Welcome to MTH6157
Survival Models
SEPTEMBER 2020
Module introduction
Chris Sutton FIA

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<tr>
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<td>020 7882 2911</td>
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Office hour: online by arrangement – please email to agree a time
Module summary and objectives

Mortality and Survival are important variables in the management of insurance companies and pension funds

- Actuaries need to consider a number of ways of modelling survival
- These have included adapting models used elsewhere in statistics and specific actuarial methods
- We also need methods for testing these models and analysing published mortality data

In this module we will learn about

- Building, using and comparing different mathematical models for survival
- Understanding the distributions, parameters and measures used in different methods
- Models in common use and the mortality assumptions they are based on
- Evidence based decision-making
- Applying analytical skills to an unfamiliar problem
Teaching

Everything you will need for this module will be included in the online timetabled sessions

4 online sessions per week
- Monday 3pm UK time
- Tuesday 3pm UK time
- Thursday 4pm UK time
- Friday 2pm UK time

These will mostly be a mixture of live lectures (teaching material) and live webinars (going through problem questions) via Blackboard Collaborate (and recorded)

There will also be some sessions with recorded teaching material or guided reading published in advance
Assessment

Assessment for this module has changed this year

Now

75%  Alternative Assessment [online exam] in January 2021
25%  five assessed coursework set through Semester A

Full details of arrangements for the January alternative assessment will be published in due course

The first assessed coursework will be set in week 1 and due in week 2
## Institute and Faculty of Actuaries examinations

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<th>Statistical Modelling I</th>
<th>IFoA exam CT4 Models</th>
<th>IFoA exam CT6 Statistical Methods</th>
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Resources and books

1. Your own lecture notes and coursework
2. Lecture notes and hand-outs posted on QM Plus
3. Independent study

If you like to look at other resources to see how different people explain things try:

There is one important BAJ paper on Survival Models:
Topics in this *Survival Models* module

1. Principles of actuarial modelling
2. Survival model concepts
3. Estimating the lifetime distribution – Non-Parametric methods
4. Deriving maximum likelihood estimators – Proportional Hazard models
5. Binomial and Poisson models
6. Exposed to risk and census methods
7. Graduation – tests and methods
8. Generalised Linear Model in insurance
3 objectives for our lectures and tutorials

- Learn the mathematics of Survival Models
- Cover material in IFoA examination syllabus
- Find real-world applications to talk about