graduates and vary in length depending on whether you are eligible for any exemptions based on your previous qualifications.

By pursuing an apprenticeship you'll gain formal training, fulfilling the Personal Professional Development (PPD) requirements while studying for your exams.

Find out more about apprenticeships at www.actuaries.org.uk/apprenticeships

Exams

The IFoA exams will build the knowledge and skills you need to succeed as an actuary. As you progress through the IFoA exams, you will be able to specialise in a particular area of the actuarial profession.

EXAMS

Our exams may seem complex, but there's plenty of expert support and guidance available to you. Whether you're at the beginning of your educational journey, looking for your first job or have already started an actuarial role, we're here to help.

Depending on the modules you study, the grades you achieve and whether your degree programme is IFoA accredited, you can apply for exemptions from IFoA exams. This will help reduce the number of exams you will need take to become an actuary.

Find out more about our accredited programmes and other recognised qualifications at www.actuaries.org.uk/exemptions

You will also need to meet our Personal and Professional Development (PPD) requirement to qualify as an actuary. PPD is a record of your work-based learning and demonstrates your ability to work effectively as an actuary.

PPD allows you to demonstrate that you can apply the knowledge and skills you gained through IFoA exams in practice. PPD will also help you to understand:

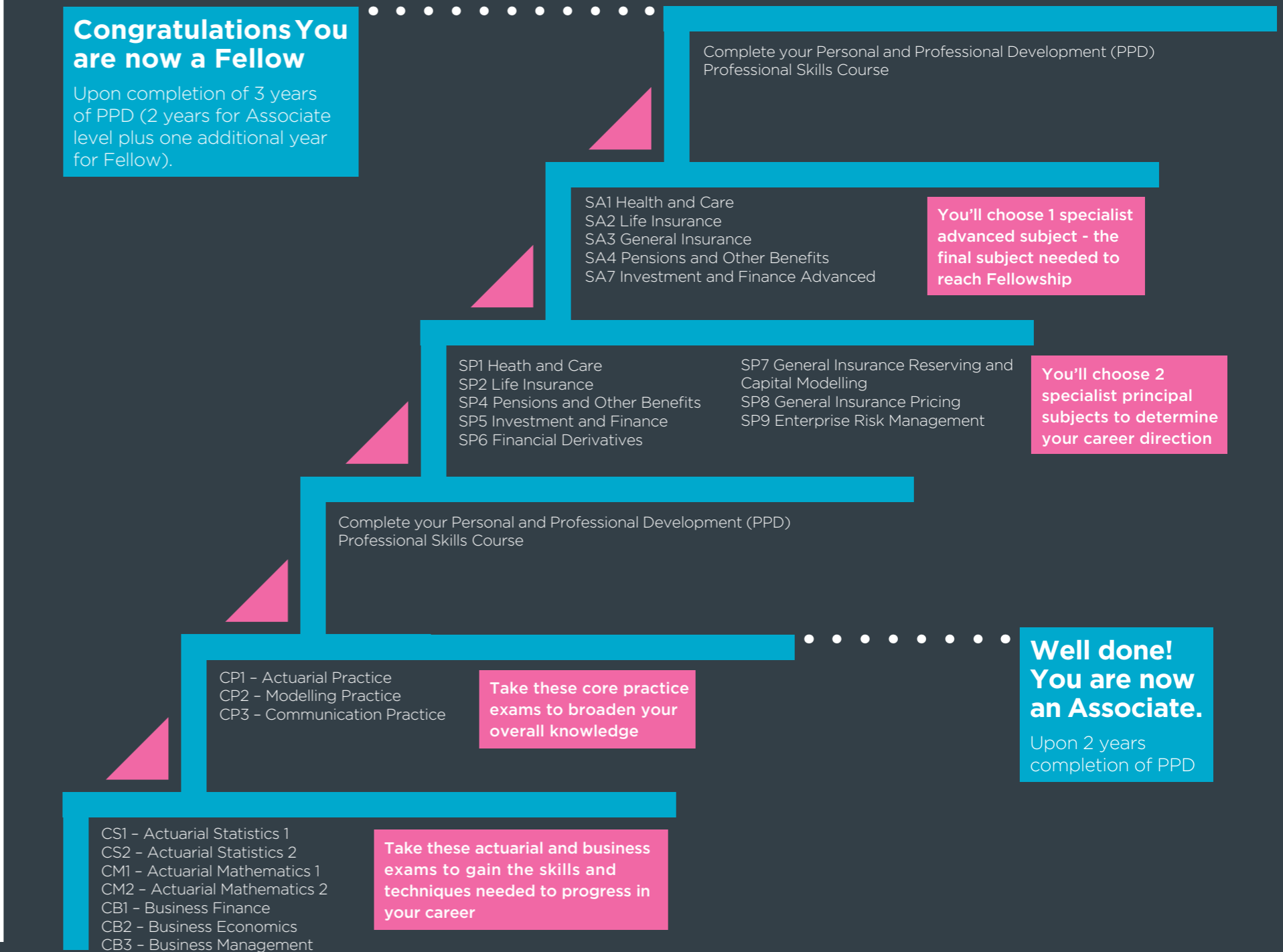
- ▶ Working within a professional and ethical framework
- ▶ The impact your work has on the wider business
- ▶ The importance of reflecting on the quality of your work and identifying areas of improvement through Continuing Professional Development (CPD) activities

The minimum PPD requirement is two years for an Associate and a further one year (minimum) for a Fellow.

The IFoA CPD scheme for members builds on this foundation and helps members meet their obligation to maintain their professionalism set out in the Actuaries Code. The Actuaries Code sets the standards and ethics all actuaries need to abide by.

You can find more details about PPD at www.actuaries.org.uk/PPD

If you would like to find out more about the exam process, visit www.actuaries.org.uk/actuaralexams



BECOME AN ANALYST

If you have excellent technical and analytical skills and want to develop a career in high demand areas including data science, technology and financial services the Certified Actuarial Analyst (CAA) qualification might be for you.

Certified Actuarial Analyst is an internationally recognised professional qualification. You will be able to study for exams while you work. Once you have passed exams in:

- ▶ Finance and Financial Mathematics
- ▶ Statistics and Models
- ▶ Actuarial Mathematics
- ▶ Audit Trails

and fulfilled the work experience and professionalism requirements, you will qualify as a CAA. For more information visit www.actuaries.org.uk/CAA

Actuarial Technician apprenticeship

If you love using maths and data to solve complex problems and want to earn while you learn, an Actuarial Technician apprenticeship could be the right path for you.

The Actuarial Technician apprenticeship is an entry-level role into the financial sector. You will work as part of a team, supporting qualified actuaries using data to provide solutions for clients. You'll also develop key business skills through a combination of work-based training and professional exams.

Apprenticeships normally last 2-3 years depending on your previous experience, how quickly you progress through the exams and the opportunities you have to practice your skills.

Finding an apprenticeship

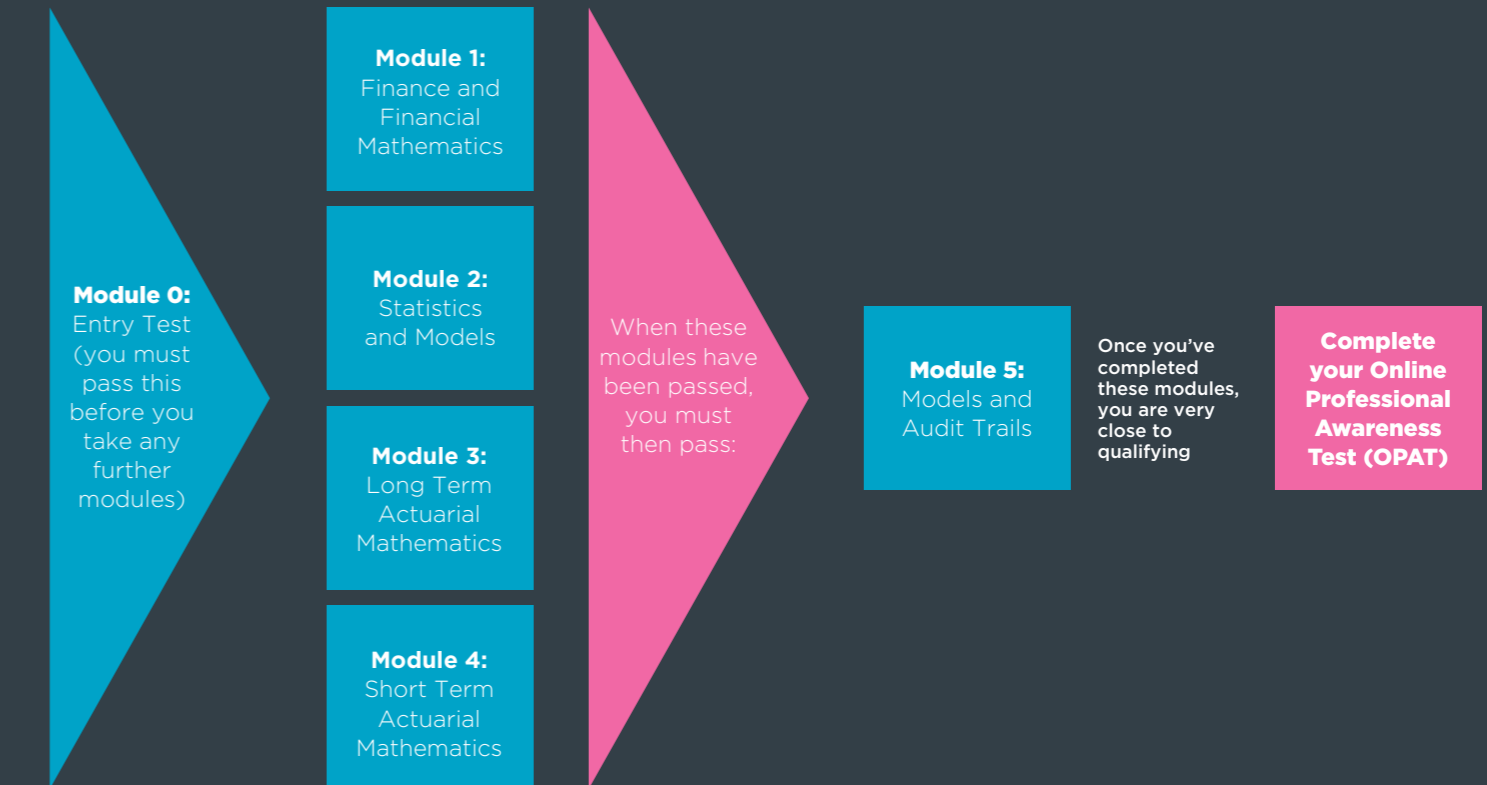
Specifics such as salary, qualifications and other entry requirements will vary – we recommend that you contact employers directly to confirm exactly what they are looking for. Competition for apprenticeships can be high so make sure you have the grades that companies have requested before applying. Relevant work experience and a strong application will help you stand out. You can find information about which companies are offering apprenticeships at www.actuaries.org.uk/apprenticeships

Exams

Once you've secured a role as either an apprentice or analyst, you'll be able to start studying for the CAA exams. Your employer will support you with balancing work and study and will assign a co-worker who can help guide you.

The CAA exam process: your milestones to achievement

Designed to fit around full-time work, the exams can be taken at your own pace at exam centres around the world.



AN INTERNATIONAL PROFESSION

As an actuary or actuarial analyst you will join a growing global community. We have strong links with professionals and partners working around the world, so no matter where you are, you can start your actuarial journey.

With an internationally recognised qualification and valued, transferable numerical skills, becoming an actuary or actuarial analyst can open up global opportunities. If you would like to work abroad, look for companies with international departments and take part in any networking opportunities they offer.

We have exemption agreements with a number of universities around the world. Find a university programme with exemptions at www.actuaries.org.uk/universityexemptions

When you're ready to start taking the IFoA exams you can find an exam centre near you at www.actuaries.org.uk/examcentres

An international community

Our careers ambassadors are based around the world and can provide you with careers advice about the actuarial profession in your region. To find out more contact careers@actuaries.org.uk

You can also be part of our vibrant global community at en-gb.facebook.com/Actuarial

34%

of student members from the UK



8%

from Europe

58%

from rest of the world

OUR GLOBAL COMMUNITY

OLAWALE AYODEJI



Senior Associate, EY, Nigeria

“Have you considered how you can use your love of maths to really make a difference? You might not realise it, but actuaries and actuarial analysts help to solve real-world problems, not just in pensions and insurance, but in climate change, cyber security, population growth and so much more.

We are risk experts – applying maths and statistics to help individuals and society manage the risks we all face. We simplify complex problems, communicate them effectively, and translate the outcomes into meaningful actions. It's a varied, demanding and fulfilling career that really puts your numerical skills to the test.

As an actuary or actuarial analyst, you'll be part of a global community of problem-solvers and strategic thinkers, helping businesses and governments navigate complex issues in a rapidly changing world and prepare for the challenges of the future.

The technical skills and commercial acumen you'll develop as an actuary or actuarial analyst, combined with advances in technology, will open up opportunities in exciting new fields like AI and data science.

If you're interested in a career that can make a real impact, that is challenging but hugely rewarding, then I very much hope you will join us.”

THUY LINH NGUYEN



MB Ageas Life, Vietnam

“I was in the non-life reinsurance industry for five years, and one morning I woke up realising I had already lost the joy for coming to work. So I joined the preparation team of a joint venture life insurance company between a local bank and an international player from Europe. Starting with no experience, I fell in love immediately with the job of an actuary.

Since I was very young, I imagined how the world could be modelled through mathematical formulas. In an actuary's world, a model exists everywhere, and one model links to another. Then all together, all of them unify to draw the big picture. When I visualise that, I feel extremely satisfied and happy. It is the biggest reward for me to become an actuary.

Last but not least, the salary and employee benefit scheme are generous.”

WHAT EMPLOYERS ARE LOOKING FOR

KEVIN LI



Consultant, Deloitte MCS Limited

“As an actuarial insurance consultant for Deloitte, I look after different projects for our various clients. Specifically, I work in a small team called the Capital Markets Group which produces our own Economic Scenario Generation software (which models the behaviour of investments). This means I also get to work on internal projects developing this software. So far, I have developed a new corporate bond model for our software, helping a large Dutch bank test and develop models to calculate the

compensation they owe for mis-sold financial products, and assessing the impact to a major reinsurer’s reported profits and liabilities from changes to accounting standards.”

Deloitte will generally require its actuarial employees to have a sound background in mathematics – there are no specific prerequisites (you don’t specifically need coding or actuarial mathematics experience to start) you just need to demonstrate that you will be able to pick up these skills on the job. As consultants, as well as mathematical knowledge, they expect us to have strong people skills so that they can be confident sending us to a client site. They also look for employees that will be able to work collaboratively, pick up ideas quickly and be enthusiastic to learn more about the insurance industry.”

ALANA PATERSON-BARKER



Director, Swiss Re (global reinsurer)

“When interviewing actuarial students, I always look for enthusiasm and a genuine interest in solving problems (preferably your boss’s problems!). Communication skills are also critical – not having perfect grammar, but being able to communicate actuarial concepts simply.”

JESS HORNER

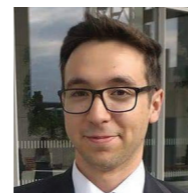


Consultant, Pensions Actuarial, LCP

“Employers are looking for people who are comfortable working with numbers, but also have the ability to look at the bigger picture. It’s important to be able to step back from the technical work being carried out in order to consider the business implications on your client.”

Those who stand out generally get involved in activities outside of studying at university and are able to bring experience to the role from non-educational areas. We look for people who have taken the time to learn/understand what the role involves and demonstrate some commitment to becoming an actuary as the qualification process requires time and commitment.”

MARTIN SABEV



Retirement, Willis Towers Watson

“Becoming an actuary is definitely not easy. It is academically demanding, both when securing a job and as you progress through the exams to becoming a qualified actuary with the IFoA. For this reason, I think one of the most attractive qualities employers like to see is perseverance. Employers are willing to invest a lot of resources to support their trainee actuaries, which is why they need people who are ready to stick with it, even if difficulties arise.”

Another crucial aspect, is the applicant’s appreciation of maths. Particularly as a junior trainee actuary, you will be spending a significant portion of your time dealing with numbers. Attention to detail is also really valued. When there are many simultaneous calculations going on, the ability to spot anything that is not quite right is invaluable.

Many of the big actuarial firms are growing rapidly and are always on the lookout for bright, motivated, young people. You’re not expected to know the technical details about the profession but having general knowledge of the current issues of the sector you’re applying in and general engagement with the actuarial profession is definitely valued. Preparation is also crucial for interviews. It is not just about having the right skills, it is also about demonstrating them. Sometimes unrelated experience can be very relevant in showing that you are the right candidate.”

MORE FROM THE IFoA

The IFoA is the UK's only chartered professional body dedicated to educating, developing and regulating actuaries based both in the UK and internationally.

We have the resources, expertise and commitment to support you at every stage of your career. We'll work hard to help you to realise your professional goals and to continue to develop our industry to ensure a breadth of opportunity. Join us and you'll be one of 32,500+ members worldwide. 94% of our student members are under 40 – and we have a truly global reach.

As a member you'll benefit from:

- ▶ Professional recognition of your achievements nationally and internationally
- ▶ Education and career development through the qualification syllabus and Continuing Professional Development (CPD) programme
- ▶ Influence through your involvement with matters of public interest
- ▶ Regulation and control of our industry
- ▶ Networking as you build a community of your peers to share best practice and offer support
- ▶ Extensive library resources online and hard copy support for your studies and research



MAKE A DIFFERENCE WITH MATHS

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If you're interested in a career that can make a real impact, that is challenging but hugely rewarding, then we very much hope you will join us.

Find out more about the IFoA at www.actuaries.org.uk



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