

ACTUARIAL SCIENCE

Managing risk and
identifying opportunity



WHY STUDY ACTUARIAL SCIENCE?

Discover how organisations solve commercial problems and develop the analytical skills to design solutions to help businesses plan for the future.

WHAT IS ACTUARIAL SCIENCE?

Actuarial Science involves applying mathematics to evaluate risk and opportunity and analysing the likelihood of future events. As a commercial function, it is key to financial security and protects companies from financial loss. It also influences some of society's most important economic projects.

Actuaries manage risk. They combine analytical skills, business knowledge and an understanding of human behaviour to help companies plan for the future and protect themselves in a number of commercial contexts.

By understanding the nature of risk, actuaries can predict and evaluate the likelihood of future events such as floods, fires, car accidents or changes in life expectancy. Then, using information gathered from historic data and a range of mathematical models and forecasting concepts, they are able to design solutions for businesses to help them plan for, or prevent, undesirable events.

For example, actuaries are the people who determine how likely it is that you could have a minor car collision from when you get your licence to when you turn 25 and then work out how much to charge for your car insurance. They are also the people who work out how much money people need in their superannuation to retire comfortably.

WHERE WILL ACTUARIAL SCIENCE TAKE YOU?

Every area of business is subject to risk, so actuaries find work across a huge range of financial and non-financial industries.

Gain employment in:

- > Academia
- > Actuarial Firms
- > Banking
- > Climate Change
- > Consulting
- > Education
- > Finance
- > Government
- > Healthcare
- > Insurance
- > Investment
- > Mining
- > Superannuation
- > Telecommunications

Work with a range of other professionals in:

- > Asset Management
- > Auditing
- > Banking
- > Data Analysis
- > Financial Planning
- > Risk Management
- > Stockbroking

Actuaries are typically employed by insurance and accounting firms, but an actuarial career can be one of the most diverse careers in the world. Actuarial skills are valued on a range of projects for auditing, risk management, data analysis and financial planning. Many different organisations now employ dedicated actuarial teams.

Use your skills to:

- > Decide how much a company should charge for insurance and set aside to pay insurance claims
- > Work out how much money the government needs to support programs such as Medicare or the NDIS
- > Build and use models and statistics to determine the likelihood of certain events, such as which suburbs of Victoria are more likely to experience floods or bushfire
- > Set the retirement age to ensure our economy will still function as people start to retire

WHY STUDY ACTUARIAL SCIENCE AT MONASH BUSINESS SCHOOL?

Monash Business School ranked in the top 100 Business Schools worldwide in the Times Higher Education World University Rankings, 2019. We are the largest business school in Australia and a member of the Group of Eight.

Our Department of Econometrics and Business Statistics is the only dedicated department of its kind in Australia and boasts the largest concentration of econometricians and statisticians in the region.

With strong ties to industry and government, our academics provide consulting advice on planning, decision-making and analytics, including forecasting, econometric and statistical analysis, and statistical reporting.

The Actuarial studies program was designed by actuaries and has a strong emphasis on ensuring students are equipped with both practical and business skills.

WAYS TO STUDY ACTUARIAL SCIENCE

At Monash Business School, you can study to become an actuary with a specialist Bachelor of Actuarial Science degree, or choose Actuarial Studies as a major in a Bachelor of Commerce.

Bachelor of Actuarial Science

Clayton campus

A Bachelor of Actuarial Science will give you technical and analytical skills. It covers financial accounting, microeconomics, macroeconomics and economic statistics. Learn how to apply mathematical concepts to real-life scenarios and gain in depth actuarial skills from day one.

While the course is specifically designed to help students gain professional accreditation with the Actuaries Institute, you will still have the flexibility to study other commerce subjects within the degree.

"I've had an interest in maths since high school and the idea of applying maths to evaluate the risks associated with business has always been interesting to me.

As part of my degree, I've gained insight into the industrial application of actuarial models. From health insurance to super, it's fascinating to see how the topics we study translate into a market of products that serve clients' needs.

Most of my teachers have had years of experience in the actuarial industry, which has given me real-world examples of how theory is applied in practice.

The course is giving me a taste of everything Actuarial Science has to offer, so I can pursue related roles in the future. I'm interested in a career in Asset Management."

ARNAV PRASAD

Bachelor of Actuarial Science and Bachelor of Finance

Bachelor of Commerce – Actuarial Studies major

Clayton campus

A Bachelor of Commerce will give you analytical and conceptual skills. It covers leadership, innovation and policy development. Learn to use data, solve problems and make informed investment and capital-raising decisions.

Choose an Actuarial Studies major to learn how to use data, analytics, econometrics and statistics to identify opportunities and manage risk.

Double degrees with Monash Business School

A double degree with Monash Business School offers you a depth of knowledge by allowing you to study two disciplines from within the Business School. Combine a Bachelor of Actuarial Science with a Bachelor of Commerce. Or combine a Bachelor of Commerce (majoring in Actuarial Studies) with a Bachelor of Economics or a Bachelor of Finance.

Double degrees with other faculties

A double degree with another faculty offers you a breadth of knowledge, as you study across disciplines and explore two interests. Combine a Bachelor of Commerce (majoring in Actuarial Studies) with a number of different degrees from other faculties, including a Bachelor of Engineering (Honours), a Bachelor of Science or even a Bachelor of Biomedical Science.

Professional accreditation

Gain professional recognition and in some cases the right to practice. Components of your study can help you gain professional accreditation. You can use your study to apply for recognition of Part 1 of the additional study required by the Institute of Actuaries of Australia. Parts 1 and 2 are required to become an Associate of the Institute of Actuaries Australia and be qualified to work as an actuary according to international standards.

Further study options

Monash Business School is a launching pad for the leaders, innovators and CEOs of the future. Many of our most successful graduates have studied beyond their first degree to carve out a niche, build leadership skills, change career direction, or develop the specialist skills for a senior industry role. While you might be eager to get out into the workforce, a year or two of postgraduate study can give you a significant competitive advantage when you ultimately set off to build a career.

We offer:

- > Bachelor of Commerce (Honours) – Actuarial Science
- > Graduate Certificate of Business
- > Graduate Diploma of Business
- > Master of Actuarial Studies
- > Master of Applied Economics and Econometrics
- > Doctor of Philosophy – Actuarial Science



Monash Actuarial Program structure

The Monash Actuarial program is designed to give students a solid foundation in Actuarial Science, in the context of a broader understanding of business and the financial sector.

Students who complete the Bachelor of Actuarial Science or major in Actuarial Science to adequate standard are able to apply for exemptions with the Actuaries Institute and become an accredited associate.

The Monash Program covers:

- > all of the Institute's Foundation Program (Part I),
- > the University component of the Associateship program (Part II).

These are the main steps towards becoming an Associate of the Actuaries Institute and calling yourself an Actuary, and further external study and work experience can lead to becoming a Fellow of the Actuaries Institute.

Actuaries Institute Foundation Program (Part I)	Year 1	Year 2	Year 3	Honours/Graduate
CS1 Actuarial Statistics	Business and Economics Statistics	Statistical Thinking	Advanced Statistical Modelling	
		Probability and Statistical Inference		
CS2 Risk Modelling and Survival Analysis		Statistical Thinking	Financial Mathematics under Uncertainty	
			Applied Insurance Methods	
			Applied Forecasting	
CM1 Actuarial Mathematics	Business and Economic Statistics	Actuarial Statistics	Contingencies in Insurance and Pensions	
CM2 Financial Engineering and Loss Reserving			Applied Insurance Methods	
			Financial Econometrics	
			Foundations of Quantitative Finance	
CB1 Business Finance	Introduction to Financial Accounting	Corporate Finance		
CB2 Business Economics	Principles of Microeconomics			
	Principles of Macroeconomics			
Actuary Program (Part II)	Year 1	Year 2	Year 3	Honours/Graduate
Actuarial Control Cycle				Actuarial Practice I
				Actuarial Practice II
Data Analytics Principles & Introduction to Machine Learning				Business Analytics
				Statistical Machine Learning



Find out more

To learn more about Actuarial Science with Monash Business School visit:

monash.edu/business/future-students

Stay connected with Monash Business School:

