

Liverpool John Moores University

Title: QUANTITATIVE METHODS
Status: Definitive
Code: **7003BUSAE** (100184)
Version Start Date: 01-08-2011

Owning School/Faculty: Liverpool Business School
Teaching School/Faculty: Liverpool Business School

| Team | Leader |
|-------------------|--------|
| Robert McClelland | Y |

Academic Level: FHEQ7
Credit Value: 15.00
Total Delivered Hours: 37.00
Total Learning Hours: 150
Private Study: 113

Delivery Options

Course typically offered: Semester 1

| Component | Contact Hours |
|-----------|---------------|
| Lecture | 20.000 |
| Tutorial | 15.000 |

Grading Basis: 40 %

Assessment Details

| Category | Short Description | Description | Weighting (%) | Exam Duration |
|----------|-------------------|-------------------|---------------|---------------|
| Exam | AS1 | Examination | 80.0 | 2.00 |
| Test | AS2 | Test - 50 minutes | 10.0 | |
| Test | AS3 | Test - 50 minutes | 10.0 | |

Aims

1. To provide the mathematical and statistical underpinning for accounting and finance.
2. To enable students to use appropriate Excel functions for the mathematics of accounting and finance.
3. To enable students to use Excel and appropriate software for statistical analysis.
4. To acquire advanced knowledge in the use of SPSS relevant to accounting and finance. This knowledge will be particularly useful to students undertaking Research

Methods in the following semester.

5. To critically evaluate the robustness, validity and significance of output provided by SPSS and to suggest possible course of actions to improve results.

Learning Outcomes

After completing the module the student should be able to:

- 1 Use mathematical and statistical tools required by the study of accounting and finance
- 2 Use SPSS for multiple regression analysis and correctly interpret the significance of the results, their robustness with particular emphasis on inference and diagnostic tests
- 3 Write suitable reports based on the information and the statistical analysis of output provided by SPSS

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

| | | |
|------|---|---|
| EXAM | 2 | 3 |
| Test | 1 | |
| Test | 1 | |

Outline Syllabus

Basic statistical and mathematical tools

Hypothesis testing based on differences between means (t tests, F tests)

Differentiation (constrained and unconstrained)

Regression analysis - correlation, simple and multiple regression

Tests for serial correlation, heteroscedasticity and normality

Learning Activities

Lecturer will cover:

Mathematical and statistical topics. The use of appropriate functions in SPSS and Excel. Statistics software.

Tutorials will involve:

Mathematical modelling and the application of Excel and SPSS functions. Statistical analysis using appropriate software

References

| | |
|------------------------|--|
| Course Material | Book |
| Author | Bradley T |
| Publishing Year | 2008 |
| Title | Essential Mathematics for Business & Economics |
| Subtitle | |
| Edition | |
| Publisher | John Wiley & Sons |
| ISBN | 0470018569 |

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|------------------------|--|
| Course Material | Book |
| Author | Jacques I |
| Publishing Year | 2002 |
| Title | Mathematics for Economics and Business |
| Subtitle | |
| Edition | |
| Publisher | FT Prentice hall |
| ISBN | 0273655647 |

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|------------------------|----------------------------|
| Course Material | Book |
| Author | Gujarati D N |
| Publishing Year | 2005 |
| Title | Essentials of Econometrics |
| Subtitle | |
| Edition | |
| Publisher | McGraw-Hill |
| ISBN | 0071244484 |

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|------------------------|--------------------|
| Course Material | Book |
| Author | Gujarati DN |
| Publishing Year | 2002 |
| Title | Basic Econometrics |
| Subtitle | |
| Edition | 4th |
| Publisher | McGraw |
| ISBN | 0071123431 |

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|------------------------|--|
| Course Material | Book |
| Author | Levine DM, Stephan D & Krehbiel TC |
| Publishing Year | 2002 |
| Title | Statistics for Managers: Using Microsoft Excel |
| Subtitle | |
| Edition | |
| Publisher | Prentice Hall |
| ISBN | 0130290904 |

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| Course Material | Book |
| Author | |
| Publishing Year | |
| Title | |
| Subtitle | |
| Edition | |
| Publisher | |
| ISBN | |

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| Course Material | Book |
| Author | Recent issues of the following journals |
| Publishing Year | 0 |
| Title | Applied Financial Economics, Journal of Forecasting, Applied Economics Letters, Applied Economics |
| Subtitle | |
| Edition | |
| Publisher | |
| ISBN | |

Notes

The module covers the mathematics necessary for the study of accounting and finance, and an introduction to statistical software. Solutions to modules are to be achieved using mathematical methods and, where appropriate, Excel and/or SPSS. Statistical analysis is undertaken using Excel and SPSS.

The tests are designed to be diagnostic, and to provide formative feedback. The examination is the terminal summative assessment.