1. **Title of the module**

MACT9240 (MA924): Short Project (Actuarial Research)

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 (e.g. Level 4, Level 5, Level 6 or Level 7)**

Level 7

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

15 credits (7.5 ECTS)

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

Spring and Summer

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

MACT9210 Actuarial Risk Management 1, MACT9530 Communications and MACT9230 Introduction to Actuarial Research are co-requisite modules

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:**
   1. produce a research report using LaTex;
   2. produce research that demonstrates high level skills in relevant computing utilities and the statistical package R;
   3. produce research that demonstrates the ability to analyse data, evaluate and develop models, and interpret the results appropriately; and
   4. produce research that demonstrates the ability to apply appropriate mathematical, statistical and actuarial concepts and techniques in a particular topical area of actuarial research.
2. **The intended generic learning outcomes.  
   On successfully completing the module students will be able to:**
   1. demonstrate self-direction and originality in tackling and solving problems, and act autonomously in planning and implementing analysis of unfamiliar material at a professional level
   2. demonstrate relevant computing skills at a high level, including use of appropriate document preparation and word-processing packages;
   3. demonstrate the ability to communicate conclusions clearly to an appropriate audience;
   4. demonstrate a capability for independent research and problem-solving skills;
   5. demonstrate intellectual independence through the exercise of initiative and personal responsibility, and an ability for independent learning and time management required for continuing professional development;
   6. demonstrate an ability to select material from source texts, either recommended to or found by the student, and show critical awareness of the relationship of the material to background and to more advanced material, and show an ability to synthesise information and incorporate ideas in support of an academic argument.
3. **A synopsis of the curriculum**

Students, either individually or as part of a group, will be assigned a project on an area of actuarial research. For each project, the students will be required to process and analyse information, form conclusions, and produce an individual written report in LaTex that contains a review of existing literature on the particular topic, and to produce a piece of work in the assigned area of research and a coherent account thereof in LaTex, either as an individual or as part of a group.

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

Porteous, B. and Tapadar, P. (2005). Economic Capital and Financial Risk Management for Financial Services Firms and Conglomerates. Palgrave Macmillan.

Sweeting, P. (2017). Financial Enterprise Risk Management (2nd Ed). Cambridge University Press.

Thomas, R.G. (2017) Loss Coverage: Why Insurance Works Better with Some Adverse Selection. Cambridge University Press.

Cairns, A.J.G., Blake, D., Dowd, K., Coughlan, G.D., Epstein, D., Ong, A., and Balevich, I. (2009) A quantitative comparison of stochastic mortality models using data from England and Wales and the United States. North American Actuarial Journal 13(1): 1-35.

1. **Learning and Teaching methods**

Meeting with project supervisor: 6 hours

Independent learning hours: 144 hours

Total study hours: 150 hours

1. **Assessment methods.**

13.1 Main assessment methods

Project review – individual review of research up to 3,000 words 30%

Project research – completion of contribution to knowledge and understanding 70%  
 (group or individual): up to 10,000 words

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* | *9.1* | *9.2* | *9.3* | *9.4* | *9.5* | *9.6* |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |  |  |
| Supervisor meeting |  |  |  | **✓** | **✓** | **✓** |  |  | **✓** | **✓** | **✓** |
| Private study | **✓** | **✓** | **✓** | **✓** | **✓** | **✓** | **✓** | **✓** | **✓** | **✓** | **✓** |
| **Assessment method** |  |  |  |  |  |  |  |  |  |  |  |
| Project review | **✓** | **✓** | **✓** | **✓** | **✓** | **✓** | **✓** | **✓** | **✓** | **✓** | **✓** |
| Project research | **✓** | **✓** | **✓** | **✓** | **✓** | **✓** | **✓** | **✓** | **✓** | **✓** | **✓** |

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.

In compiling the reading list, consideration has been given to the range of texts that are available internationally and a selection of texts has been identified to complement the delivery of the material.

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) |
|  |  |  |  |  |
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