

COURSE SPECIFICATION DOCUMENT

Academic School/Department:	School of Business and Economics
Programme: Combined Studies	BA (Hons) Degree in Business Administration
FHEQ Level:	3
Course Title:	Functions and Applications
Course Code:	MTH 3111
Course Leader:	Ana Oliveira
Student Engagement Hours:	120
Lectures:	30
Seminar / Tutorials:	15
Independent / Guided Learning:	75
Semester:	Fall/Spring/Summer
Credits:	12 UK CATS credits 6 ECTS credits 3 US credits

Course Description:

This course is designed to provide students with the necessary mathematical background for calculus courses and its applications to some business and economics courses. It covers the fundamentals of real-valued functions, including polynomial, rational, exponential and logarithmic functions and introduces students to the concepts of derivative and integral calculus with its applications to specific concepts in micro- and macro-economics.

Prerequisites: MTH 3000 with grade C or above (or mathematics assessment exemption)

Aims and Objectives:

The aim of this course is to provide the necessary mathematical skills for more advanced mathematics courses as well as some business and economics courses and to give students the opportunity to investigate a range mathematical applications, including business, economics, and the social and life sciences.

Programme Outcomes:

A i, B i, C i

A detailed list of the programme outcomes are found in the Programme Specification. This is located at the archive maintained by the Academic Registry and found at: <http://www.richmond.ac.uk/content/academic-schools/academic-registry/program-and-course-specifications.aspx>

Learning Outcomes:

By the end of this course, successful students should be able to:

- Have an understanding of the fundamental concepts of algebra including exponents and radicals; factorising polynomials and solving inequalities
- Have an understanding and be able to graph equations of two variables using rectangular coordinates
- Have an understanding of functions and be able to solve standard problems using a library of functions
- Have an understanding of simple derivatives and integration and its applications

Indicative Content:

- Exponents and radicals; factoring polynomials
- Solving linear and non-linear inequalities
- Graphing equations in two variables
- Functions: transformation; combination; composition and inverse
- Quadratic, rational, exponential and logarithmic functions
- Exponential and logarithmic equations and models
- Derivatives and Integration with applications to Business and Economics

Assessment:

This course conforms to the Richmond University Special Programme Assessment Norms for Mathematics approved by Academic Council on 28 June 2012.

Teaching Methodology:

Course material is presented and analyzed in the following ways:

- a) Formal presentation of topics and worked exercises.
- b) Self-learning assignments and directed mathematical exercises.
- c) Participation in individual and group investigations.
- d) Where appropriate, students will be introduced to solution aids, such as hand-held calculators, mathematical tables and computer software.

Bibliography:

Larson, R. and Calvo, D. D., "*Precalculus*" CENGAGE Learning, 8th Edition, 2011.

