

UNIVERSITY OF KENT AT CANTERBURY

Institute of Mathematics and Statistics

GRADUATE DIPLOMA in ACTUARIAL SCIENCE

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1 The Subject Area

1.1 Introduction

Are you interested in a career that offers stimulating work, the opportunity to communicate in a commercial environment, and an excellent salary? Then you should consider a career as an actuary.

The Diploma in Actuarial Science at the University of Kent is designed to get your career as an actuary off to a flying start.

This nine-month full-time course is a fast track route to qualification which can lead to exemption from the first nine of the professional examinations of the Institute and Faculty of Actuaries. This should significantly reduce the period of training required for an actuarial qualification.

The taught course leading to the award of the Diploma enables you to acquire the core skills and knowledge required by all actuaries. The course commences at the beginning of the academic year, in September, and continues over the three terms until the following June.

1.2 What is an actuary?

An actuary is a professional who applies mathematical and statistical techniques to financial problems. Actuaries manage financial risk and make financial sense of the future for their clients. They look at what's happened in the past and use it to make predictions about the future, developing strategies which are appropriate given the risks involved.

Actuaries work in all kinds of areas: insurance companies, investments, pensions, health care and banking. Qualifying as an actuary is a passport to a wide variety of careers, not just in the UK, but throughout the world.

1.3 The actuarial profession

In the UK there are two professional actuarial bodies, the Institute of Actuaries and the Faculty of Actuaries. To become an actuary it is necessary to qualify as a Fellow of either body by passing the professional examinations and satisfying the profession's experience requirements. Although the Institute and the Faculty collaborate on matters affecting the profession, they are independent. However, they jointly hold their examinations. The examinations are

considered by many to be the hardest across the professions and the average time to qualification is around seven years.

The profession is a small but highly respected one, with around 4,000 actuaries currently employed in the UK. However, many actuaries become general managers or directors and the profession is amongst the highest paid in the country.

Actuarial work is concerned with the application of financial, mathematical and statistical techniques to a wide range of problems. The main areas of actuarial work are:

Insurance companies, valuing financial contracts, investment modelling and investing funds.

Consultancy, offering advice to occupational pension funds and employee benefits schemes.

Government service, supervising insurance companies and advising on the national insurance fund.

Actuaries are also employed in the Stock Exchange, in industry and in universities.

As actuarial techniques are relevant to many problems, actuaries enjoy a wide variety of satisfying and highly rewarding careers.

2 The Programme of Study

The Graduate Diploma in Actuarial Science is a nine-month full-time course. The course starts at the beginning of the academic year, in September, and ends in June of the following year. Students who successfully complete the course are awarded the Graduate Diploma in Actuarial Science by the university and, in addition, can obtain exemptions from up to nine of the professional examinations of the Institute of Actuaries.

2.1 Subjects

The following core subjects are covered, corresponding to subjects 101 to 109 of the examination syllabus of the Institute and Faculty of Actuaries:-

- **Statistical Modelling (101)**

A grounding in basic statistics and its applications in readiness for other courses

- **Financial Mathematics (102)**

An introduction to financial mathematics and its simple applications

- **Stochastic Modelling (103)**

The construction, fitting and analysis of stochastic models, including detailed analysis of some complex models

- **Survival Models (104)**

An introduction to actuarial survival models and their applications

- **Actuarial Mathematics 1 (105)**

The mathematical techniques of pricing and evaluating insurance and pension products

- **Actuarial Mathematics 2 (106)**

The fundamental statistical techniques used in the analysis of short-term insurance contracts

- **Economics (107)**

An introduction to key economic concepts at both the micro and macro levels

- **Finance & Financial Reporting (108)**

An introduction to corporate finance and the interpretation of company accounts

- **Financial Economics (109)**

A grounding in modern financial theory and its applications

2.2 Assessment Details

There are written examination papers for each subject which take place in the third term. Although only eight units (equivalent to a minimum of 5 subjects leading to the professional examinations) are required to pass the Diploma, further subjects may be taken for exemption purposes. If fewer than eight units are taken, students may be eligible for the Graduate Certificate in Actuarial Science.

Students who do not perform sufficiently well to obtain the diploma at their first attempt will be allowed to re-sit examinations in at most two subjects in August or September. Exemptions from the professional examinations will not be granted on the basis of re-sit examinations.

The University of Kent has entered into an exclusive arrangement with a firm of consulting actuaries, B&W Deloitte who market the industry's leading actuarial software package PROPHET. As a result of this arrangement, the following optional module is available:-

- **Introduction to PROPHET**

An introduction to the use and application of this market leading actuarial software package.

3 Entry requirements

The Graduate Diploma is primarily intended for graduates with a good first degree (usually in mathematics, statistics or economics although other subjects with a high mathematical content are acceptable). A prior knowledge of statistics, economics or finance is not required for this course but would increase the opportunity to gain the highest number of exemptions.

4 Fees and funding

The tuition fee for the Diploma course for the academic year 2003-04 is £6,240 which is payable in full on the first day of the course. Fees are reviewed annually. These fees apply to both home students and overseas students.

Many UK students fund their places through a Career Development Loan (contact any UK bank or Job Centre for further information). Organisations are occasionally willing to offer students sponsorship. For up to date details, you should contact the Institute or Faculty of Actuaries for information (Tel +44 (0) 1865 268200).

5 General Information

5.1 The Institute of Mathematics and Statistics

The Institute of Mathematics and Statistics (IMS), with slight changes in name, has existed from the earliest days of the University of Kent and is part of the Faculty of Science, Technology and Medical Sciences. Currently there are three academic groups with the IMS: Actuarial Science, Mathematics and Statistics.

Actuarial Science is an important component of the IMS due to the number of students, including overseas students, who are attracted to the study actuarial science at Kent. Currently approximately half of IMS students are on the Actuarial Science study programmes.

UKC is one of a very limited number of universities in the UK to teach Actuarial Science. The principal feature of the degree and Graduate Diploma courses at UKC is the exemptions that successful students can gain from the professional examinations of the Faculty and Institute of Actuaries. The successful completion of either course leads to excellent job prospects, as demonstrated by the strong graduate employment record for all of our actuarial science students.

The actuarial science modules on the degree, Graduate Diploma and MSc courses are taught by qualified actuaries who are all Fellows of the Institute of Actuaries (with experience in consultancy or the insurance industry) and the statistical and economics modules are taught by academics with specialities in those disciplines.

Actuarial Science has expanded from a highly specialised and narrow discipline, to be one that provides a broad foundation for financial management, requiring students to gain familiarity with advanced statistics, economics, accounting, and computing as well as traditional actuarial and mathematical topics.

The Actuarial Science Group maintains close relationships with industry actuaries through two aspects. First, through the Invicta Actuarial Society, which is a regional Actuarial society that has its meetings on campus and is organised by UKC students and academic staff. Meetings are also attended by practising actuaries and other visiting actuaries. Thus practising actuaries are brought onto campus to interact with students in non-classroom situations by presenting current research and business problems. Second, members of the Actuarial Science Group assists companies visiting the UKC campus to recruit UKC graduates. The Actuarial Science Group develops the vocational interests of the students by visits from varied outside speakers including practitioners, careers advisors and recruiters.

5.2 The University and Canterbury

The University of Kent at Canterbury (UKC) was granted its Royal Charter in 1965, the year in which its first 500 students were admitted. It has now grown in size to nearly 10,000 students and about 550 academic staff.

The city of Canterbury is one of the most ancient and beautiful cathedral cities in the United Kingdom. There have been settlements here since the Iron Age, and in both Roman and Medieval times, Canterbury was a major centre of trade and pilgrimage. Today the centre of the city still preserves a medieval atmosphere, and is second only to London in attracting foreign visitors to the U.K. The University is situated on a hillside overlooking the city and has revitalised the tradition of scholarship and learning which dates back to the eighth century.

Canterbury, with a population of some 36,000 is situated in an area of hop fields and orchards for which the county of Kent is renowned (the "garden of England"). Its centre is a friendly and busy place, with a large range of good shops, restaurants, wine bars and interesting pubs. It is fortunate in having the Marlowe theatre (in addition to the Gulbenkian theatre on campus), the famous

St. Lawrence County Cricket Ground, music at the Cathedral (as well as the University), and two swimming pools only a mile from the University. Canterbury is also the home of an established Arts Festival, which takes place each autumn, and attracts theatre, opera and ballet companies, orchestras and artists of national and international distinction. Opened recently, the Channel Tunnel places Kent at the gateway to Europe and means that it is easier to get to Canterbury from Brussels and Paris than from several parts of the UK. For example, by travelling from Ashford International (16 miles from Canterbury) on Eurostar, it is easier to give a seminar in, say, Lyon, than in Manchester.

The University occupies a large and very attractive campus overlooking the city. It provides excellent accommodation for a large proportion of its students, many of it connected to the PC network allowing internet access. There is a wide range of recreational venues on campus including a theatre, cinema, various bars, sports centre and an award winning night club.

6 How to Apply

Further information about the diploma course and application forms may be obtained from:

The Admissions Officer,
Diploma in Actuarial Science,
Institute of Mathematics and Statistics,
Cornwallis Building,
University,
Canterbury,
Kent CT2 7NF.

Tel: +44 (0) 1227 827181
Fax: +44 (0) 1227 827932
E-mail: imssecs@ukc.ac.uk
www.ukc.ac.uk/ims

Further information about accommodation may be found on the web on www.ukc.ac.uk/hospitality/staff-student/accommodation/

7 Appendix

Examinations of the Institute and Faculty of Actuaries

- 101 Statistical Modelling**
- 102 Financial Mathematics**
- 103 Stochastic Modelling**
- 104 Survival Models**
- 105 Actuarial Mathematics 1**
- 106 Actuarial Mathematics 2**
- 107 Economics**
- 108 Finance & Financial Reporting**
- 109 Financial Economics**

201 Communications

- 301* Investment & Asset Management**
- 302* Life Insurance**
- 303* General Insurance**
- 304* Pensions & Other Benefits**
- 305* Finance & Investment**

- 401* UK Fellowship Investment**
- 402* UK Fellowship Life Insurance**
- 403* UK Fellowship General Insurance**
- 404* UK Fellowship Pensions**

* Students are required to take four subjects from the 300 series (with subject 301 being compulsory) and one subject from the 400 series