

## Liverpool John Moores University

Title: Quantitative Methods for Finance  
Status: Definitive  
Code: **7001MSCFM** (120848)  
Version Start Date: 01-08-2017

Owning School/Faculty: Academic Portfolio  
Teaching School/Faculty: Academic Portfolio

Team	Leader
Seng Kiong Kok	Y

**Academic Level:** FHEQ7  
**Credit Value:** 20  
**Total Delivered Hours:** 39  
**Total Learning Hours:** 200  
**Private Study:** 161

### Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	12
Workshop	24

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	Report (2000 words)	40	
Exam	AS3	End of module closed book examination	60	3

### Aims

*This module aims to equip students with the necessary foundations in mathematics and statistics to successfully study other modules of the MSc Financial Management by providing students with mathematical and statistical underpinning for the study of Financial Management. It will enable the use of Excel for mathematics of Financial Management and both SPSS and Excel for statistical analysis necessary for research and research analysis.*

## Learning Outcomes

After completing the module the student should be able to:

- 1 Construct, analyse and solve mathematical and statistical models for finance using manual calculation and excel.
- 2 Use SPSS to produce descriptive and summary statistics.
- 3 Use SPSS to conduct basic statistical tests for differences in means and analysis of variance.
- 4 Use SPSS and Excel for multiple regression analysis and correctly determine the diagnostic statistic for testing for heteroscedasticity and auto-correlation.
- 5 Write suitable reports based on statistical information and/or the statistical analysis of financial information.
- 6 Interpret and critically evaluate statistical and/or mathematical models used in specialist publications.

## Learning Outcomes of Assessments

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

Report	1	5	6		
Closed book Examination	1	2	3	4	5

## Outline Syllabus

*Matrices - operations, vectors, scalars, determinants, Cramer's rule.*

*Differentiation - rules, partial and unconstrained optimization, Lagrange multipliers.*

*Financial mathematics - compounding, discounting, net present value, internal rate of return, annuities, bonds.*

*Statistics - descriptive statistics, probability distributions, hypothesis testing.*

*Regression - bivariate, multivariate, heteroscedasticity diagnostics, auto-correlation.*

*SPSS and other relevant research tools/software.*

## Learning Activities

The module will be delivered by a combined weekly one hour lecture and two hour workshop. The workshops will involve use of computer packages Excel and SPSS to undertake required calculations for specific exercises.

## Notes

This module will cover the necessary mathematical and statistical skills used in other modules of the MSc Financial Management programme and in the associated literature. It will also provide students with a range of quantitative techniques useful

for the dissertation module.