1. **Title of the module**

MACT9170 (MA917) - General Insurance Reserving and Capital Modelling

1. **School or partner institution which will be responsible for management of the module**

School of Mathematics, Statistics and Actuarial Science

1. **The level of the module (Level 4, Level 5, Level 6 or Level 7)**

Level 7

1. **The number of credits and the ECTS value which the module represents**

30 credits (7.5 ECTS)

1. **Which term(s) the module is to be taught in (or other teaching pattern)**

Autumn and Spring

1. **Prerequisite and co-requisite modules**

Co-requisite: MACT9210 Actuarial Risk Management 1 and MACT9220 Actuarial Risk Management 2

1. **The programmes of study to which the module contributes**

MSc in Applied Actuarial Science also with an Industrial Placement and International Masters

1. **The intended subject specific learning outcomes.  
   On successfully completing the module students will be able to:**

8.1 Demonstrate knowledge and understanding of complex techniques applicable to solve problems in General Insurance – Reserving and Capital Modelling in the context of current professional actuarial practice.

8.2 Demonstrate knowledge and understanding of complex current issues in General Insurance – Reserving and Capital Modelling in the context of current professional actuarial practice.

8.3 Demonstrate a high level of understanding of the main body of knowledge for the module.

8.4 Demonstrate skill in calculation and manipulation of the material written within the module.

8.5 Apply a range of concepts and principles of General Insurance – Reserving and Capital Modelling in various contexts.

8.6 Demonstrate skill in solving problems in General Insurance – Reserving and Capital Modelling by various appropriate methods.

8.7 Demonstrate skills in the specific mathematical and statistical techniques used in the actuarial practice of General Insurance Reserving and Capital Modelling and their application to solving problems in that subject.

8.8 Demonstrate understanding of the current practical applications of the module material.

1. **The intended generic learning outcomes.  
   On successfully completing the module students will be able to:**

9.1 Demonstrate ability for logical argument.

9.2 Demonstrate ability to work with relatively little guidance.

9.3 Demonstrate high-level problem-solving skills, relating to qualitative and quantitative information, demonstrating self-direction and originality of thought.

9.4 Demonstrate communications skills, covering both written and oral communication, with the ability to communicate clearly to both specialist and non-specialist audiences using the appropriate information technology.

9.5 Demonstrate judgemental skills.

9.6 Demonstrate numeracy and computational skills.

9.7 Demonstrate time-management and organisational skills, as evidenced by the ability to plan and implement efficient and effective modes of working, and to act autonomously.

9.8 Demonstrate study skills needed for continuing professional development.

9.9 Demonstrate decision-making skills in complex situations.

1. **A synopsis of the curriculum**

The aim of this module is to develop the student's ability to apply, in simple situations, the mathematical and economic techniques and the principles of reserving and capital modelling needed for the operation on sound financial lines of general insurers. Outline syllabus includes: insurance products; reinsurance products; the business environment; Lloyd's; risk and uncertainty; data; actuarial investigations; reserving by triangulation methods; reserving bases; stochastic claims reserving; assessment of reserving results; use of ranges and best estimates in reserving; investment principles and asset liability matching; capital modelling; determining appropriate reinsurance; reserving of reinsurance; accounting principles; interpreting accounts; regulation.

This module will cover a number of syllabus items set out in Subject SP7 published by the Institute and Faculty of Actuaries. This is a dynamic syllabus, changing regularly to reflect current practice.

1. **Reading list (Indicative list, current at time of publication. Reading lists will be published annually)**

Study notes published by the Actuarial Education Company for Subject SP7.

1. **Learning and teaching methods**

**Standard Delivery**

Total contact hours: 72

Private study hours: 228

Total study hours: 300

**Tutorial Delivery**

Total contact hours: 36

Private study hours: 264

Total study hours: 300

Teaching methods will differ according to the number of students registered on the module.

The standard format, for more than 6 students registered:

The module will be taught by means of 72 hours of lectures over two terms, including example classes, computer laboratory classes and presentations.

The tutorial format, for 6 students or less registered:

The module will be taught by means of 36 small group tutorials over two terms, including example classes, computer laboratory classes and presentations.

Lectures, tutorials and classes given by a wide variety of teachers with recent practical experience in the subject.

1. **Assessment methods**
   1. Main assessment methods

Assessment 1 Coursework exercises 3 – 5 hours 3.3%

Assessment 2 Coursework exercises 3 – 5 hours 3.3%

Assessment 3 Coursework exercises 6 – 10 hours 6.7%

Assessment 4 Coursework exercises 6 – 10 hours 6.7%

Examination 3 hours 80%

The coursework mark alone will not be sufficient to demonstrate the student’s level of achievement on the module.

13.2 Reassessment methods

Like-for-like

1. **Map of module learning outcomes (sections 8 & 9) to learning and teaching methods (section12) and methods of assessment (section 13)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Module learning outcome** | 8.1 | 8.2 | 8.3 | 8.4 | 8.5 | 8.6 | 8.7 | 8.8 | 9.1 | 9.2 | 9.3 | 9.4 | 9.5 | 9.6 | 9.7 | 9.8 | 9.9 |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Standard Delivery** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lectures & classes | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Private Study | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| **Tutorial Delivery** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Tutorials | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Private Study | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| **Assessment method** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Assessment 1 | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Assessment 2 | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Assessment 3 | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Assessment 4 | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Examination | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |  |  | **x** |

1. **Inclusive module design**

The School recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

1. **Campus(es) or centre(s) where module will be delivered**

Canterbury

1. **Internationalisation**

Actuarial Science is an international subject with techniques developed and refined by actuaries, mathematicians and statisticians across the globe. Mastery of the subject-specific learning outcomes (section 8) will equip students to apply the techniques of this module in a wide range of international contexts. The module team is drawn from the School of Mathematics, Statistics and Actuarial Science, which includes many members of staff with international experience of teaching and research.

Examples with an international dimension are included in the module where appropriate.

The support SMSAS provides to its students is also internationally attuned given our international student body.

**FACULTIES SUPPORT OFFICE USE ONLY**

**Revision record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of the delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
| 23/01/2019 | Major | September 2019 | 1, 8, 10, 11 |  |
|  |  |  |  |  |

Revised FSO Jan 2018