### COURSE DETAILS

<table>
<thead>
<tr>
<th><strong>Course Code:</strong></th>
<th>F79MB</th>
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<tbody>
<tr>
<td><strong>Full Course Title:</strong></td>
<td>Statistical Models B</td>
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<tr>
<td><strong>SCQF Level:</strong></td>
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<td><strong>SCAF Credits:</strong></td>
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<tr>
<td><strong>Available as Elective:</strong></td>
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### DELIVERY LEVEL

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<th>Yes</th>
<th>Postgraduate Taught:</th>
<th>Yes</th>
<th>Postgraduate Research:</th>
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### COURSE AIMS

In this module students will

- develop the ability to understand and solve practical statistical problems
- learn how to choose appropriate statistical techniques in order to analyse data
- learn to use an appropriate computer package to implement the relevant statistical techniques
- develop report writing and presentation skills
- develop independent research skills

### LEARNING OUTCOMES – SUBJECT MASTERY

After studying this module, students should be able to:

- Construct statistical models appropriate to practical problems
- Understand, select and use appropriate graphical and summary techniques for exploratory data analysis
- Understand in detail the issues involved in the modelling of continuous response variables with one or more explanatory variables, with particular regard to model selection and fitting and diagnostic procedures
- Understand the theory and techniques for the analysis of categorical data
- Choose appropriate techniques, e.g. generalised linear models, to analyse categorical data and present results
- Be able to write clear, concise and well-structured reports involving the application of the above skills to practical data-analytic problems.

### LEARNING OUTCOMES – PERSONAL ABILITIES

At the end of the module, students should be able to:
F79MB Statistical Models B

- Demonstrate the ability to learn independently
- Manage time, work to deadlines and prioritise workloads
- Summarise and explain in writing the application of statistical modelling to practical problems and understand the usefulness of statistical modelling in industry (and particularly in the actuarial profession)
- Present investigation results in a way that demonstrates that they have understood the technical and broader issues related to the application of statistical modelling methods
- Use statistical techniques and appropriate computing techniques to solve practical problems and to present the solution of these problems appropriately to both technical and non-technical audiences

SYLLABUS

- Checking the fit of distributions to data
- Non-parametric estimation
- Linear models
- Generalised Linear Models
- Single classifications
  - Binary classifications
  - Qualitative categories
  - Ordered categories
  - Goodness-of-fit tests for frequency distributions
  - Residuals
- Applied statistical project

COURSE RELATIONSHIPS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Level</th>
<th>Title</th>
<th>School</th>
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<td>Probability and Statistics A</td>
<td>School of Math and Comp Sci.</td>
<td>Pre-Requisite</td>
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SYNOPTIC

LOCATION AND ASSESSMENT METHODS

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