Report to ECC from the Board of Examiners

SEMESTER 2 2016

PART III

BOARD OF EXAMINERS' REPORT

Publisher
The Institute of Actuaries of Australia
ABN 69 000 423 656
Level 2, 50 Carrington Street
Sydney NSW 2000
Tel: +61 (0)2 9239 6100, Fax: +61 (0)2 9239 6170
www.actuaries.asn.au

CONTENTS

CHAIR'S REPORT

Summary

1. Examinations

The Semester 2 2016 Part III examinations of the Actuaries Institute ("Institute") were held from the 11th to the 20th of October 2016.

2. Pass Rates

The number of candidates presenting for the Semester 2 2016 Part III Exams, the number of passes and the resulting pass rates are shown in the table below, together with the corresponding numbers for the previous two exam periods.

Table A: Pass Rates by Part III Course

	2016 (2)			2016 (1)			2015 (2)		
	Sat	**Pass**	**%**	**Sat**	**Pass**	**%**	**Sat**	**Pass**	**%**
2A Life Insurance	66	14	**21**	82	16	20	57	18	32
2B Life Insurance	46	15	**33**	50	11	22	50	17	34
3A General Insurance	91	21	**23**	106	35	33	82	23	28
3B General Insurance	75	27	**36**	55	17	31	54	20	37
5A Invest. Man. & Fin.	43	27	**63**	n/a	n/a	n/a	49	10	20
5B Invest. Man. & Fin.	n/a	n/a	**n/a**	34	4	12	n/a	n/a	n/a
6A GRIS	n/a	n/a	**n/a**	17	7	41	n/a	n/a	n/a
6B GRIS	15	5	**33**	n/a	n/a	n/a	17	7	41
ST9 ERM	82	36	**44**	96	34	35	92	44	54
ST1 Health & Care	19	7	**37**	15	3	20	82	41	50
C10 CAP	64	30	**47**	80	45	56	81	51	63
Total	**501**	**182**	**36%**	**424**	**135**	**32%**	**390**	**146**	**37%**

The assessment for this semester comprised 10% online forum participation and 90% for three long answer exam questions.

The Chief Examiners aim to produce a consistent standard of passing candidates, rather than a consistent pass rate from year to year. The overall pass rate for this semester is 36%, which is higher than the 32% pass rate for the previous semester.

It is pleasing to see the improvement in the pass rates for 5A and 2B from the previous semester. However, it is disappointing to see the fall in the pass rates for 3A and C10 from the previous semester, as well as the continuing low pass rate for 2A from the previous semester.

3. Fellows

The number of members that will be made Fellows (subject to attendance at a Professionalism Course and paying any relevant exemptions) will be:

Table B: Number of Fellows

2016 (2)	2016 (1)	2015 (2)	2015 (1)	2014 (2)	2014 (1)	2013 (2)	2013 (1)
37	32	29	29	39	32	31	29

4. Online Forum Participation

The online forum participation continued for all Institute delivered courses this semester except C10.

Students are required to post 2 original posts and 4 replies. A participation mark was awarded based on the quality of these posts.

The following table provides a distribution of the participation marks received by students (who sat the exam):

Frequency Distribution for Semester 2 2016

Participation Mark	Subject						
	2A	2B	3A	3B	5A	6B	Total
10	20	5	50	21	24	2	122
9	24	7	13	32	4	7	87
8	15	21	19	17	8	1	81
7	1	6	3	1	0	1	12
6	1	2	0	0	2	0	5
5	1	0	2	1	3	0	7
4	0	0	0	0	1	1	2
3	1	0	1	0	0	0	2
2	2	1	0	1	1	2	7
1	0	1	0	0	0	0	1
0	1	3	3	2	0	1	10
No. of Candidates	66	46	91	75	43	15	336
Average Mark	8.5	7.3	8.8	8.6	8.7	7.1	8.4

Observations:

- The engagement by students in the online forums continues to be very good. This is a pleasing result.
- The proportion of students achieving the maximum mark of 10/10 is 36% which continues to be at a high level.
- The average participation mark for 2B continues to be low, relative to most of the other subjects.

Exam Administration

1. Course Leaders

Course Leaders are appointed by the Institute to undertake a variety of tasks relating to modules 1-3 of the Part III education program. Course Leaders draft examination questions, conduct tutorials, monitor forums and assess the online participation mark. The following is a list of the Course Leaders for this semester:

Table 1: Course Leaders

Course	Roles
2A	Exam: Georgina Hemmings Tutorials, Forum Participation: Bruce Thomson
2B	Long Answer Question Writers: Fei Zhang, Ashley Wilson Tutorials: Richard Land Forum Participation: Andrew Patterson
3A	Exam: Ezio Lo Castro Tutorials: Jeff Thorpe Forum Participation: Jacqui Reid
3B	Exam: Jacqui Reid Tutorials: Ben Qin Forum Participation: Mathew Ayoub
5A	Exam, Tutorials, Forum Participation: Andrew Leung
6B	Exam, Tutorials and Forum Participation: Vivian Dang
CAP	Exam: David Service, Julie Cook, Colin Priest, Bridget Browne, Gaurav Khemka Post-Course Assignment: Naomi Edwards, Andrew Gale, David Service
ST9	This course is run completely external to the Institute.
ST1	This course is run completely external to the Institute.
F101	This course is run completely external to the Institute

2. The Board of Examiners

The Board of Examiners oversee the Part III examination process of the Actuaries Institute. The Board of Examiners consist of the Chair and the Chief Examiners for each subject, supported by Institute staff.

The constitution for the Board of Examiners for this semester was as follows:

2.1. BoE Chair

Chair Gary Musgrave

2.2. Chief Examiners

Course 2A:	Life Insurance	Andy Siu
Course 2B:	Life Insurance	Danny Bechara
Course 3A:	General Insurance	James Pettifer
Course 3B:	General Insurance	James Fitzpatrick
Course 5A:	Investment Management & Finance	Andrew Goddard and Syd Bone
Course 6B:	Global Retirement Income Systems	Stephen Woods
Course 10:	Commercial Actuarial Practice	Bruce Thomson

2.3. Assistant Examiners

The Assistant Examiners for this semester were:

Course 2A:	Life Insurance	Alice Truong & Catherine Watson
Course 2B:	Life Insurance	David Ticehurst & Robert Herlinger
Course 3A:	General Insurance	Daniel Lavender & Andrew Teh
Course 3B:	General Insurance	Elaine Pang & Chao Qiao
Course 5A:	Investment Management & Finance	N/A
Course 6B:	Global Retirement Income Systems	Jim Repanis
Course 10:	Commercial Actuarial Practice	Matthew Ralph

I would like to take this opportunity to thank all of the members of the Board of Examiners and their assistants for their efforts in preparing and marking the examination papers. The management of the examination process is an extremely important function of the Institute and it is currently being run by a small group of committed volunteers.

2.4. Meetings of the Board

The Board met on three occasions this semester as part of the exam process as follows:

Table 2: Meetings of the Board

Meeting	Purpose
1 July 2016	• Update on enrolment numbers and course offerings for this semester. • Identify Chief & Assistant Examiners and Course Leaders for each course for this semester. • Outline the responsibilities of Chief Examiners and this semester's schedule. • Review progress on the drafting of the exams to date
22 September 2016	• Discuss the status of this semester's examination papers, model solutions and sign-off process. • Discuss the marking spreadsheets and review the recruitment of markers.
25 November 2016	• Review the recommended pass lists and treatment of borderline candidates.

2.5. Scrutineers

The Scrutineers for Semester 2 2016 were:

Table 3: Scrutineers

Course	Longer Answer Questions, Case Study Assignment and Exam
Course 2A	Ryan Druitt, Steven Diep, Weiraun Wong
Course 2B	Christine See, William Zheng, Teerapong Thaviwatanachaikul
Course 3A	Kelly Lee
Course 3B	Samuel Chu, Yongjie Qi
Course 5A	Jack Ding, Zoe Yang, Alex Leung
Course 6B	John DeRavin, Stuart Mules, Young Tan
Course 10	Anthony Locke (Life Insurance) Gaurav Khemka (Investments) Aloysius Lim (Health) Kar Kan Lo (GRIS) Alex Chen (General Insurance) Weihao Choo (ERM) Gautham Suresh (ESG) Justin Si (Banking) Wan Wah Wong and Rohan Dixit (Data Analytics)

3. Exam Administration and Supervision

The Board of Examiners was ably assisted by a number of Institute staff, the Education Team, in particular Sarah Tedesco, Karenna Chhoeung, Eleanor Mazando and Carolina Vilches. They were responsible for administering the entire process and ensuring key deadlines were met, compiling and formatting the examination papers, distributing material to candidates and to exam centres, processing results and collecting historical information for the production of this report. They did a great job and the Board of Examiners team is indebted to them all.

The Part III examinations were run by an external consultancy – Cliftons, a computer training venue.

Other examinations in temporary exam centres were administered by Fellows or other approved supervisors.

4. Exam Candidature

4.1. Candidate Mix

The mix of courses sat by candidates is broadly similar to that in previous years

Table 4: Candidate Mix by Part III Course

Subject	2016 (2)	2016 (1)	2015 (2)	2015 (1)	2014 (2)
Life Insurance	28%	31%	27%	32%	29%
General Insurance	41%	38%	35%	37%	37%
Investment Management & Finance	11%	8%	13%	6%	9%
Global Retirement Income Systems	4%	4%	4%	5%	3%
Commercial Actuarial Practice	16%	19%	21%	20%	23%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

BoE Members for Semester 1 2017

1. Board of Examiners

The composition of the Board of Examiners for next semester, Semester 1 2017 is as follows:

1.1. Chair

Gary Musgrave

1.2. Chief Examiners

Course 2A: Life Insurance	Andy Siu
Course 2B: Life Insurance	Danny Bechara
Course 3A: General Insurance	Daniel Lavender
Course 3B: General Insurance	James Fitzpatrick
Course 5B: Investment Management & Finance	Charles Qin & Claymore Marshall
Course 6A: GRIS	Stephen Woods
Course 10: Commercial Actuarial Practice	Bruce Thomson

1.3. Assistant Examiners

Course 2A: Life Insurance	Alice Truong, Catherine Watson
Course 2B: Life Insurance	David Ticehurst, Robert Herlinger
Course 3A: General Insurance	Ryan Anderson, Andrew Teh
Course 3B: General Insurance	Chao Qiao, Elaine Pang
Course 5B: Investment Management & Finance	N/A
Course 6A: GRIS	Jim Repanis
Course 10: Commercial Actuarial Practice	Matthew Ralph

2. Examination Dates

The dates for the examinations in Semester 1 2017 are as follows:

Table 5: Examination Dates

Module	Subject	Exam Date
1	ST1 Health & Care (IFoA)	21 April
1	ST9 Enterprise Risk Management (IFoA)	26 April
1	F101 Health Principles(ASSA)	TBC
2	C3A General Insurance	24 April
3	C3B General Insurance	27 April
2	C2A Life Insurance	28 April
3	C2B Life Insurance	2 May
3	C5B Investment Management & Finance	3 May
2	C6A Global Retirement Income Systems	4 May
4	C10 Commercial Actuarial Practice	5 May

3. Exam Solutions

The Board of Examiners have agreed to release this semester's examination questions only. The marking guides will be used as learning resources in Semester 1 2017.

Gary Musgrave
Chair of the BOE
11th January 2017

EXAMINER REPORTS SEMESTER 2 2016

COURSE 2A LIFE INSURANCE

1. Summary

1.1. Course Overview

The aim of the 2A Life Insurance Course is to provide the market, legislative and product knowledge, along with the skills and judgment, necessary for an actuary to tackle a range of management related problems in life insurance relating to underwriting and risk management, experience analysis, assumption setting and pricing.

1.2. Assessment

The assessment model is broken down into two parts:

Forum Participation	10%
Long Answer Question Exam	90%

1.3. Pass Rates

75 candidates enrolled this semester. Of these, 6 withdrew and 3 did not present, leaving 66 sitting the exam.

It is proposed that 14 candidates be awarded a pass, which implies a pass rate of 21%. Table 1 shows the historical pass rates for this subject:

Table 1 – Course Experience

SEMESTER	SAT	PASSED	PASS RATE
Semester 2 2016	**66**	**14**	**21%**
Semester 1 2016	82	16	20%
Semester 2 2015	57	18	32%
Semester 1 2015	65	20	31%
Semester 2 2014	56	25	45%
Semester 1 2014	62	16	26%
Semester 2 2013	59	25	42%
Semester 1 2013	50	26	52%
Semester 2 2012	43	14	33%
Semester 1 2012	67	22	33%
Semester 2 2011	54	10	20%
Semester 1 2011	60	18	30%

The 21% pass rate for this exam is slightly higher than the 20% pass rate for the previous exam (Semester 1 2016) but lower than the historical average. Candidates generally failed to demonstrate a reasonable understanding of the key concepts being tested or present reasonable arguments to support the points raised. There were also many instances where dangerous statements were made. Overall performance is further discussed in section 2.1.

2. Assessment

2.1. Overall Performance

The pass rate for this semester is 21%, which is poor and significantly lower than the historical average.

Performance in the forum participation component was strong, with a pass rate of 87%. As in previous semesters, the forum participation component was not a good differentiator of the quality of the candidates.

Overall, the LAQ component was very poorly done. The LAQs were designed to cover a reasonable spread of topics and practice areas, with question 1 covering underwriting, question 2 covering reinsurance and question 3 covering good practice in a number of key aspects of life insurance management. There was a lack of consistency in the performance of most candidates across all three LAQs, suggesting a lack of broad understanding of the issues. Very few candidates appeared strong across all areas of assessment, with only four candidates scoring grades of B or better across all three LAQs. Many candidates did poorly in the parts of the LAQs requiring the application of complex judgement and often failed to provide reasonable, well-argued and detailed answers, which were a key differentiator. Similar issues were observed last semester, where candidates had difficulty with the more open ended parts of the LAQs.

The spreadsheet calculation components of the LAQs were generally poorly done. While most candidates did well with the basic mechanical parts of the spreadsheet questions, a large number of candidates struggled where an application of slightly more technical knowledge was required, for example, the calculation of reinsurance cashflows under a surplus reinsurance arrangement.

A large number of candidates made dangerous statements in regard to the tightening of a trauma definition, suggesting that the tighter definition can be applied to in-force policies. These candidates did not appear to realise that such an action would be a breach of contract and therefore illegal, unless the policy terms and conditions allow it (for example, cancellable contracts). This lack of understanding could be due to the fact that the textbook only briefly mentions guaranteed renewability, and that brief mention occurs in the context of disability income insurance, which may have misled candidates into thinking that guaranteed renewability only applies to disability income business. I suggest that the textbook be revised to better explain the concept of guaranteed renewability and its implications, and also move it out of the disability income section so that it is clear that it can apply more broadly in practice.

Feedback from the Markers suggests that the exam may have been too long, contributing to the poor performance.

2.2. Exam Question by Question Analysis

Question 1

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	60.0	60.0			
Strong Pass (A)	48.0	48.0	80.0%	0	0%
Pass (B)	30.5	30.5	50.8%	17	26%
Slightly Below Standard (C)	27.5	27.5	45.8%	12	18%
Weak (D)	20.0	20.0	33.3%	21	32%
Showed Little Knowledge (E)	12.0	12.0	20.0%	10	15%
Did Not Attempt (X)	1.0	1.0	1.7%	6	9%
Maximum Mark	43.3	43.3			
Average Mark	25.1	25.1			
Standard Deviation	8.3	8.3			
Coefficient of Variation	0.33	0.33			

Question 1 was about a proposed change in medical limits for underwriting.

Markers' comments:

Overall this was a difficult question for candidates and was not answered particularly well, with a pass rate of 26%. It was apparent that many candidates did not have sufficient time to perform the calculations in the spreadsheet and answer the written parts of the question in detail. There was a lot of information to absorb for this question and, based on the quality of the responses, it appeared to be challenging for the candidates to complete the question in the time allocated. Quite a few candidates mentioned in their solutions that they lacked time and several candidates included dot points in their solutions rather than explaining the points in detail.

Part (a)

Part (i) asked for an explanation of the impacts of changing the medical limits on expenses and to propose new unit cost assumptions. Several candidates only provided calculations and no explanation (and some candidates provided proposals without calculations). Many candidates incorrectly changed the percentage of premium expenses and the renewal expenses. Several solutions also stated that claims expenses would increase due to more complicated claims even though the policy is a YRT death only policy.

Part (ii) asked for an explanation of the impacts of changing the medical loading on the health loading and to propose a new assumption. Very few candidates made the point that the premium loading would decrease. Most candidates understood that the claim loading should increase due to higher mortality risk. Very few candidates provided the full calculation of the new health loading incorporating discretionary testing and declined policies.

Part (iii) required the candidate to apply the health loading to the cash flow model and compare PVs for the current and proposed policy design. Most candidates did not apply the premium loading correctly (they either did not apply it or they applied the claim loading to the premium). Candidates generally applied the claims loading correctly. There were some mistakes with PV calculations but most candidates calculated the IRR correctly. There were a lot of incorrect changes to PVs since these depended on the assumptions recommended in parts (i) and (ii) and how and if these assumptions were applied in the model.

Part (b) requested a memo covering profitability and premium rates, uncertainty and future experience and comments on the next stages of the analysis. Many candidates did not write a sufficient number of points. It appeared that candidates did not have sufficient time to complete this section properly. Comments on profitability were generally not detailed enough. Most candidates appreciated the increased anti-selection risk and higher mortality risk but few commented on the declined and deferred policies and those with discretionary underwriting. Comments on the next stage of the analysis commonly included actions around assuming the proposal had been approved; for example, arrange reinsurance, talk to the claims department and monitor experience and so on, but the question required points on analysis such as sensitivity testing and portfolio analysis.

Question 2

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	60.0	60.0			
Strong Pass (A)	40.0	40.0	66.7%	2	3%
Pass (B)	34.0	34.0	56.7%	20	30%
Slightly Below Standard (C)	30.6	30.6	51.0%	15	23%
Weak (D)	22.0	22.0	36.7%	23	35%
Showed Little Knowledge (E)	12.0	12.0	20.0%	4	6%
Did Not Attempt (X)	1.0	1.0	1.7%	2	3%
Maximum Mark	44.5	44.5			
Average Mark	30.4	30.4			
Standard Deviation	7.1	7.1			
Coefficient of Variation	0.23	0.23			

Question 2 involved assessing two alternate reinsurance arrangements.

Candidates did better on this question, with a pass rate of 35%.

Markers' comments:

Part (a)

Part (i) was answered generally well, with most candidates able to define non-proportional reinsurance. Very few however managed to state the relative cost and/or availability of non-proportional reinsurance to proportional.

Part (ii): Most candidates described the financial benefit of reinsurance as being reinsurance claims + commissions > reinsurance premiums. Full marks were only awarded if the financial benefit was described in context of a chosen profit metric (for example, return on capital).

Part (iii): Only a very small number of candidates were able to correctly point out the reinsurer's diversification and regulatory/tax arbitrage. A statement that reinsurers charge a profit margin in their premium rates did not score any marks.

Part (b)

This question was surprisingly answered very poorly by the candidates, with only a handful able to calculate the cession rate for a proposed surplus reinsurance arrangement.

A large number of candidates showed serious misunderstanding of how surplus reinsurance works by applying risk premium percentage (60%) to the premiums at nil

retention, whilst applying the $1m retention on reinsurance claims.

Some candidates for the calculation of reinsurance claims under the XYZ surplus arrangement had nil for Yr1 and Yr2, stating that the gross claims are under the $1m retention. It should be noted however, that the question states "expected" gross premiums and claims, in which case an "expected" reinsurance cash flow should be calculated.

Some candidates acknowledged the application of initial commission / selection discount by policy duration assuming 0% lapse (rather than treaty duration) and full marks were awarded for this approach.

Most candidates were able to get full marks for the reinsurance projection for ABC's proposed quota share offer.

Part (c)

This part appeared to be the key differentiator of the candidates.

Most candidates were able to gain easy marks from the obvious differences between the two reinsurance offers, such as cash flow differences, credit rating, capital relief and so on.

However, some of the other obvious points were missed by many candidates, such as profit volatility implications, ease of business relationship, higher level of underwriting and claims support from ABC (due to quota share structure) etc.

Some candidates also seemed to struggle to classify each issue/item under the categories of profit, risk management, capital and other. For example, whilst the credit rating item was awarded marks either as risk management (default risk) or capital, no marks were awarded if credit rating was mentioned under profit unless clearly justified.

Question 3

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	60.0	60.0			
Strong Pass (A)	41.0	41.0	68.3%	3	5%
Pass (B)	32.0	32.0	53.3%	14	21%
Slightly Below Standard (C)	28.8	28.8	48.0%	8	12%
Weak (D)	20.0	20.0	33.3%	27	41%
Showed Little Knowledge (E)	12.0	12.0	20.0%	11	17%
Did Not Attempt (X)	1.0	1.0	1.7%	3	5%
Maximum Mark	46.5	46.5			
Average Mark	26.0	26.0			
Standard Deviation	8.5	8.5			
Coefficient of Variation	0.33	0.33			

Question 3 was a broad question which covered a number of topics, including good practice on a number of aspects of life insurance management, a proposal to extend the definition of terminal illness from one year to two, and a proposal to tighten a trauma definition.

Markers' comments:

Overall we were disappointed with the general standard of responses for this question, which we felt was relatively straightforward and only required an understanding of the different functions of a life company and knowledge on recent topical issues and concepts within the industry.

Part (a)

Common weaknesses that we observed were:

Candidates not answering the full question - a couple of candidates appeared to have skipped discussion on 'product design', and about 20% of candidates did not answer the assessment of current practices.

We found that several candidates were too limited and narrowly focused from an actuarial/pricing/valuations point of view, rather than at a holistic level, in the context of the overall business (CEO / Senior Management).

Part (b)

We would generally expect to see 7 points made for a question that offers 7 marks. Many candidates did not make enough points.

Part (i)

About half of the candidates did not recognise that extending the terminal illness definition is viewed as an accelerated payout and therefore the overall claims cost would not be expected to increase. Some candidates had linear arguments where every observation depended on the previous one which made it difficult to award marks relative to those who offered a broader range of points. Some candidates interpreted the premium movement from the perspective of an individual policyholder rather than at the aggregate business level.

Marks were awarded for points not in the specimen solution including changes to business processes, sales impacts, and reinsurance.

Part (ii)

Only a handful of candidates explicitly mentioned that tightening the definition for existing policies would not be allowed, while a large number of candidates demonstrated a dangerous misunderstanding by suggesting otherwise. The stronger answers covered a wider range of issues. Marks were awarded for points not in the specimen solution including comments on medical advances and definitions as well as operational issues.

COURSE 2B LIFE INSURANCE

1. Summary

1.1. Course Overview

The aim of the 2B Life Insurance Course is to provide the knowledge, skills and judgment necessary for an actuary to tackle a range of management related problems in life insurance relating to valuation techniques, capital management, profit analysis, valuation of a company, reporting of results and professionalism.

1.2. Assessment

The assessment model is broken down into two parts:

Forum Participation	10%
Long Answer Question Exam	90%

1.3. Pass Rates

48 candidates enrolled this semester. Of these, 0 withdrew and 2 did not present, leaving 46 sitting the exam.

It is proposed that 15 candidates be awarded a pass, which implies a pass rate of 33%. Table 1 shows the historical pass rates for this subject:

Table 1 – Course Experience

SEMESTER	SAT	PASSED	PASS RATE
Semester 2 2016	**46**	**15**	**33%**
Semester 1 2016	50	11	22%
Semester 2 2015	50	17	34%
Semester 1 2015	53	21	40%
Semester 2 2014	51	20	39%
Semester 1 2014	60	22	37%
Semester 2 2013	44	17	39%
Semester 1 2013	43	11	26%
Semester 2 2012	43	17	40%
Semester 1 2012	52	13	25%
Semester 2 2011	41	6	15%
Semester 1 2011	41	16	39%

The 33% pass rate for this exam is higher than the 22% pass rate for the previous exam (Semester 1 2016) and in line with the historical average of 32%.

2. Assessment

2.1. Overall Performance

The quality of the submissions to the Forum continues to be very high. It is however surprising to continue to see a handful of candidates not attempting to meet the minimum requirements. In some cases these marks can mean the difference between passing and failing.

The performance in the Long Answer Questions, although better than the previous semester, continues to be variable. As with past semesters, this component covered a range of topics and contained a mix of:

- Spreadsheet work and written responses.
- Sections requiring simple and complex judgement.
- Components that were prescriptive and others that were open (inviting candidates to raise and discuss points in relation to the topic at hand).

This made the questions good discriminators, in particular, when assessing the borderline candidates.

Consistent with previous semesters, some candidates performed very well on one or two of the Long Answer Questions but performed poorly (in some cases very poorly) on the others – lack of time was potentially part of the reason for this. Only a handful of candidates appeared strong across all areas of assessment.

Some candidates were let down by:

- Devoting too much time to certain parts of the exam, leaving them little ability to demonstrate the required knowledge and understanding in other parts.
- Not reading the question correctly – for example discussing an approach to estimate the policy liability for all inforce policies when only new business was asked for.
- Not assessing the reasonableness of the numbers coming out of their calculations.

Many candidates failed to demonstrate an understanding of traditional embedded value, which is a key part of the course. In particular, several candidates did not make any significant progress in performing the analysis of change in value (due to a lack of attempt or an incorrect approach).

The presentation of reasonable arguments to back up conclusions and apply complex judgement was missing in many cases, with the quality of explanations often weak for such candidates.

There is also evidence of lack of knowledge of aspects related to the topical issue of the role of the Appointed Actuary. This falls under the topic of Professionalism (part of the 2B syllabus) which students appear have limited knowledge of.

2.2. Exam Question by Question Analysis

Question 1

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**58.0**	**58.0**			
Strong Pass	40.0	40.0	69.0%	10	22%
Pass	30.0	30.0	51.7%	19	41%
Slightly Below Standard	27.0	27.0	46.6%	5	11%
Below Standard	20.0	20.0	34.5%	7	15%
Weak	12.0	12.0	20.7%	4	9%
Showed Little Knowledge	1.0	1.0	1.7%	1	2%
Did Not Attempt	0.0	0.0	0.0%	0	0%
Maximum Mark	49.5	49.5			
Average Mark	32.0	32.0			
Standard Deviation	9.1	9.1			
Co-efficient of Variation	0.29	0.29			

Question 1 focused on a life company (with only legacy investment-linked business in run-off) that is considering entering the YRT market in Australia. Candidates were asked to perform calculations to understand the forecast profitability, capital requirements and dividend outlook in relation to a new distribution agreement, and explain aspects of this to the CEO of the parent company. Candidates were also required to provide recommendations on how the return on equity of the YRT business could be improved.

Candidates performed very well on this question, with a pass rate of 63%. Most candidates showed a good understanding of the basic concepts assessed in this question. Those who obtained an A grade demonstrated further understanding and attention to detail, particularly in the sections involving complex judgement.

Generally, candidates either did very well or struggled. Most of those who struggled had difficulty with the basics of the projection in part a) and continued to struggle through the remainder of the question, reflecting a lack of basic knowledge.

The majority of candidates were able to correctly determine the BEL and policy liability at the end of the first year of the distribution agreement (or had only very minor errors) for part a), utilising a simple spreadsheet projection.

In part b)i) most candidates identified large upfront costs that need to be recovered from future premium as the reason for the negative liability, but only a few addressed the CEO's concern about policyholders having an obligation to pay the insurance company money.

While almost all candidates could correctly determine the MoS profit gross of tax in part b)ii), it was surprising to see around half the candidates fail to net tax off as requested by the question.

Most candidates could adequately describe why the negative liability is not allowed to be recognised as part of the capital base (part b)iii)) and why target surplus may need to be increased as a result of the new distribution agreement (part b)iii)). However, less than half the candidates provided good reasons and explanations supporting their description.

For part c)i), most candidates did not recognise that the negative liability is capital required (i.e. failed to translate the concept of new business strain into the net assets required to be held). Surprisingly, many candidates recognised the Operational Risk Charge calculation and wrote down the correct formula but either substituted values incorrectly in the formula or used the formula inaccurately in some way (the most common error was omitting the premium growth component from the calculation).

Most candidates recognised in part c)ii) that the underlying reason YRT products can have no Insurance Risk Charge is high profitability, but many failed to explain this further in terms of the stressed first year cash flows and stressed adjusted policy liability at the end of the first year.

Parts c)iii) (estimating the dividend capacity) and d)i) (calculating the return on equity) were poorly done in general, consistent with not recognising the capital impact of new business strain in part c)i).

The answers to part d)ii) (suggestions to improve the return on equity in the short term) were mixed. Most candidates made valid suggestions (although some would only improve the return on equity in the medium term) and were able to list out advantages and disadvantages, but only a few outlined key suggestions (such as reinsurance). Some candidates failed to address the question by not explaining why the return on equity would improve as a result.

For part d), most candidates neglected to use a memo format as requested by the question.

Question 2

	Marks Required	**Weighted Marks Required**	**% of Total Marks**	**Number of Candidates**	**Proportion of Candidates**
Total Marks Available	**68.0**	**68.0**			
Strong Pass	53.0	53.0	77.9%	4	9%
Pass	41.5	41.5	61.0%	14	30%
Slightly Below Standard	37.4	37.4	54.9%	5	11%
Below Standard	31.0	31.0	45.6%	12	26%
Weak	21.0	21.0	30.9%	6	13%
Showed Little Knowledge	1.0	1.0	1.5%	4	9%
Did Not Attempt	0.0	0.0	0.0%	1	2%
Maximum Mark	61.5	61.5			
Average Mark	37.1	37.1			
Standard Deviation	12.4	12.4			
Co-efficient of Variation	0.34	0.34			

Question 2 focused on the sale of a life company with a closed book of annuities that are in loss recognition. Candidates were asked to calculate the traditional embedded value (EV) of the company based on a set of assumptions. They were then required to explain to the CEO of a potential buyer what is driving the size of the EV, and what changes to the assumptions or allowances in the calculation can be made to increase the EV (to allow the CEO to make a higher offer for the company). Candidates were also asked to consider the effect of target surplus on their calculation, as well as perform and explain an analysis of change in the EV after the bidding process was delayed by a year.

This question was generally answered fairly well, with a pass rate of 39%, though the quality of the answers was variable – indicating that this question was a good discriminator. Most candidates showed a basic understanding of the calculation of EV in the first half of the question, but only some candidates managed to make progress in the latter half of the question (including the analysis of change) which involved complex judgement.

The majority of candidates were able to calculate the Adjusted Net Worth (ANW) in part a)i) with only minor errors. It was pleasing to see several candidates who obtained unreasonable results (e.g. negative net assets or a very large ANW) point this out, however some did not.

The bulk of candidates made some form of error with the calculation of the Value of Inforce Business (VIF) in part a)ii). While candidates typically knew to determine the present value of distributable profits, there were a wide variety of inaccuracies in executing this (e.g. not taking into account the change in policy and not applying the investment return rate to the policy liability at the beginning of the period). Most candidates missed out on applying tax appropriately (e.g. incorrectly applying tax to the release of capital). A number of candidates were confused by the fact that the annuities were in loss recognition and so thought there would be no distributable profits.

In part b)i), very few candidates described the two main components driving the EV. Many candidates understood the release of capital was a main driver, however very few candidates realised that the assumed investment earning rate exceeding the policy liability discount rate was the other.

Almost all candidates made at least one valid suggestion in part b)ii) of assumption changes that can increase the EV. Better candidates were able to describe why this caused an increase, and what needed to be considered before making the change. A few candidates brought up mortality improvement, not realising that introducing this would decrease the EV determined. While some candidates brought up expense synergies post acquisition, very few many candidates raised the other key point of capital benefits to the potential buyer (who writes YRT business) of the annuity portfolio.

Most candidates successfully allowed for target surplus in the calculations (or had only minor errors) in part c)i) and noted this meant there was less free capital available to be distributed in part c)ii). Some candidates did not expect a negative ANW, while the better candidates were able to describe this meant a capital injection would be needed post-acquisition. Calculation errors in previous parts of the question meant some candidates did not obtain a negative ANW (per the solution), but credit was still given for describing what the reduction in ANW meant.

The calculation of the analysis of change in part d)i) was a good discriminator of candidates. Only a handful of candidates were able to display a full analysis of change with all relevant components. Candidates struggled, even with determining the impact of the expense experience variance over the year. Good candidates were able to show the first few impacts of the investment return assumption change, VIF decreasing by distributable profit and ANW increasing by a corresponding amount. Time may have been an issue, with many candidates only completing part of the analysis only. However it was clear many candidates did not understand how to perform the analysis of change.

A significant number of candidates didn't attempt part d)ii) which asked for an explanation of the movement in the EV. Many were able to set out an appropriate style of e-mail, but typically the commentary was limited to what the candidate had been able to demonstrate in part d)i). While candidates who did not attempt part d)i) could have scored marks here by describing the expected movement in each EV component as a result of the changes, few did.

Question 3

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**54.0**	**54.0**			
Strong Pass	29.5	29.5	54.6%	2	4%
Pass	24.0	24.0	44.4%	9	20%
Slightly Below Standard	21.6	21.6	40.0%	3	7%
Below Standard	12.5	12.5	23.1%	12	26%
Weak	7.0	7.0	13.0%	8	17%
Showed Little Knowledge	1.0	1.0	1.9%	10	22%
Did Not Attempt	0.0	0.0	0.0%	2	4%
Maximum Mark	33.5	33.5			
Average Mark	14.7	14.7			
Standard Deviation	9.3	9.3			
Co-efficient of Variation	0.63	0.63			

Question 3 focused on a small life company which only performs policy liability valuations for financial reporting quarterly, but is now required to do so monthly. Candidates were asked to come up with an approach to estimate the policy liability for new business written since the end of the previous quarter without using the usual quarterly valuation process (which utilises a projection model and full policy data extract). They were also asked to provide sources of data, approximations and disadvantages associated with their approach.

In addition, the candidates were asked to explain the effects of a previous error in stamp duty payments, and describe why new business profits would be similar to budget even when sale volumes differed to those expected. The question concluded by asking candidates to briefly comment on proposed changes affecting the role of the Appointed Actuary.

Overall, this question was intended to be relatively straight-forward, however, the responses received were generally poor, with a pass rate of 24%. The question was a good discriminator, however it appears time may have been an issue meaning candidates typically did not complete the question in full (due to being the last question on the paper).

For part a)i), a number of candidates did not answer the question posed (which asked for a method to estimate new business since the previous quarter-end) – rather describing how to roll forward the inforce book. Candidates generally outlined an approach, but only a few went on to describe the key components.

Many candidates did not suggest the accumulation method, with some even suggesting this was not suitable (as the business was not group risk) which highlighted a lack of understanding of valuation approaches. Better candidates included a discussion on claims reserves. Surprisingly, some candidates did not structure their answer appropriately and so missed out on the mark awarded for language and formatting. Some candidates came up with an approach which utilised the projection model, but made use of grouping or approximating model points, which was given credit.

Candidates generally struggled with the rest of part a). While some sources of data, approximations, disadvantages and mitigants were identified, few were able to be specific around how they relate to the components from part a)i) or were too generic (e.g. "source form Finance"). Several candidates did not attempt this part of the question.

For part b), most candidates did not include discussion around whether the stamp duty was acquisition related. Some candidates misinterpreted the question as relating to the stamp duty assumptions used in the projection model, while others confused stamp duty with income tax. Several candidates correctly noted that prior year profits may need to be restated if the error is material.

In part c), most candidates conveyed that the approximate monthly process would have no impact on the year end, however very few candidates answered why large differences in the size of the new business policy liability compared to budget may not translate into large profit differences. The key points around new business profit being small in absolute terms compared to the residual inforce and that the size of the policy liability is linked to the size of the large initial cash outflows (and so volumes) were largely missed. This part of the question differentiated candidates who understood the underlying mechanics of policy liability valuations, and those who didn't.

Part d) was poorly answered, considering it covered Professionalism and the role of the Appointed Actuary. The question was open for candidates to discuss a wide range of relevant points around the FCR and conflicts of interest. Around half the candidates either made a very limited attempt at the question or left it blank, possibly due to running out of time (and being the last part of the exam). Candidates had difficulty conveying an understanding of managing conflicts of interest for Appointed Actuaries, with many neglecting to mention certain dual hatting that is not allowed. Generally candidates mentioned existing FCR requirements but not many understood it well enough to compare it to the ILVR requirements described in the question.

COURSE 3A GENERAL INSURANCE

1. Summary

1.1 Course Overview

The aim of the 3A General Insurance Course is to provide the knowledge, skills and judgment necessary for an actuary to tackle a range of problems in general insurance relating to products, accident compensation schemes, valuation techniques, accounting and management information.

1.2 Assessment

The assessment model is broken down into two parts:

Forum Participation	10%
Long Answer Question Exam	90%

1.3 Pass Rates

95 candidates enrolled this semester. Of these, 4 withdrew and 1 did not present, leaving 91 sitting the exam.

It is proposed that 21 candidates be awarded a pass, which implies a pass rate of 22.8%. Table 1 shows the historical pass rates for this subject:

Table 1 – Course Experience

SEMESTER	SAT	PASSED	PASS RATE
Semester 2 2016	**91**	**21**	**23%**
Semester 1 2016	106	35	33%
Semester 2 2015	82	23	28%
Semester 1 2015	90	28	31%
Semester 2 2014	76	15	20%
Semester 1 2014	66	17	26%
Semester 2 2013	76	14	18%
Semester 1 2013	96	31	32%
Semester 2 2012	96	29	30%
Semester 1 2012	103	29	28%
Semester 2 2011	78	18	23%
Semester 1 2011	76	24	33%

The 22.8% pass rate for this exam is lower than the pass rates for the past 3 exams which were centred around 30%. Many candidates seemed to struggle to obtain marks where they were required to apply their judgement to their specific situation.

2. Assessment

2.1 Overall Performance

Overall student performance on the exam was worse than was expected. The exam was scrutineered by an average passing candidate who did comment that the exam was a bit

long. The exam length was significantly reduced but a number of candidates did seem to struggle with time.

Following the poor performance on the BF method last semester, we again included a BF question. The performance on this was improved but there were still a surprising number of candidates who did not know how to use this method.

Unusually, the pass rate across all questions was quite consistent with the pass rates being 29%, 24% and 22% respectively. Question 3 was a very strong discriminator of performance with 18 of the 21 candidates who passed the exam passing the question and only 2 of 70 candidates who failed the exam passing the question.

2.2 Exam Question by Question Analysis

Question 1

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**60.0**	**60.0**			
Strong Pass	32.0	32.0	53.3%	3	3%
Pass	26.0	26.0	43.3%	23	25%
Slightly Below Standard	23.4	23.4	39.0%	13	14%
Below Standard	18.0	18.0	30.0%	19	21%
Weak	12.0	12.0	20.0%	24	26%
Showed Little Knowledge	1.0	1.0	1.7%	9	10%
Did Not Attempt	0.0	0.0	0.0%	1	1%
Maximum Mark	33.0	33.0			
Average Mark	20.2	20.2			
Standard Deviation	7.1	7.1			
Co-efficient of Variation	0.35	0.35			

This question was about a workers compensation portfolio in the mythical country of Kumaruandi that has just gone into run-off. The question addressed the appropriateness of valuation methodologies and the impact of running-off the portfolio on future provisions.

Overall, this question was reasonably well answered. Stronger answered parts of the question were around commentary on the analyst's choice of factors for the PCE method and the assessment of uncertainty and volatility. Candidates struggled on the sections around the impact on claims handling expenses and risk margins of the portfolio going into run-off and investigations to be performed before finalising the provision.

Part a):

This part required knowledge of the different actuarial projection techniques and how they would apply to the valuation required. Several candidates justified the use of the PCE method, but could not explain why it was preferred over the other methods specified. Marks were awarded for the explanation given against each technique, and few marks were awarded for blanket generalisation. The average mark for this question was 1/2.

Part bi):

This question required knowledge of how the PCE method deals with inflation. Where candidates decided a super-imposed inflation adjustment was required, then to receive marks they had to also make it clear that it was in addition to the inflation that would be inherently projected forwards by the PCE method. This was poorly answered with most candidates not realizing that the PCE method inherently assumes a superimposed inflation rate and the average mark for this question only 0.2/1.

Part bii):

The majority of candidates noted the anomaly in the triangulation statistics and were able to provide good commentary on the analyst's choice of factors. The better candidates were able to differentiate themselves by paying particular attention to the tail of the distribution. The average mark for this question was 1.2/3.

Part biii):

In order to answer this question, general knowledge of the impact of going into run-off was required. Note also that marks were awarded for a statement disagreeing with the CFO. Hence, as part of exam technique, candidates should consider potential marks for parts of the question asked that they may be able to answer independently of earlier parts. The average mark for this question was 0.7/2.

Part biv):

Few candidates recalled that the situation revolves around a long-tailed class of business that has recently gone into run-off. Hence the book is not in a steady-state and the respective proportions of future claims handling expenses will change. The average mark for this question was 1/3.

Part bv):

Marks were awarded where a clear and logical justification was presented. Few marks were awarded where claims drivers were put forward without the support of potential real-life scenarios that could lead to such increases. The average mark for this question was 1/2.

Part bvi):

This part was poorly answered as many candidates were unable to relate their suggestions back to the situation outlined in the question. Those candidates who scored well had thought about the key risks in valuing this portfolio, particularly its long-tailed nature. The average mark for this question was 0.9/4.

Part c):

This question was especially difficult for those candidates unfamiliar with the concept of payment years and discounting. The question required careful reading to derive exactly what was asked. Several candidates did not read and understand the provision required before attempting their calculations, and were subsequently awarded few, if any, marks.

Marks were also awarded where the required provision was calculated incorrectly, but then correctly applied in the bank-guarantee calculation. Hence, candidates should be aware, as part of good exam technique, that marks are available for later (and potentially simpler) parts of the question, despite not successfully completing an earlier part. The average mark for this question was 2.2/7.

Part di):

The concept of both IBNR and IBNER should be well understood by candidates. In order to gain marks for this question, a short explanation of what each represents should be given

(particularly given the audience, the CFO). Marks were available for making specific comments on large and latent claims, both of which are of particular interest in a run-off portfolio, however very few students were awarded these marks. The average mark for this question was 1/3.

Part dii)

Generally poorly answered by candidates. Few candidates adequately explained the sources of uncertainty inherent within this class of business, rather providing textbook answers that were not related to the question. Candidates should have recognised the concerns of the CFO, namely profits and losses. Few candidates adequately explained (in a manner appropriate to the audience, i.e. the CFO) that the risk margin would merely result in a delay in the release of profits, providing future claims experience matched the central estimate projection. The average mark for this question was 1.1/3.

Question 2

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**60.0**	**60.0**			
Strong Pass	36.0	36.0	60.0%	3	3%
Pass	28.5	28.5	47.5%	19	21%
Slightly Below Standard	25.7	25.7	42.8%	10	11%
Below Standard	18.0	18.0	30.0%	33	36%
Weak	12.0	12.0	20.0%	20	22%
Showed Little Knowledge	1.0	1.0	1.7%	6	7%
Did Not Attempt	0.0	0.0	0.0%	1	1%
Maximum Mark	42.3	42.3			
Average Mark	22.8	22.8			
Standard Deviation	8.0	8.0			
Co-efficient of Variation	0.35	0.35			

The question places candidate into the role of an external consulting actuary providing actuarial advice to on an insurer's householders and CTP lines of business. The first part explores several reserving methodologies and their underlying principles and assumptions; the second part includes some qualitative calculations along with a review of a proposed underwriting remuneration structure; and the last section related to the performance of the CTP portfolio.

The quality of answers was diverse, for both the qualitative and quantitative sections. Exam technique, in particular answering what the question asked for, proved to be very important. It seemed like most candidates allocated sufficient time to attempt the first two parts of this question, with less detailed responses provided in part c). The sections of the questions involving complex judgement were not well answered.

Part ai):

Many candidates jumped straight to evaluating the methods without appreciating that the methods described only calculated IBNR and IBNER. Nonetheless, marks were

awarded for answers relating to assumption around case estimates in the methods including points raised in part ii). The average mark for this question was 1.5/3.

Part aii):

Candidates who scored higher clearly laid out the strengths and weakness of each method, followed by their recommendation on usage, along with clear reasons. Very few candidates were able to identify and articulate the impact of the natural catastrophe on case estimates and the three methods. The average mark for this question was 2.5/5

Part bi):

This part involved completing a management report including an allocation of IBNR by region. The simple concept around calculation of NEP, loss ratio, prior/current year, and contribution of movement in OSC to underwriting profit were well answered. However, the allocation of reserves, which included a catastrophe isolated in one region, was generally handled poorly, with few students justifying the reasoning behind their allocation methodology. The average mark for this question was 2.5/5

Part bii):

This part required candidates to provide suggestions to improve the management report for the purpose of supporting underwriting bonuses. Most candidates raised the obvious impact of catastrophes but few suggested robust ways to address it. Few candidates identified other issues such as prior year movements, expenses or the rough IBNR allocation method they implemented in part i). Most answers were too brief for a 5-mark question, with the average mark being 1/5.

Part ci):

This part required candidates to critique the use of demerit points as a sole rating factor and outline the impact of including other rating factors. Most students were able to critique the rating structure but better students considered the impact from varying perspectives such as the policyholder, regulator and insurer. The average mark for this part was 1.6/4.

Part cii):

This part required students to suggest the four rating factors to be added to the pricing structure, why, and any potential issues around implementation. Candidates generally did well at listing four rating factors, and then describing how these affect riskiness. However, a lot of candidates neglected to describe data collection or the issues/implications associated with including these factors in sufficient detail. The average mark for this part was 1.8/4.

Part ciii)

This part was difficult for most candidates with few demonstrating an understanding of the implications of exiting the CTP market. Few answers provided sufficient points for a 4-mark question. The average mark for this part was 1/4.

Question 3

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**60.0**	**60.0**			
Strong Pass	36.0	36.0	60.0%	9	10%
Pass	30.0	30.0	50.0%	11	12%
Slightly Below Standard	27.0	27.0	45.0%	5	5%
Below Standard	20.0	20.0	33.3%	28	30%
Weak	12.0	12.0	20.0%	26	28%
Showed Little Knowledge	1.0	1.0	1.7%	12	13%
Did Not Attempt	0.0	0.0	0.0%	1	1%
Maximum Mark	43.0	43.0			
Average Mark	21.6	21.6			
Standard Deviation	9.6	9.6			
Co-efficient of Variation	0.44	0.44			

The question was on reserving and reinsurance, aimed to test standard methodologies. Split into two parts, the first part of the question was on reserving for a mixed short tail portfolio. The second part of the questions was on reinsurance recoveries for a commercial portfolio protected by multiple reinsurance treaty arrangements.

This question was not answered well by most candidates with many struggling to carry out standard calculations for the BF method and surplus reinsurance. As this was the last question in the exam, it was apparent that many candidates ran out of time whilst performing the calculations.

Part ai):

This part related to the calculation of an Outstanding Claims Liability using the Paid Chain Ladder method. The question was generally well answered with most candidates being able to perform standard calculations whilst taking into account issues highlighted by the data. The average mark on this part was 3.5/6.

Part aii):

This part related to the use of a BF method. Although the BF method was better used than in the previous semester, a surprising number of candidates were not able to use the method correctly. The average mark on this part was 1.7/3.

Part aiii):

This part related to the selection between the BF and the Paid Chain Ladder method at two different valuation dates. This question was poorly answered with many students misunderstanding what was being asked. This included candidates recommending new methods or looking at the application of the methods for different accident periods. Many candidates provided generic comparisons of the Paid Chain Ladder and BF method without considering the specifics of the situation. The average mark on this part was 0.3/4.

Part aiv):

This part asked for some key modifications that could be made to the valuations to achieve a more accurate reserve. This was generally not well answered with many candidates missing very easy marks here. The average mark on this part was 1/4.

Part b):

This part asked the candidate to calculate reinsurance recoveries through a number of reinsurance contracts on a number of claims. Most candidates struggled to be able to calculate the surplus recoveries and many students then did not attempt the later parts of the question. The average mark on this part was 2.5/9.

Part c):

This part required students to describe how different reinsurance contracts would impact a particular portfolio and to recommend a particular contract. Some candidates qualified their answers to the extent that it could not be determined if no recommendation was being made and as such easy marks were lost. Good answers gave an example, relative to the context of the question, about why a type of reinsurance was or was not appropriate. The average mark on this part was 1.9/5.

COURSE 3B GENERAL INSURANCE

1. Summary

1.1. Course Overview

The aim of the 3B General Insurance Course is to provide the knowledge, skills and judgment necessary for an actuary to tackle a range of management related problems in general insurance relating to the pricing of all general insurance products, as well as capital management and financial condition reporting.

1.2. Assessment

The assessment model is broken down into two parts:

Forum Participation	10%
Long Answer Question Exam	90%

1.3. Pass Rates

77 candidates enrolled this semester. Of these, 1 withdrew and 1 did not present, leaving 75 sitting the exam.

It is proposed that 27 candidates be awarded a pass, which implies a pass rate of 36%. Table 1 shows the historical pass rates for this subject:

Table 1 – Course Experience

SEMESTER	SAT	PASSED	PASS RATE
Semester 2 2016	**75**	**27**	**36%**
Semester 1 2016	55	17	31%
Semester 2 2015	54	20	37%
Semester 1 2015	54	20	37%
Semester 2 2014	63	23	37%
Semester 1 2014	61	16	26%
Semester 2 2013	64	17	27%
Semester 1 2013	62	22	35%
Semester 2 2012	69	26	38%
Semester 1 2012	71	27	38%

The 36% pass rate is higher than the 31% pass rate for the previous exam and in line with the historical average. Candidates had a good course knowledge and were able to apply it to the course reasonably.

2. Assessment

2.1. Overall Performance

- The raw marks for this semester were slightly lower compared to last semester, reflecting three reasonably differentiating questions. In the prior exam one question was considered relatively easy.
- The highest mark was 139, which was lower than last semester's 149.

- Online participation mark average of 8.5/10 was similar to last semester. It is pleasing to see candidates continue to make good use of the online learning resource for the course.

- All three questions proved to be good differentiators of candidates with a reasonable spread of results.

- Candidates generally finished the exam which seemed to be manageable within the time given and had a good spread of knowledge and judgement elements.

2.2. Exam Question by Question Analysis

Question 1

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**64.0**	**57.6**			
Strong Pass	47.0	42.3	73.4%	7	9%
Pass	40.0	36.0	62.5%	22	29%
Slightly Below Standard	36.0	32.4	56.3%	19	25%
Below Standard	28.0	25.2	43.8%	18	24%
Weak	8.0	7.2	12.5%	8	11%
Showed Little Knowledge	1.0	0.9	1.6%	0	0%
Did Not Attempt	0.0	0.0	0.0%	1	1%
Maximum Mark	53.8	48.4			
Average Mark	37.1	33.4			
Standard Deviation	8.6	7.7			
Co-efficient of Variation	0.23	0.23			

Candidates performed reasonably well on this question, with a pass rate of 37%. The question was well answered and the selected pass rate was reflective of performance on the judgement based elements with candidates able to obtain a c) largely with knowledge elements.

This question was based on LMI and a proposed new value protection policy for residences. It included a section an FCR and corporate governance
The question tested a number of different areas (product design, portfolio management, FCR, capital management, management structure) and it gives candidates plenty of opportunities to showcase knowledge.

- Part (a): A number of candidates appeared that they would have answered the question correctly but have mixed up the usage of the terms "mortgagee" and "mortgagor". These candidates lost some marks as a result in what was a well performing section.

- Part (b): Candidates did not consistently provide sufficient points to meet the expected coverage

- Part (c): Some candidates' answers were out of context as they have listed out potential issues with the products but have not addressed issues specifically related to product design.

- Part (d): Some candidates only discussed the standalone impact of the PPI product on company only but have not addressed the potential issues related to the unique situation of having both LMI and PPI as the two major portfolios for the company.

- Part (e): It is considered a challenging question in that some candidates seemed to have spent a lot of time on it but were not able to articulate the key issues with current capital position. Some candidates merely listed out what needs to be covered in the FCR which was not sufficient given the situation being presented. Some candidates highlighted a few figures from the financial statements but were not able to specifically point out and demonstrate that they recognised there is a breach. This question is considered a differentiator between candidates who have the knowledge relative to candidates who could apply their knowledge and the ability to address key issues in the question.

- Parts (f) and (g): Some candidates seemed to have run out of time after part (e). They were unable to demonstrate their knowledge or understanding regarding issues surrounding impacts on capital.

- Part (h): Similar to part (b), for this 3-mark question, some candidates might either have run out of time or they have only listed out 3 points.

  A majority of candidates were able to attempt all parts of the question.

Question 2

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**66.0**	**59.4**			
Strong Pass	38.0	34.2	57.6%	5	7%
Pass	30.0	27.0	45.5%	21	28%
Slightly Below Standard	27.0	24.3	40.9%	13	17%
Below Standard	22.0	19.8	33.3%	22	29%
Weak	12.0	10.8	18.2%	13	17%
Showed Little Knowledge	1.0	0.9	1.5%	0	0%
Did Not Attempt	0.0	0.0	0.0%	1	1%
Maximum Mark	41.5	37.4			
Average Mark	27.1	24.4			
Standard Deviation	7.1	6.4			
Co-efficient of Variation	0.26	0.26			

Candidates performed reasonably well on this question, with a pass rate of 40%.

This question was based on changes to motor insurance caused by introduction of driverless cars.

Part a) asked about the impacts to incumbent insurers of rapid premium loss and better candidates were able to discuss this impact.

Parts b) and c) were a mix of calculations and discussing a rating approach to car insurance.

Part d) was an 8 mark question and asked candidates to discuss an overall approach to developing a rating model from a specific given scenario. This was particularly poorly done with very weak overall results. Candidates appeared to struggle with the nature of the question which guided them through this in three parts.

Part e) was a straight forward knowledge application and was done well

Part f) required candidates to revise premiums and discuss policy design and required more judgement and again was not well done.

Question 3

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**70.0**	**63.0**			
Strong Pass	48.0	43.2	68.6%	5	7%
Pass	38.0	34.2	54.3%	25	33%
Slightly Below Standard	30.6	27.5	43.7%	26	35%
Below Standard	20.0	18.0	28.6%	16	21%
Weak	12.0	10.8	17.1%	2	3%
Showed Little Knowledge	1.0	0.9	1.4%	0	0%
Did Not Attempt	0.0	0.0	0.0%	1	1%
Maximum Mark	51.5	46.4			
Average Mark	35.1	31.6			
Standard Deviation	8.8	8.0			
Co-efficient of Variation	0.25	0.25			

Candidates performed reasonably well on this question, with a pass rate of 40%.

This question was based on reinsurance and based around an island resort with a number of catastrophe claims. Candidates scored good marks for all question parts other than (e), (f) and (g) which were challenging.

Part (e) required candidates to show insight and to exercise judgement however was poorly answered possibly due to the content of the question being slightly unusual which may have thrown candidates.

Part (f) asked candidates to describe the methods used to rate a layer of reinsurance program and was generally a difficult question for candidates to gather marks. Many candidates struggled to consider how this would vary from experience rated coverage.

Part (g) asked why a 2nd resort's premium would differ from a comparable property and was a differentiator in terms of candidate's capability.

Part {c} 'pro rata as to amount' may have confused candidates. A number had this correct however many candidates approach was not correct to this knowledge element. This question was probably too specific and could have been improved by using more common terms.

Part (h) asked candidates to consider how to manage premium and a number of candidates missed out on not discussing the tradeoff between extra risk taken on to the need and cost of extra capital and increased risk of company failure

Many also did not know what a rate of line is and some just missed answering this element

COURSE 5A INVESTMENT MANAGEMENT AND FINANCE

1. Summary

1.1. Course Overview

The aim of the 5A Investment Management and Finance Course is to provide the knowledge, skills and judgment necessary for an actuary to tackle a range of management related problems in investment and finance relating to analysis of accounting information, valuation of debt securities, equity markets and portfolio management, company valuation and asset allocation.

1.2. Assessment

The assessment model is broken down into two parts:

Forum Participation	10%
Long Answer Question Exam	90%

1.3. Pass Rates

43 candidates enrolled this semester. Of these, none withdrew and none did not present, leaving 43 candidates sitting the exam.

It is proposed that 27 candidates be awarded a pass, which implies a pass rate of 62.8%. Table 1 shows the historical pass rates for this subject:

Table 1 – Course Experience

SEMESTER	SAT	PASSED	PASS RATE
C5A Semester 2 2016	**43**	**27**	**63%**
C5B Semester 1 2016	34	4	12%
C5A Semester 2 2015	49	10	20%
C5B Semester 1 2015	24	15	63%
C5A Semester 2 2014	32	17	53%
C5B Semester 1 2014	24	7	29%
C5A Semester 2 2013	41	21	51%
C5B Semester 1 2013	37	21	57%
C5A Semester 2 2012	30	17	57%

The 63% pass rate for this exam is higher than the 20% pass rate for the previous exam (Semester 2 2015) and slightly higher than the historical average. Candidates seemed to have good course knowledge and the ability to use that knowledge in a way that is relevant to the question.

2. Assessment

2.1. Overall Performance

Overall performance was pleasing and this is reflected in the percentage of recommended passes. Forum participation was at the required standard for 88% of the students.

In the 2015 Chief Examiner's report it was stated :

"With the benefit of hindsight there are two lessons that can be drawn from the difficulties that were experienced both answering and subsequently assessing the answers to the first long answer question. There would have been advantages in providing more guidance to the candidates in following the logical path through the answer to the question and there would have been advantages to the markers and the examiners from providing a significantly more detailed marking guide. "

These lessons were reflected in the design of this year's examination paper and in the detailed guidance provided to markers.

2.2. Exam Question by Question Analysis

Question 1

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**80.0**	**72.0**			
Strong Pass (A)	60.0	54.0	75.0%	13	30%
Pass (B)	52.0	46.8	65.0%	15	35%
Slightly Below Standard (C)	46.8	42.1	58.5%	6	14%
Below Standard	36.0	32.4	45.0%	5	12%
Weak (D)	28.0	25.2	35.0%	4	9%
Showed Little Knowledge (E)	1.0	0.9	1.3%	0	0%
Did Not Attempt (X)	0.0	0.0	0.0%	0	0%
Maximum Mark	68.0	61.2			
Average Mark	54.0	48.6			
Standard Deviation	9.7	8.7			
Coefficient of Variation	0.18	0.18			

- Candidates performed well on this question, with a pass rate of 65%.
- The question related to the understanding and interpretation of financial statements.

Candidates were presented with Statements of Financial Performance and Position for the two years 2014 and 2015 for a company, HDS.

Part a): Candidates were required to comment on the reported financial performance in 2015 and to make deductions regarding actions taken by company management.

This part was typically well answered by candidates.

Part (b): Candidates were required to comment on the 2015 financial position, on apparent HDS business strategy and on how the timing of any associated business activities might be investigated.

This part was also typically well answered.

Candidates were then presented with the corresponding cash flow statements.

Part (c): Candidates were required to explain the relationship between a statement of cash flows and the corresponding statements of financial performance and financial position.

This part was also typically well answered.

Candidates were provided with cash flow reconciliation information at summary and at detail levels.

Part (d): Candidates were asked to give possible reasons for the differences between profit and cash flows, shown in the summary.

Although most candidates were able to identify the timing differences between cash and profit, few candidates were able to draw the link to the client context (e.g. new client inventory would not be included in profits).

Part (e): Candidates were required to describe operating, financing and investing activities and to state the main points that could be drawn from the supplied detailed reconciliation of cash flow between these activities.

Most candidates were able to define operating, financing and investing activities. The better candidates were able to answer this part in the context of the question.

Candidates were provided with a graph of the price and trading history of HDS shares. The graph showed a plunge in price associated with a spike in volume.

Part (f): Candidates were required to present possible reasons for this behavior and to calculate NAV and to compare it with the share price.

This part of the question tested more complex judgement and separated the better candidates from the rest.

Part (g): Candidates were required to discuss the valuation methodology that they would adopt to derive a fair value of the company at the reporting date.

Most candidates showed a good knowledge of the various valuation techniques. The better candidates recognized that the company no longer had predictable cash flows and so that the Discounted Cash Flow method was not appropriate.

Question 2

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**70.0**	**63.0**			
Strong Pass (A)	35.0	31.5	50.0%	10	23%
Pass (B)	25.0	22.5	35.7%	14	33%
Slightly Below Standard (C)	22.5	20.3	32.1%	3	7%
Below Standard	19.0	17.1	27.1%	4	9%
Weak (D)	15.0	13.5	21.4%	7	16%
Showed Little Knowledge (E)	1.0	0.9	1.4%	4	9%
Did Not Attempt (X)	0.0	0.0	0.0%	1	2%
Maximum Mark	42.5	38.3			
Average Mark	25.7	23.1			
Standard Deviation	9.8	8.8			
Coefficient of Variation	0.38	0.38			

Candidates performed well on this question, with a pass rate of 56%.

The question related to the construction and use of multifactor models.

Part (a): Candidates were required to discuss the assumption that the performance of an individual stock can be adequately modelled by reference to financial factors alone.

Most candidates answered this part well.

Part (b): Candidates were required to discuss the role of intermediate goods in multifactor modelling from the point of view of estimating exposures or impact.

Again most candidates answered this part well.

Part (c): Candidates were asked for what inputs is exposure normally available from publically available information and what should be done to assess the impact of other input factors.

Again this was generally well answered.

Part (d): Candidates were required to describe how they would go about constructing a multifactor model, illustrating their answer by reference to driverless cars and the automotive industry. They were asked to distinguish between physical inputs and technology as an input factor and to identify the major uncertainties that apply.

This part of the question received noticeably better answers from the stronger candidates. This was particularly so with regard to the treatment of technology as an input in this context.

Parts (e) and (f): These parts dealt with the identification of statistical issues emerging from the use of multiple alternative multifactor models and with from the construction of more general combined models and the estimation of their parameters.

Most candidate responses to these parts were relatively weak and some showed signs of not having carefully read the question.

Part (g): Candidates were required to discuss the meaning and application of a benchmark in the context of the whole economy.

Most candidates produced reasonable "pros" and "cons" for such a benchmark.

Question 3

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**50.0**	**45.0**			
Strong Pass (A)	33.0	29.7	66.0%	10	23%
Pass (B)	28.5	25.7	57.0%	15	35%
Slightly Below Standard (C)	25.7	23.1	51.3%	3	7%
Below Standard	23.0	20.7	46.0%	6	14%
Weak (D)	15.0	13.5	30.0%	6	14%
Showed Little Knowledge (E)	1.0	0.9	2.0%	3	7%
Did Not Attempt (X)	0.0	0.0	0.0%	0	0%
Maximum Mark	43.0	38.7			
Average Mark	27.9	25.1			
Standard Deviation	8.0	7.2			
Coefficient of Variation	0.29	0.29			

Candidates performed well on this question, with a pass rate of 58%.

This question related to negative interest rates.

Part (a): The candidate is asked how negative interest rates can be engineered, how do they stimulate economic growth, apart from economic growth are there any other reasons for wanting them, and what consequences might they have.

Most candidates answered this part well.

Part (b): The candidate is asked to discuss the possibility of negative interest rates for Australia in the next few years.

Again most candidates answered this part well.

Part (c): Candidates were asked whether negative interest rates rely on money illusion and whether it can be sustained or successful.

Only a few candidates answered the first question, regarding money illusion, well, however many candidates gave good answers to the second question regarding sustainability.

Part (d): Candidates were asked to explain how negative cash rates have impacted long dated bond yields in the Eurozone.

This part was generally well answered.

Part (e): Candidates were asked how they would incorporate the possibility of negative interest rates into asset class assumptions in the context of liabilities which can be either inflation linked or not. Candidates were also asked to consider the implications for a specific interest rate model and for asset modeling in general.

Most candidates gave reasonable or good answers to this part, with a few candidates giving outstanding responses.

Part (f): Candidates were asked to specify the likely consequences of allowing for negative interest rates in asset allocation models.

This part was generally well answered.

COURSE 6B GLOBAL INCOME RETIREMENT SYSTEMS

1. Summary

1.1. Course Overview

The aim of the GRIS 6B course is to provide the knowledge, skills and judgement necessary for an actuary to effectively tackle a range of issues as retirement income systems evolve away from group-based defined benefit schemes to individual defined contribution plans. The changing context has significant implications for product design, risk management and how scheme members are communicated with [sic]. Actuaries need the skills and knowledge to help design and manage schemes to best meet members' individual retirement income needs.

1.2. Assessment

The assessment model consists of two components:

Online Forum Participation 10%

Long Answer Question Exam 90%

1.3. Pass Rates

16 candidates enrolled this semester; of these, 0 withdrew and 1 was absent from the exam, meaning that 15 candidates sat the exam.

It is proposed that 5 candidates be awarded a pass, which implies a pass rate of 33%.

Table 1 – Course Experience

GRIS	Course A Semester 1			Course B Semester 2		
Year	Sat	Passed	Pass Rate	Sat	Passed	Pass Rate
2016	17	7	41%	15	5	33%
2015	21	10	48%	17	7	41%
2014	15	9	60%	11	7	64%
2013	19	8	42%	17	7	41%
2012	16	5	31%	14	3	21%
2011	18	9	50%	8	5	63%
2010	16	4	25%	13	7	54%
2009	14	5	36%	19	10	53%

2 Assessment

2.1. Overall Performance

- Each of the 3 marker pairs commented that they thought their LAQ was relatively easy and yet the marks awarded on the whole were poor. This resulted in a relatively low pass mark for this subject.

2.2. Exam Question by Question Analysis

Question 1

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**40**	**60**			
Strong Pass (A)	30	45.0	75%	1	7%
Pass (B)	22	33.0	55%	5	33%
Slightly Below Standard (C)	19.8	29.7	50%	2	13%
Weak (D)	15.5	23.25	39%	4	27%
Showed Little Knowledge (E)	9	13.5	23%	3	20%
(F)	1	1.5	3%		
Did Not Attempt (X)	0				
Maximum Mark	32.5				
Average Mark	19.7				
Standard Deviation	6.4				
Coefficient of Variation	0.33				

This question required candidates to consider and apply basic valuation techniques.

Part (a) sought calculation of an accrued benefit.

Part (b) sought calculation of a retirement benefit.

Part (c) – the bulk of the question worth 17 of the 20 marks available – sought review and critique of the output of a simple valuation. In particular, candidates had to consider the appropriateness of input assumptions, identify any anomalies and correct errors in the valuation results.

As this question should have been 'bread and butter' (ie completely straightforward) to any retirement practitioner, it was unsurprising there was an extremely high (almost perfect) correlation of results in this question to overall course outcome.

Parts (a) and (b) were very easy. The markers noted that candidates did worse than expected given they considered this to be bookwork.

Competent candidates were able to identify most of the anomalies in the valuation output in part (c), although no candidate identified all of the errors and there was one error that no candidate recognised specifically: that the annual pension liability had been replaced by the fortnightly liability.

Most candidates realised that the pensioner election assumption had changed from 50% to 0%. Unfortunately some candidates mistakenly believed that this was the cause for the pensioner liabilities reducing.

A number of candidates estimated the correct liabilities using alternative methods such as

commutation factors and were awarded full marks.

Question 2

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**42**	**63**			
Strong Pass (A)	30	45.0	71%	2	13%
Pass (B)	27	40.5	64%	2	13%
Slightly Below Standard (C)	24	36	57%	6	40%
Weak (D)	18.5	27.8	44%	3	20%
Showed Little Knowledge (E)	14.5	21.8	35%	1	7%
(F)	1	1.5	2%	1	7%
Did Not Attempt (X)	0				
Maximum Mark	35.5				
Average Mark	24.6				
Standard Deviation	6.3				
Coefficient of Variation	0.26				

This question required candidates to consider modifications to an asset-liability model, typically used for large defined benefit superannuation funds, for application to an individual member's account.

Part (a) sought the changes required to the model, including the additional input data to be provided by the member; the valuation steps; differences from the original traditional model; and how the results could be presented to the member in a graphical format.

Part (b) sought explanation of the key output: a graph of portfolio sufficiency for 2 portfolio compositions and the significance of this result to both the member and the sponsor.

Part (c) sought consideration of further changes to incorporate an additional atypical asset class and the appropriateness of doing so.

Most candidates performed fairly well in part (a), although some of the general descriptions read more like parroted bookwork than a proper understanding in context. Most candidates identified the key difference between defined benefit and accumulation was the pooled versus individual component but struggled to nominate a second point of difference. The quality of answers varied significantly in the production of the 3 graphs… some candidates struggled to explain their own graphs and some did not draw them!

Candidates generally explained the shape of the graph in part (b) and the best candidates were able to link the need to consider risk preferences, desired drawdown rates and investment strategies holistically from an individual's perspective. The sponsor perspective was much more poorly answered, although some candidates were able to see the challenge in setting a default strategy for a heterogeneous population.

Most candidates were able to discuss how to incorporate the asset into the model in part (c), although no candidate mentioned that the liability side is not impacted. The appropriateness was not answered well, with only a few candidates recognising the challenges and risks of its inclusion in the portfolio.

Question 3

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**38**	**57**			
Strong Pass (A)	27	40.5	71%	2	13%
Pass (B)	23.5	35.3	62%	6	40%
Slightly Below Standard (C)	21.2	31.8	56%	2	13%
Weak (D)	16.5	24.8	43%	2	13%
Showed Little Knowledge (E)	10	15.0	26%	2	13%
(F)	1	1.5	3%	1	7%
Did Not Attempt (X)	0				
Maximum Mark	31.75				
Average Mark	21.7				
Standard Deviation	6.9				
Coefficient of Variation	0.32				

This question required candidates to compare and contrast two different commonly applied financial planning approaches: buckets and pots.

Responses were in the form of a report. Candidates were provided with the 6 main topics for inclusion in the report and a very basic estimate of its construction (3 topics comprising one-third of the report and 3 comprising two-thirds of the report). The purpose of this was to have candidates apply judgement as to the relative importance of each section, reflecting real-life decision making. The question was not presented as completely free form as some guidance to candidates was considered appropriate and otherwise the responses would have been more difficult and onerous to mark.

Most candidates appeared to have a good grasp of the question and responses generally were well presented. However there was a high degree of variability in the quality of the different sections of each candidate's response. Indeed the markers commented that no candidate performed well in every section of the report, as would be expected from the best candidates; there was no clear pattern in the marks for the separate sections; and as a result of this lack of consistency throughout each response there was an averaging effect overall, producing some bunching around the pass mark.

Accordingly this question had the smallest spread of marks (particularly when the outlying bottom candidate was removed) and the lowest correlation to overall course outcome.

COURSE 10 COMMERCIAL ACTUARIAL PRACTICE

1. Summary

1.1. Course Outline

The Commercial Actuarial Practice (CAP) Course is designed to teach students to apply actuarial skills across a range of traditional and non-traditional areas by "contextualizing" actuarial solutions or approaches in the wider commercial environment.

The two assessment tasks are:

1. A take-home Post-Course Assignment ("Assignment") on one of the 4 non-traditional topics: Banking, Health, Data Analytics or Environment-Social-Governance (ESG). Students were randomly allocated to each topic, subject (from this semester) to having chosen or completed the relevant topic at the Residential (see s2.1.2). It is worth 20% of the final mark.
2. An 8-hour Case Study Exam ("Exam") worth 80% of the final mark, under exam conditions with the use of a computer (open book, but no internet access). The candidates had to choose 1 question from the 5 mainstream topics - Life Insurance, General Insurance, Investment, Global Retirement Income Systems (GRIS) or Enterprise Risk Management (ERM), perform all the necessary analysis and prepare a substantial written report.

1. An overall pass requires a total of 50%, without necessarily passing the Exam.

1.2. Pass Rates

64 candidates completed the course. Of these, it is proposed that 30 be awarded a pass, representing a **pass rate of 47%.**

Table 1 – Recent Course Experience

Semester	Sat	Passed	Pass Rate %
Semester 2 of 2016	**64**	**30**	**47**
Semester 1 of 2016	80	45	56
Semester 2 of 2015	81	51	63
Semester 1 of 2015	78	47	60
Semester 2 of 2014	85	49	58
Semester 1 of 2014	86	52	60
Semester 2 of 2013	84	49	58
Semester 1 of 2013	74	39	53
Semester 2 of 2012	71	40	56
Semester 1 of 2012	82	47	57
Semester 2 of 2011	87	48	55
Semester 1 of 2011	79	47	59
Semester 2 of 2010	102	56	55
Semester 1 of 2010	97	57	59

1.3. Candidate Numbers

A total of 66 candidates were originally enrolled for the CAP course in Semester 2 of 2016. 34 candidates attended the 4-day CAP residential course at MGSM, being all those sitting CAP for the first time. In addition, 4 repeat candidates attended a half-day as a refresher, of whom 3 subsequently passed.

The candidate numbers and results can be summarised as follows:

	Total
Originally enrolled	**66**
Withdrawals	**2**
Absent	**0**
Presented	**64**
Passed	**30**
Failed	**36**

Table 2: Number of CAP Attempts

The results by number of attempts are as follows:

Attempt	Presented	Passed	Pass rate
1	34	16	47%
2	15	11	73%
3	10	2	20%
4	3	0	0%
5	1	1	100%
6	0	0	
7	1	0	0%
Total	**64**	**30**	**47%**

Of the 15 candidates sitting for the third or subsequent time, only 3 or 20% passed.

The 7-time failure was a very clear failure in Life and barely pass standard on Assignment, identical in both cases to last semester. Having interviewed them by phone last semester, I do not think they are incapable of passing, but work pressures may be affecting their performance.

Two of the 4-time failures were clear failures. The other was the top fail in ERM, who had the best Banking assignment but failed due to not designing a bond that had incentives as required by the question.

A summary of attempts by Exam topic (below) shows no major patterns other than the lower ongoing pass rate (as above) of candidates who have failed before. In a way this is comforting, that there is no obvious problem with any specific topic cohort.

Topic	Pass	Fail
ERM	1.8	2.2
GI	1.6	2.0
GRIS	1.0	2.5
Invest	1.0	1.0
Life	1.9	2.1
Total	1.6	2.0

Table 3: Analysis by Topic

The analysis by chosen Exam Topic is as follows:

Exam Topic	Candidates	No. of passes	Pass rate
ERM	10	5	50%
GI	25	12	48%
GRIS	3	1	33%
Invest	5	3	60%
Life	21	9	43%
Total	64	30	47%

As in most recent semesters we are again disappointed with the relatively low pass rate in Life Insurance.

Table 4: Analysis by Examination Centre

The results by examination centre were as follows:

Centre	Presented	Passed	Pass rate
Melbourne	15	6	40%
Sydney	40	20	50%
Subtotal Australia	**55**	**26**	**47%**
Auckland	2	1	50%
Hong Kong	1	0	0%
Kuala Lumpur	1	1	100%
London	2	0	0%
Singapore	2	1	50%
Wellington	1	1	100%
Subtotal Overseas	**9**	**4**	**44%**
Total	**64**	**30**	**47%**

The number of overseas candidates presenting has remained low. There is little pattern to the results, although Sydney has outshone Melbourne for 3 semesters in a row.

2. Course Administration

2.1 Course Outline

2.1.1 The overall objectives of the CAP course are to enable students to:

- Apply actuarial skills across a range of traditional and non-traditional areas by "contextualising" actuarial solutions or approaches in the wider commercial environment;
- Apply ethical concepts, corporate governance requirements and actuarial professional standards when writing a report; and
- Successfully communicate the actuarial solutions or approaches to a range of audiences.

2.1.2 The main instructional medium is the 4-day Residential course held at Macquarie Graduate School of Management in Sydney. Some pre-course videos, reading and report preparation, and post-course online forums are also used.

In order to introduce the Data Analytics topic this semester, the Residential was restructured so that each student attended:

- 3 compulsory sessions on Contextualisation, Business Contexts and Communication;
- 1 mainstream topic chosen from the 2 options Investment and ERM;
- 1 mainstream topic chosen from the 3 options Life, General and GRIS;
- a compulsory session on Environment-Social-Governance (ESG);
- 2 non-traditional topics chosen from the 3 options Health, Banking and Data Analytics.

2.1.3 Given the objectives, the assessment for the course is focused on the practical application of judgment and on the written communication skills of the students, rather than on bookwork. The two assessment tasks are:

1. A take-home Post-Course Assignment ("Assignment") on one of the 4 non-traditional topics (Banking, Health, ESG, Data Analytics), distributed after the 4-day residential course, for completion within 2 weeks. The students were randomly allocated to each topic, subject to Data Analytics only being allocated to students who had chosen that option at the Residential this semester. Also, repeat candidates were not allocated to the same topic 3 times in a row. The Assignment is worth 20% of the final mark. The result and feedback were supplied to candidates 1 week prior to the Exam.
2. An 8-hour Case Study Exam ("Exam") worth 80% of the final mark, under exam conditions with the use of a computer (open book, but no internet access). The candidates had to absorb the question material, choose 1 from the 5 mainstream topics (Life, General, Investment, GRIS, ERM), perform all the necessary analysis and prepare a written report (typically 10 to 15 pages plus any appendices).

2.1.4 The pass mark is 50%, which is regarded as equivalent to the 60% pass mark adopted for the other part III courses.

2.2 Examiners

The examiners for this semester were:

Chief Examiner: Bruce Thomson

Assistant Examiner: Matthew Ralph

2.3 Course Leader

The Course Leader for this semester was: David Service

The CAP Faculty Chair for this semester was: Bridget Browne

2.4 Preparation of Case Studies

Case studies were prepared by the Course Presenters in the 9 topic areas listed below. Each was designed to be completed within 8 hours under exam conditions, even though the 4 non-traditional topics were completed as a take-home assignment. Each was fine-tuned in consultation with the Chief Examiner, formally scrutineered, and signed off by the Examiners.

Data Analytics was introduced this semester to the Residential course and as an Assignment topic, thanks to a large amount of development work by Colin Priest.

Bridget Browne took over fully this semester as author, presenter and Marker 1 for ERM. Andrew P Gale (Melbourne) commenced as Health author, presenter and Marker 1.

The 5 traditional-topic questions aim to be practical within the subject area, without necessarily being entirely and strictly within the Part III syllabus.

Topic	**Course Presenter / Author**
Health	Andrew P Gale
Banking	David Service
ESG	Naomi Edwards
Data Analytics	Colin Priest
ERM	Bridget Browne
Life Insurance	David Service
Investments	David Service
GRIS	Julie Cook, Minjie Shen
General Insurance	Colin Priest

Garry Khemka was Marker 1 for Investment, which freed up David Service to be Marker 1 for Life Insurance and Marker 2 for the other 4 Exam topics. David Service was Marker 2 for all Assignment topics except Banking where he was Marker 1. Bruce Thomson was Marker 2 for Banking.

3. Post Course Assignment Results

Although marks and grades were given for the Post-Course Assignment, a pass/fail decision was not required for each candidate; this simply formed 20% of their overall mark.

Final scaled marks ranged from 38% to 85% with an average of 59%. Candidates were only given a grade (Fail, Pass, Credit, Distinction, High Distinction) but were also given a copy of their Assignment with marked-up comments from the Marker. We believe these comments were particularly useful to candidates.

55 of the 64 candidates were awarded a "pass" mark of 50% or more, with 3 or 2 failures in each of the 4 topics.

It was suggested to candidates that a Credit or better (as achieved by 56% of candidates) was a better indication of likely overall success, albeit the correlation between Assignment and Exam marks remains low.

3.1 Banking

The Banking case study required candidates to advise a bank on justifying differential loan pricing under an extreme anti-discrimination culture.

With a few exceptions, the answers were disappointing. Technical analysis of the data was generally done well, but many failed to specifically address and solve the bank's issue.

To bring the average into line with other topics, 8 marks were added to each except at the top end.

3.2 ESG

The ESG case study required candidates, as CEO of a large super fund, to report to the Board on how they will comply with a sudden Regulator requirement to reduce the carbon intensity of its total investment portfolio by 80% within 10 years.

Although there were no High Distinctions, the question was a very good discriminator, with a wide spread of raw marks. The scaling chosen was to subtract 1 mark from all raw scores.

3.3 Health

The Health case study required candidates to advise the Victorian government on funding allocations between cancer research, prevention, detection and treatment; performance measures to judge progress; and advice on how to choose the next regional integrated cancer centre.

Again the question was a good discriminator, with a wide range of marks, but it was relatively difficult to score well compared to the other topics. Many reports provided poor justification or explanation of their recommendations. The scaling adjustment was to add 7 marks to nearly all raw scores.

3.4 Data Analytics

The DA case study required candidates to analyse past data in order to provide a predictive rule that would give a high probability that credit card applicants were overstating their income (& hence should not be automatically issued a card without further investigation).

The quality of reports varied considerably, but no-one failed for technical modelling reasons. Most students used too much jargon in a report addressed to a non-technical audience. However, for a first semester of instruction, question and assignments, we were well pleased with the outcome.

No scaling of marks was required except for reducing the extremes at both top and bottom. In other words the other topics were scaled to give a pattern of results similar to DA. A pleasing 8 of the 10 students achieved pass marks without any scaling, albeit this also reflects the "self-selection" of those who chose DA as a topic at the Residential.

4 Exam results

4.1 ERM

The ERM Exam required candidates to design a Social Benefit Bond to finance services for young people at high risk of homelessness or reliance on other government welfare. The services are designed to keep those people off welfare, and the bond returns must be linked to results. The risks and returns for investors and the provider had to be considered.

4.2 GRIS

The Exam for Global Retirement Income Systems required candidates to advise a super fund on the design of default post retirement income products in a country where the government provides a minimum supplementary pension. An important aspect was to realise that retirees with lower and higher savings will have different needs for post-retirement products.

4.3 General Insurance

The General Insurance exam required candidates to advise a general insurance company that has been employing price optimisation and now faces a challenge to its pricing strategy from a group purchasing initiative for over 65s.

4.4 Investment

This case required candidates to design an investment strategy for a lottery winner who has very specific goals they wish to achieve with their money over the course of their life.

4.5 Life Insurance

The Life case required candidates to write a tender document for renewal of a key superannuation plan with insurance and investment. The question specified that a separate Board paper was required to defend the decisions, worded as follows:

- Task
- Prepare the CWA tender response and your justification report.