

**COMPARISON OF SYLLABUSES -
FACULTY AND INSTITUTE OF ACTUARIES AND
CASUALTY ACTUARIAL SOCIETY**

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The following document is the text of a paper prepared for the Faculty and Institute/CAS Joint Seminar which took place on 18 June 1999 at Staple Inn. People who attended that seminar will already have full copies, including all the appendices.

To reduce the amount of paper used, I have not included the appendices this time. Faculty and Institute, CII and IIRM syllabuses are readily available in the UK, and the syllabuses of the CAS are on their web site (www.casact.org).

Although the comparison was restricted to US/UK, there is increasing internationalisation of the actuarial profession and co-operation between actuarial organisations of different countries. With this in mind, consideration might be given to the syllabuses of the following organisations:

- Society of Actuaries
- Institute of Actuaries of Australia
- Groupe Consultatif
- International Actuarial Association

This was outside the scope of my work.

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1. INTRODUCTION

The aim of this paper is to allow a comparison of the examination syllabuses of the CAS in the US and Canada with those of the Faculty and Institute of Actuaries in the UK.

Throughout the rest of this paper, I shall refer to the Casualty Actuarial Society, the Faculty of Actuaries and the Institute of Actuaries as the CAS, Faculty and Institute, respectively.

The CAS and the Faculty and Institute have revised their syllabuses for 2000 and it is the revised syllabuses which have been compared.

Summaries of the syllabuses of the Chartered Insurance Institute and the Institute of Risk Management in the UK are provided in Appendices VI and VII.

2. SYLLABUS DEVELOPMENT

The CAS syllabus was developed by a Syllabus Committee, using the findings of a Task Force on Education. The UK syllabus was developed by a Strategy Working Party, with support from Syllabus Development Groups in each of the subjects. The project was overseen by the joint Education and CPD Board.

Inspection of the principles considered in developing the syllabuses reveals a degree of unanimity between the CAS and UK approaches.

The report of the CAS Education Task Force cites core competencies in two groups:
Quantification of Risks, and
Management of Risks

The competencies listed in the Quantification group comprise mainly technical subjects; those in the Management group relate more to Management and Commerce. The latter group includes Decision Making, Communication and Management Skills, and Business Planning and Implementation, although the Task Force recognised that these skills might not be examinable.

In the UK, the new examination structure was developed to recognise the needs of actuaries in the next ten years. These include the sound mathematical knowledge which underpins actuarial work, and communications skills. The need for actuaries to be able to analyse, synthesise and make judgements is reflected in the syllabuses for the Fellowship subjects, which cover Investment and Asset Management, Life Insurance and Pensions and Other Benefits as well as Non-Life Insurance.

In both the CAS and UK, the broadening role of the actuary was recognised and reflected in the syllabuses. For example, the CAS syllabus includes an increased emphasis on investment, dynamic financial analysis and rate of return. The UK Associateship subjects syllabuses are built around the Actuarial Control Cycle (ACC), and emphasis is placed upon the use of the ACC in non-traditional areas.

Internationalisation was also recognised in both sets of syllabuses. In the CAS, nation-specific material was restricted to Exam 7 (Annual Statement, Taxation, and Regulation). In the UK, specific knowledge of UK regulations and practice is required only in the Fellowship subjects (400 Series).

The content of the syllabuses has, however, been influenced by the area in which members of the organisations work. Specifically, members of the CAS work in property and casualty insurance, whereas members of the Faculty and Institute might work in a number of fields including investment, life insurance and pension consultancy as well as general insurance.

This means that the syllabus of the CAS is focussed on one particular area, whereas the syllabus of the Faculty and Institute is broader. It should not be a surprise, then, to find that the CAS syllabus goes into more detail on some topics.

3. SYLLABUSES

3a. CAS SYLLABUS

In 1999/2000, the examinations will be as follows:

1. – Mathematical Foundations of Actuarial Science*
2. – Interest Theory, Economics, and Finance*
3. – Actuarial Models*
4. – Actuarial Modelling*
5. – Introduction to Property and Casualty Insurance and Ratemaking
6. – Reserving, Insurance Accounting Principles, and Reinsurance
7. (Canada) – Annual Statement, Taxation, and Regulation
7. (US) – Annual Statement, Taxation, and Regulation
8. – Investments and Financial Analysis
9. – Advanced Ratemaking, Rating Plans, and Rate of Return

* Exams 1, 2, 3 and 4 are jointly administered with the Society of Actuaries.

Exams 1 – 7 are the Associate Level examinations; 8 and 9 are the Fellowship Level examinations.

Students choose one of the nation-specific Exam 7s.

This examination structure was recommended by a CAS Task Force on Education. The Task Force's report contained an Appendix with descriptions of the proposed examinations and details of subject matter to be included. This is included in Appendix I of this paper. It was used as the skeleton for the new syllabus, although the syllabus is defined in terms of readings rather than objectives. The final syllabus is in Appendix II of this paper.

3b. FACULTY AND INSTITUTE SYLLABUS

In 1999/2000, the examinations will be as follows:

101 – Statistical Modelling	201 – Communications
102 – Financial Mathematics	
103 – Stochastic Modelling	301 – Investment and Asset Management
104 – Survival Models	302 – Life Insurance
105 – Actuarial Mathematics 1	303 – General Insurance
106 – Actuarial Mathematics 2	304 – Pensions and Other Benefits
107 – Economics	
108 – Finance and Financial Reporting	401 – UK Fellowship Investment
109 – Financial Economics	402 – UK Fellowship Life Insurance
	403 – UK Fellowship General Insurance
	404 – UK Fellowship Pensions

All students take all the 100, 200, and 300 Series examinations, and one 400 Series examination of their choice.

The Foundation Stage (100 Series) examinations with particular relevance to General Insurance are 101 and 106. Appendix III contains the aims and syllabus objectives for the 100 Series examinations.

The 200 Series Communications examination has no syllabus in the usual sense, although a statement of what is expected of candidates is given.

The Associateship Stage (300 Series) examination in General Insurance is 303. Appendix IV contains the aims and syllabus objectives for this examination.

The Fellowship Stage (400 Series) examination in General Insurance is 403. Appendix V contains the aims and syllabus objectives for this examination.

4. SYLLABUS COMPARISON

The means of defining the syllabuses differs considerably. The CAS defines the syllabuses in terms of books and papers to be read, whereas the Faculty and Institute's syllabuses are defined by syllabus objectives and Core Reading. Additionally the CAS has not yet attempted to specify the number of hours effective studying required to prepare properly for the examinations. Rather, an attempt has been made to make the new examination structure broadly equivalent to the old structure by a page count of the recommended reading before and after the changes. This contrasts with the UK situation where the syllabus scope is restricted to a level which a 'typical' student could absorb in a certain number of hours of effective study. This number ranges from 50 hours for 201 (Communications) to 300 hours for the Fellowship subjects.

These differences make detailed comparison more difficult, but a broad comparison is possible.

It is clear from looking at the syllabuses that there is a great deal of commonality. This is particularly true of the earlier, more mathematical, subjects. Here, the concepts of probability, contingencies, statistics, loss distributions, risk theory, regression, economics and finance are clearly incorporated in both sets of examinations.

In the later subjects, nation-specific material is introduced at the Associateship level in the CAS syllabus, whereas it is delayed until the Fellowship level in the UK syllabus. The degree of detail also seems to be greater in the CAS, reflecting the non-specialist nature of the Faculty and Institute's examinations as a whole. However, very little of the CAS syllabus, apart from US- and Canada- specific material, is likely to be unfamiliar to UK actuaries, (and vice versa).

5. CONCLUSION

The commitment of the actuarial profession on both sides of the Atlantic to a continual review of the relevance and quality of their examination syllabuses is reflected in the changes made for 2000.

Both have recognised the need for technical and non-technical skills, and have responded positively to the changing business environment. They have reflected emerging techniques of analysing and managing risks, and the different issues facing financial services providers, in the content of the new examinations. They have also recognised the increasingly worldwide nature of commerce by restricting the amount of nation-specific material to a single examination.

The intention in both qualification syllabuses has been to equip the newly qualified actuary for the challenges of their vocation in the next century in both traditional and non-traditional areas.

Where the syllabuses diverge, this is mainly a result of the different work areas of the members of the organisations, rather than a fundamental difference of approach or different standards of quality.