

# First Year Information Session 2024

29<sup>th</sup> February 2024

DAVID SUSON, PRANIT PARASHAR, OMAR AMIN



# Disclaimer

While we have endeavoured to make our information up to date and free from errors, we want to stress that this is **our opinion** and does not reflect the Actuarial department.

We recommend that you consult Stop 1 if in doubt.

# Upcoming Events - Free for Members!

- ▶ Quantitative Trading Careers Q&A: Tuesday 5th March (5.45 - 8.15 pm)
- ▶ Finity Site Visit : Thursday 7th March (4:00 - 5:30 pm)
- ▶ Peer Mentoring Introduction Night : Friday 8th March (5.30 - 8.30 pm)
- ▶ EY Site Visit: Wednesday 13th March (Time TBA)
- ▶ Internship Information Session : Week 3 (Date TBA)
- ▶ Student Mixer: Week 3 (Date TBA)
- ▶ Quantium Site Visit : 22nd March (10:00am-12:00pm)
- ▶ Week 4/5: Consulting/Insurance and Data Careers Q&A Sessions (Date TBA)
- ▶ If you want to learn more about Actuarial Students' Society, please add us on Facebook, Instagram and Xiaohongshu.



# First Year Representatives

- ▶ **First Year Representative sign-ups open until 11:59pm Sunday 17<sup>th</sup> March. Applications are reviewed as they are received, so get in fast!**
  - ▶ This is a fantastic opportunity to have fun, make friends, take on a leadership role and challenge yourself.
  - ▶ Please email your resume and a brief cover letter to [contact@melbourneactuary.com](mailto:contact@melbourneactuary.com) before 11.59pm on Sunday 17th March, with the subject of the email being “Application: Role - Full Name” (e.g. Application: First Year - John Smith).
- ▶ If you have any concerns or questions, please also direct them to [contact@melbourneactuary.com](mailto:contact@melbourneactuary.com).

## 2024 FIRST-YEAR REPRESENTATIVES RECRUITMENT

**Actuarial Students' Society is recruiting 3  
First-Year Representatives**

Main responsibilities include:

- Connecting other first-year students with ASS and maintaining a positive relationship with the cohort
- Making regular lecture announcements and keeping the cohort updated about ASS events
- Assisting fellow committee members with organising events and other miscellaneous tasks

Required skills:

- Strong communication and teamwork skills
- Willing to take initiative and responsibilities at events
- Be personable and enthusiastic

This position is a fantastic opportunity to have fun, make friends, take on a leadership role and challenge yourself.

If you are interested, please send your resume and a brief cover letter to [contact@melbourneactuary.com](mailto:contact@melbourneactuary.com) by **11.59pm 14th March**, with the subject of your email being "Application: Role - Full Name" (e.g. Application: First Year - John Smith).

# Peer Mentoring Registration Links

**Registration:** Join the ASS Peer Mentoring Program and take advantage of this perfect opportunity to build inter-year level relationships! Find out more about the actuarial degree and university life in general.



Registration



Peer Mentoring BBQ

# About the Actuarial Students Society

Building bridges since 1989

# The Committee

- ▶ President: Thevindu Wijesundara
- ▶ Vice President: David Suson
- ▶ Treasurer: Alina Chan
- ▶ Secretary: Joseph Lee
- ▶ Education Director: Pranit Parashar
- ▶ Education Officer: Omar Amin
- ▶ Events Director: Oliver Chen
- ▶ Events Officer: Miraz Rai
- ▶ Sponsorship Director: Jianzhi Yew
- ▶ Sponsorship Officer: David Yuan
- ▶ Student Engagement Director: Eloise Auwardt
- ▶ Student Engagement Officer: David Yue
- ▶ Media Officer: Hansen Wang
- ▶ **First Year Representative: You?**

# Contents

1. What is an Actuary?
2. Becoming an Actuary
3. The Actuarial Education Program
4. University Pathway
5. Exemption Subjects and Marks
6. Course Structure
7. Concluding Remarks




# What is an Actuary?

says everyone ever...

# What is an Actuary?


MCF productions

## Actuaries




$EX^k = \frac{0^k}{\Gamma(k)}$   
 $EX^k = \frac{0^k}{\Gamma(k)}$   
 $Mode =$


What my friends think I do



What my mom thinks I do




What society thinks I do




Account Date	Years	1	2	3	4	5	6
2002		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
2003		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
2004		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
2005		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
2006		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
2007		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000

What other actuaries think I do



What I think I do



What I actually do

# What is an Actuary?

- ▶ Wikipedia
  - ▶ *An actuary is a business professional who deals with the measurement and management of risk and uncertainty*
- ▶ Institute of Actuaries of Australia (Actuaries Institute), henceforth AI
  - ▶ *Actuaries are people who evaluate risk and opportunity. They are mathematical problem solvers and strategists.*
- ▶ What is risk?
  - ▶ Market risks
  - ▶ Business risks
  - ▶ Liquidity risks
- ▶ Actuaries analyse data and use models to evaluate risk and opportunity. They apply mathematical, statistical, economic and financial analyses to a wide range of business problems.
- ▶ **Vivian Dang, of the Actuaries Institute, will present more about this topic in his presentation**

# Becoming an Actuary

are you sure about this?

# Becoming an Actuary



Source: <http://www.quickmeme.com/meme/3sd90x>

# Becoming an Actuary

- ▶ The Actuaries Institute is the overseeing body for actuaries in Australia. Some of the things they do include:
  - ▶ Standards and guidelines
  - ▶ Exams
  - ▶ Networking events
- ▶ Minimum length to become a/an:
  - ▶ Associate Actuary: 2 years
  - ▶ Fellow Actuary: 2 + 2 years

You are not officially an actuary until the Actuaries Institute recognises you as an Associate.

# The Actuarial Education Program













Taking a minimum of 4 years of your life


# Actuarial Education Program

- ▶ Foundation Program
  - ▶ **The toolkit:** Core technical skills required to become an actuary
  - ▶ Completed through **university** or the AI
- ▶ Actuary Program - Designated as an Associate (AIAA)
  - ▶ **How do we apply this toolkit across different business environments?**
  - ▶ Two subjects delivered through an accredited **university**, two subjects through AI
  - ▶ One year of relevant work experience
- ▶ Fellowship Program - Designated as a Fellow (FIAA)
  - ▶ More specialised, **how do we apply our skills learnt to specific areas of practice?**
  - ▶ Achieve the Associate designation
  - ▶ Three *Fellowship* modules with AI
  - ▶ One further year of relevant work experience



## Study path to qualification

	Foundation Program	Actuary Program	Fellowship Program
Subjects	 <b>CS1</b> Actuarial Statistics	 <b>ACC</b> Actuarial Control Cycle	  <b>Principles subjects</b> Choose <b>two</b> of the following: <ul style="list-style-type: none"> <li>• Banking</li> <li>• Enterprise Risk Management</li> <li>• General Insurance &amp; Health Pricing &amp; Portfolio Analytics</li> <li>• General Insurance &amp; Health Valuation</li> <li>• Investment</li> <li>• Life Insurance &amp; Retirement Product Development</li> <li>• Life Insurance &amp; Retirement Valuation</li> </ul> <b>Applications subjects</b> Choose <b>one</b> of the following: <ul style="list-style-type: none"> <li>• Data Science Applications</li> <li>• General Insurance Applications</li> <li>• Life Insurance Applications</li> <li>• Superannuation &amp; Retirement Applications</li> </ul>
	 <b>CS2</b> Risk Modelling & Survival Analysis	 <b>DSP</b> Data Science Principles	
	 <b>CM1</b> Actuarial Mathematics	 <b>ALM</b> Asset Liability Management	
	 <b>CM2</b> Financial Engineering & Loss Reserving	 <b>CMP</b> Communication, Modelling & Professionalism	
	 <b>CB1</b> Business Finance		
	 <b>CB2</b> Business Economics		

 Subjects indicated by the grey dots can be completed through study at an accredited university (or by distance through IFoA examinations)

## Professional requirements



Source: Actuaries Institute

# University Pathways

It looks complicated, but it isn't



# University Pathways

- ▶ If you complete a Bachelor of Commerce (Actuarial Studies), you can receive exemption for 5/6 of the units in the Foundations Program
  - ▶ You are missing **one** subject (ACTL40004 - Advanced Financial Mathematics) for CM2, which is only offered in the Honours programs, or CAPs (Community Access Program)
- ▶ However, the University of Melbourne allows you to fulfil the accreditation requirements for the Foundation Program and half of the second stage (Actuary Program) if you:
  - ▶ Complete a Bachelor of Commerce (Actuarial Studies) with Honours;
  - ▶ Complete a Bachelor of Commerce (Actuarial Studies) with a Masters in Commerce (Actuarial Studies)\*
- ▶ The other half of the Actuary Program and the full Fellowship Program is completed externally with the Actuaries Institute.
- ▶ **To gain accreditation for the Actuaries Institute subjects through your University studies, you must gain sufficient marks in a combination of relevant University subjects!**

# Exemption Subjects and Marks

This is what keeps you up at night

# What do we mean by 'sufficient marks'?

- ▶ Subjects recognised by the Actuaries Institute have an exemption cut-off:
  - ▶ For non Actuarial subjects, i.e. no ACTL code, the exemption cut-off is 73.
  - ▶ For Actuarial subjects (ACTLXXXX), the exemption cut-offs are based on the performance of the entire cohort and vary each year – announced by subject coordinators after the subject's assessment.

# Foundation Program Exemptions

Core Principle Subjects (AI)		University Subjects
CM1	Actuarial Mathematics 1	ACTL20001 Introductory Financial Mathematics ACTL30003 Contingencies
CM2	Financial Engineering and Loss Reserving	ACTL20004 Topics in Actuarial Studies ACTL30006 Intermediate Financial Mathematics ACTL40004 Advanced Financial Mathematics
CS1	Actuarial Statistics 1	MAST20004 Probability MAST20005 Statistics ACTL30004 Actuarial Statistics
CS2	Risk Modelling and Survival Analysis	ACTL30001 Actuarial Modelling 1 ACTL30002 Actuarial Modelling 2 ACTL30007 Actuarial Modelling 3
CB1	Business Finance	ACCT10002 Introductory Financial Accounting <b>FNCE10002 Principles of Finance</b>
CB2	Business Economics	<b>ECON10004 Introductory Microeconomics</b> ECON20001 <i>Intermediate</i> Macroeconomics

# Actuary Program Exemptions

Institute Subjects		University Subjects	
Actuarial Control Cycle		ACTL40006 Actuarial Practice and Control 1 ACTL40007 Actuarial Practice and Control 2	
Data Analytics Principles		ACTL40012 Actuarial Analytics and Data 2	
Institute Subjects			
Asset and Liability Management		Communication, Modelling and Professionalism	

# What do we mean by 'sufficient marks'?

Your exemption mark for a subject is calculated as:

Your Final Mark - Exemption Cut-off

- ▶ If the weighted average of your exemption marks for the relevant group of subjects is non-negative ( $\geq 0$ ), then you are eligible for exemption for that Institute subject
- ▶ A following example...

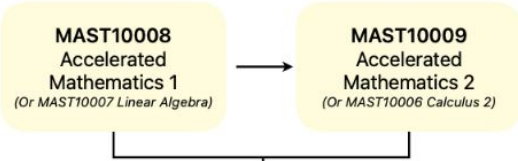


# Example of Exemption Calculation

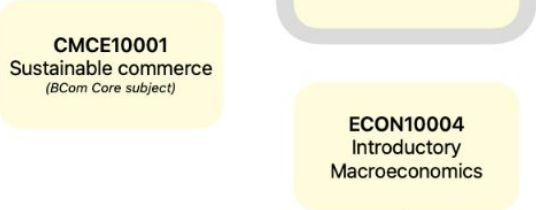
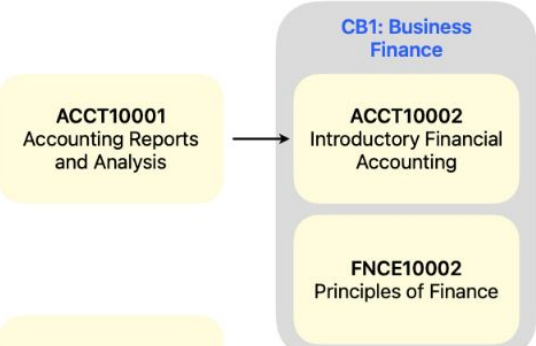
David wants to know if he has gained the exemption for CB1 - Business Finance. He scored 70 in ACCT10002 Introductory Financial Accounting, and 78 in FNCE10002 Principles of Finance. Since they are non ACTL, the cut-off mark is 73 for both.

1. In this case, his exemption marks for ACCT10002 and FNCE10002 are -3 and 5 respectively
2. His overall exemption mark for CB1 is  $0.5(-3)+0.5(5) = 1 \geq 0$
3. Therefore, David is eligible for CB1 Exemption

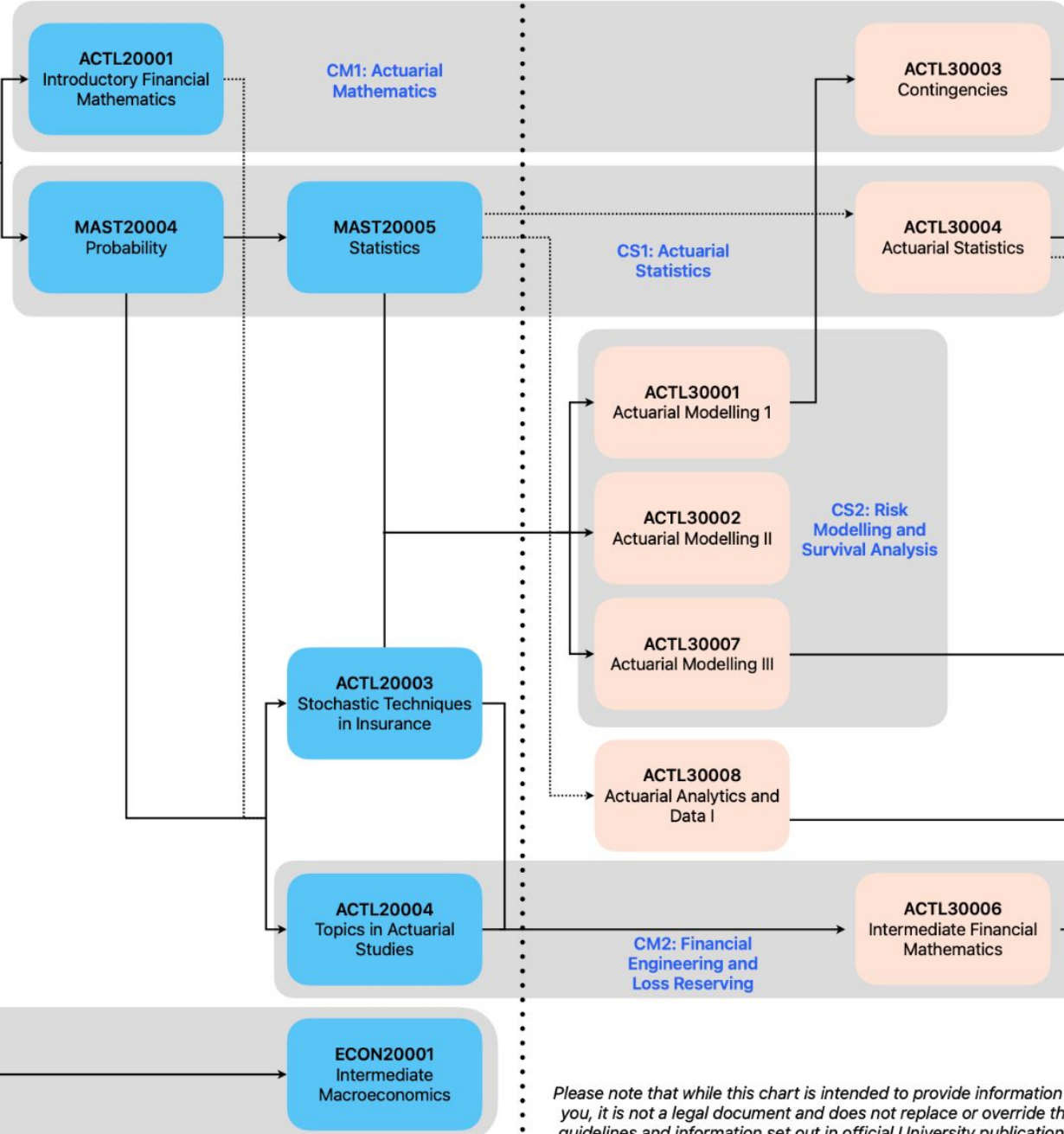
# Foundations



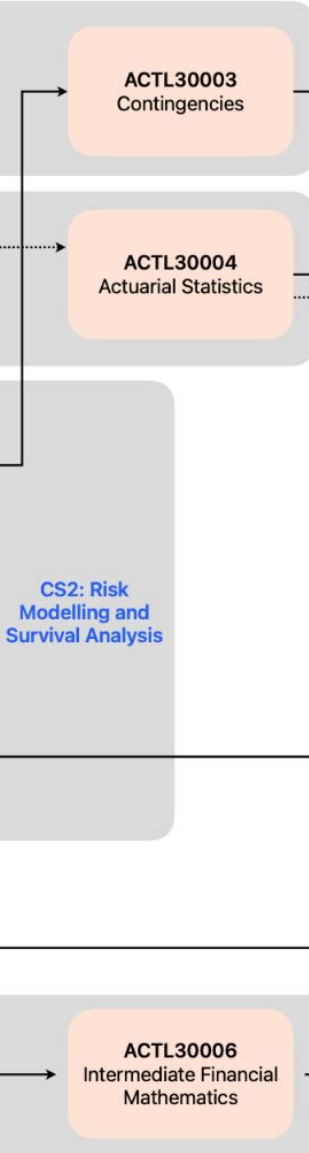
**BCom Actuarial Major with Honours**  
Commencing February 2023



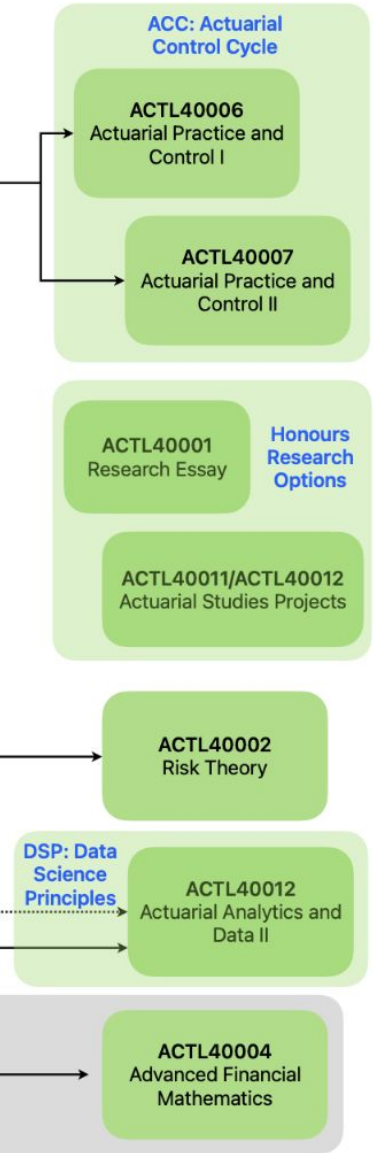
# Techniques



# Applications



# Practice



Please note that while this chart is intended to provide information to you, it is not a legal document and does not replace or override the guidelines and information set out in official University publications.



# Fellowship Program

- ▶ Online format: three half-year modules
  - ▶ There are 11 subjects in total to select from
  - ▶ Pick one subject per module depending on area of specialisation
  
- ▶ Each subject is specific to an industry, for example:
  - ▶ Life Insurance and Retirement
  - ▶ General and Health Insurance
  - ▶ Banking/Investments
  - ▶ Enterprise Risk Management/Data Analytics



# How to get exemptions

- ▶ 1. Complete required subjects
- ▶ 2. Get AI Membership (student discount \$160)
- ▶ 3. Fill out exemption form ->
- ▶ 4. Send to Centre for Actuarial Studies
- ▶ 5. Pay for exemptions! (\$300 per subject)



## Exemption Eligibility Recommendation

The University advises that the following student has obtained grades which satisfy the Actuaries Institute's standard for exemption:

Prefix:	First Name:	Last Name:
Date of birth:	Student University Number	Actuaries Institute Member ID
Current Address:	ID:	ID:
International Address:	(if applicable)	
Contact number:	Email address:	

**Subject Exemptions:** The University recommends that the student be granted exemption for the following subject(s) based on their studies completed from \_\_\_\_\_ to \_\_\_\_\_:

### Foundation Program

\* Please indicate the relevant subjects you are eligible to gain exemption for based on the curriculum you completed. If a student has studied under the CT curriculum the requisite recognition for the current curriculum will be awarded by the Actuaries Institute based on the exemptions attained.

CT1	CT2	CT3	CT4	CT5	CT6	CT7	CT8
CM1	CM2	CS1	CS2	CB1	CB2		

### Part II

\* Please indicate only the relevant box - The first two boxes indicate a partial exemption only, where the student has only attained the exemption level for a component of Part II. Please tick the final box **alone** if a full Part II exemption has been attained.

Part II A - Actuarial Control Cycle <i>only</i>	Part IIB - Investment and Asset Modelling <i>only</i>	Complete Part II (Part IIA ACC + Part IIB Investments)

Student's signature

Dr Rui Zhou

Centre for Actuarial Studies  
University of Melbourne

Date:

Date:

# Course Trends

The hunger games but for nerds







# Enrolment Numbers

- ▶ Based off ACTL subject with the least amount of enrolments in appropriate study period

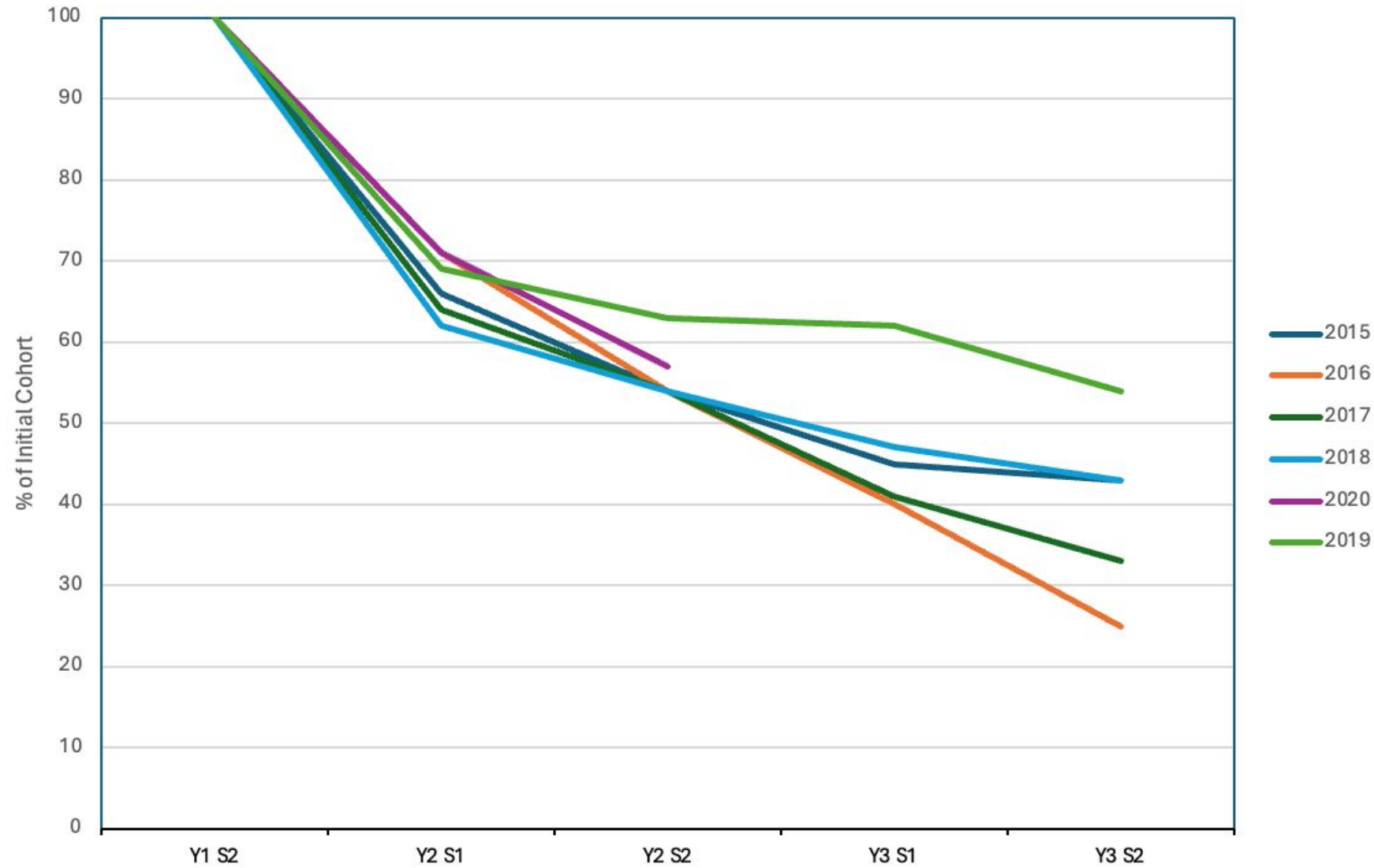
Cohort	2015	2016	2017	2018	2019	2020
Y1 S2	178	267	224	213	208	182
Y2 S1	117	189	144	133	144	130
Y2 S2	96	144	122	116	132	104
Y3 S1	80	107	92	101	129	NA
Y3 S2	77	66	75	92	112	NA

# Enrolment Numbers in %

Cohort	2015	2016	2017	2018	2019	2020
Y1 S2	100	100	100	100	100	100
Y2 S1	66	71	64	62	69	71
Y2 S2	54	54	54	54	63	57
Y3 S1	45	40	41	47	62	NA
Y3 S2	43	25	33	43	54	NA



## Changes in Actuarial Cohort Throughout Degree





# Disclaimers!

- ▶ What these slides **do not** show:
  - ▶ The number of students who do not get their exemptions (generally less than 50% of students that enrol in a subject get the exemption for that subject).
  - ▶ Does not show failure rate for individual classes
  - ▶ Number of students who get their exemptions outside of University
  - ▶ The number of students who quit after 1<sup>st</sup> Year 1<sup>st</sup> Semester.

Basically, be prepared to **work hard**.

# Course Structure

Perfect for indecisive people

# BCom - Actuarial Studies: Course Structure

- ▶ Recommended First Year Subjects
- ▶ Semester 1
  - ▶ ACCT10001                      Accounting Reports and Analysis\*
  - ▶ ECON10004                    Introductory Microeconomics\*
  - ▶ CMCE10001                    Sustainable Commerce
  - ▶ MAST10007 or MAST10008    **Linear Algebra\*** or **Accelerated Maths 1\***
- ▶ Semester 2
  - ▶ FNCE10002                    Principles of Finance
  - ▶ ACTL10001                    (Introduction to Actuarial Studies)
  - ▶ ECON10003                    Introductory Macroeconomics\*
  - ▶ MAST10006 or MAST10009    **Calculus 2\*** or **Accelerated Maths 2\***

You can take the **Accelerated Pathway** if you can, and if you like maths a LOT.

\*Prerequisite for exemption subject (bold)

# Mathematics options

You must complete one of the Linear Algebra subjects and one of the Calculus subjects and receive a combined mark greater or equal to the cell that is the intersection of your chosen subjects.

**Failure to meet the corresponding condition means you will not be able to continue the major (without extending your degree).**

		<i>Linear Algebra</i>		
		MAST10007	MAST10022	MAST10008
<b>Calculus</b>	MAST10006	150	150	135
	MAST10021	150	150	135
	MAST10009	135	135	120

Highly recommended that you choose the combination of subjects that will ensure you get the highest score (and peaks your interest).

For more information, including UMEP, please check the [university handbook](#) and our [Subject Review](#)

# Course Options

Breadth subjects? What are those?

# Intensive Subjects

- ▶ The University of Melbourne offers some subjects in intensive periods (Summer, Winter, July, January, etc.)
  - ▶ Complete a subject in a quicker time frame
  - ▶ Allows you to take fewer subjects in other semesters (very useful for second and third year)
  - ▶ E.g. taking Organisational Behaviour during summer period
- ▶ For more information (as well as the subjects that are available in intensive periods), check the [university handbook](#).



# Concurrent Diplomas

- ▶ Can take a concurrent Diploma in Computing, Languages, Mathematical Sciences and Music.
- ▶ Mathematical science Diploma
  - ▶ Statistics & Stochastic Processes - Must extend degree by at least half a year.
  - ▶ Every other discipline - Must extend degree by a year.
- ▶ Other Diplomas
  - ▶ Must extend degree by a year

# Double Majors

- ▶ Don't need to do all of the ACTL subjects in 3rd year to get an actuarial major
  - ▶ Only need to complete 3 level-3 subjects
  - ▶ This means you can double major
- ▶ HOWEVER, if you are set on becoming an actuary, highly recommended that you take all the subjects
  - ▶ Will help attain exemptions

# Double Majors

- ▶ Actuarial/Finance
  - ▶ Must not enrol in ACTL30006 Intermediate Financial Mathematics
  - ▶ Must enrol in FNCE20005 Corporate Financial Decision Making (2<sup>nd</sup> year commerce elective)
- ▶ Actuarial/Economics
  - ▶ Must complete ECON20002 Intermediate Microeconomics in either semester 1 of 2<sup>nd</sup> year or a summer semester

# Leaving Actuarial Studies

- ▶ The ACTL course structure is flexible enough to allow you to do any major combination (*outside of accounting*) after first year.
- ▶ Generally, the earlier you leave, the easier it is to transition

# Postgraduate Course Options

- ▶ Both the **Honours Program** and the **Masters of Commerce** allow you to complete your Foundation program and attain your Actuary Program exemptions.

Table: What are the main differences?

	Honours	Masters
Length	1 Year	1.5 Years
Research Required?	Yes	No
Options	Very Restricted	Relatively Flexible

More information on our website!

# Exchange opportunities in 3rd Year

- ▶ Heriot-Watt University Actuarial Exchange Program
  - ▶ Each year, up to two students from each university can spend a year at the other institution, gaining credits towards their degree and also having the opportunity to gain exemptions from professional actuarial exams.
  - ▶ Before embarking on the exchange, the students must decide whether their degree is an Honours degree or a Master of Commerce degree, which dictates how the credits gained at the other institution are to contribute to the degree.
- ▶ The Actuarial Department has more information by following the QR code below



# Concluding Remarks

We made it!



# Study Tips

- ▶ Foundation maths subjects are *extremely important*
  - ▶ *Linear Algebra, Calculus, Probability and Statistics*
- ▶ Focus on **all your subjects** (not just your exemption subjects)
- ▶ Rote-memorisation and grinding exercises (common study techniques in High School) will no longer be as effective
- ▶ Start your assignments early, be organised and meet your deadlines!

The subjects only get harder as you progress through your degree

# Essential Skills

- ▶ We covered a lot on the educational side of things. However, to become a successful actuary, you must need:
  - ▶ Strong communication skills;
  - ▶ Teamwork skills;
  - ▶ The ability to exercise judgment;
  - ▶ Technical skills (Excel, general programming skills); and
- ▶ Use the time you have in university to develop these skills! It's not *just* about studying and marks

# Useful Links

- ▶ Actuaries Institute



- ▶ Center of Actuarial Studies



- ▶ Actuarial Students' Society



- ▶ Faculty Student Guide





Q & A

# Don't forget!

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