1. **Title of the module**

MACT8400 (MA840) - Financial 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**

15 credits (7.5 ECTS)

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

Spring and Summer OR Summer

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

Students will need to have a level of knowledge of Excel techniques similar to that provided by WMATH016.

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

Optional to the following programmes:

MSc in Actuarial Science (including programme with an Industrial Placement), International Masters in Applied Actuarial Science Year 1 (including programme with an Industrial Placement)

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

8.1 demonstrate skills in understanding actuarial modelling and information technology (e.g. via the use of Excel or PROPHET);

8.2 understand the principles of specific actuarial mathematics techniques;

8.3 develop simple actuarial computer models to solve actuarial problems;

8.4 interpret and communicate the results of the models derived in 8.3.

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

9.1 apply a logical mathematical approach to solving problems.

9.2 demonstrate skills to communicate competently in writing;

9.3 apply the relevant computing skills to solving problems and communicating solutions.

1. **A synopsis of the curriculum**

This module is split into two parts: 1. An introduction to the practical experience of working with the financial software package, PROPHET, which is used by commercial companies worldwide for profit testing, valuation and model office work. The syllabus includes: overview of the uses and applications of PROPHET, introduction on how to use the software, setting up and performing profit tests on a range of life assurance products, analysing and checking the cashflows for reasonableness, setting up and editing input files, performing sensitivity tests, debugging errors and analysing the results. 2. An introduction to financial modelling techniques on spreadsheets which will focus on documenting the process of model design and communicating the model's results. The module enables students to prepare, analyse and summarise data, develop simple financial and actuarial spreadsheet models to solve financial and actuarial problems, and apply, interpret and communicate the results of such models.

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

This is primarily a practical module. The majority of the reading will be provided by specific lecture notes.

1. **Learning and teaching methods**

Total contact hours: 36

Private study hours: 114

Total study hours: 150

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

Introduction to PROPHET: Assessment 1 In-course test (c60 minutes) 50%

Modelling: Assessment 2 Exercises, requiring on average between

10 and 15 hours to complete 50%

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 | 9.1 | 9.2 | 9.3 |
| **Learning/ teaching method** |  |  |  |  |  |  |  |
| Private Study | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Computer classes/lectures | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| **Assessment method** |  |  |  |  |  |  |  |
| Introduction to PROPHET: Assessment 1 | **x** |  |  |  | **x** |  | **x** |
| Modelling: Assessment 2 |  | **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**

This module covers key principles, theories and concepts of finance that are used in a global environment. Mastery of the subject-specific learning outcomes, outlined in Section 8, will equip students to apply these principles, theories and concepts 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, research collaboration and of working within the financial sector.

Examples covering various international economic/financial frameworks are included in the module where appropriate

**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) |
| 18/12/2019 |  | September 2020 | 5, 7 |  |
| July 2023 | Minor | September 2023 | 7, 8, 10, 13, 14, 17 |  |