F71MA Statistical Models

**COURSE DETAILS**

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<th>Course Code:</th>
<th>F71MA</th>
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<td>Full Course Title:</td>
<td>Statistical Models</td>
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<tr>
<td>SCQF Level:</td>
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**DELIVERY LEVEL**

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**COURSE AIMS**

In this module students will

- develop an understanding of the different methodologies of statistical inference
- develop skills in practical, computer-based estimation and inference
- develop report writing and presentation skill
- develop independent research skills

**LEARNING OUTCOMES – SUBJECT MASTERY**

On completion of this course, students will be able to demonstrate:

- understanding of the theoretical bases of three main approaches to statistical inference and the relations between them
- ability to apply all three main approaches to inference in a number of examples
- ability to understand and assess applicability and limitations of these approaches working with data sets in a practical setting
- critical analysis of quantities of interest and conclusions made using statistical inference

On completion of this course, students will:

- develop their problem-solving skills
- gain ability to critically understand and apply relevant approaches to statistical inference in a practical setting

**LEARNING OUTCOMES – PERSONAL ABILITIES**
At the end of the course, students should be able to:

- Demonstrate the ability to learn independently
- Manage time, work to deadlines, and prioritise workloads
- Use an appropriate computer package to process data
- Present results in a way which demonstrates that they have understood the technical and broader issues of statistical inference

Students will organise their learning and working on a project through time management.

Students will:

- demonstrate high levels of numeracy required for working with data
- develop and demonstrate skills to communicate with peers as well as with academic staff
- develop and demonstrate skills in using statistical software

**SYLLABUS**

- Inference and decision making
  - Parameter estimation
  - Likelihood
  - Bayesian estimation and credibility theory
  - Hypothesis testing
- Project preparation
- Applied statistical project

**LOCATION AND ASSESSMENT METHODS**

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