

## **COURSE SPECIFICATION DOCUMENT**

<b>Academic School / Department:</b>	Business and Economics
<b>Programme:</b>	BA Business Administration
<b>FHEQ Level:</b>	3
<b>Course Title:</b>	Functions and Applications
<b>Course Code:</b>	MTH 3111
<b>Course Leader:</b>	Ana Oliveira
<b>Student Engagement Hours:</b>	120 (standard 3- credit BA course)
Lectures:	30
Seminar / Tutorials:	15
Independent / Guided Learning:	75
<b>Semester:</b>	Fall, Spring, Summer
<b>Credits:</b>	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 (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:**

Ai, Bi, Ci

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/programme-and-course-specifications/>

**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 of functions and be able to solve standard problems using a library of functions
- Have an understanding of graphs of functions and be able to graph different types of functions
- Have an understanding of simple derivatives and integration and its application
- Have an understanding of how the concepts of functions apply in a Business and Economic context

**Indicative Content:**

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

**Assessment:**

This course conforms to the Math Assessment Norms approved at Academic Board (formerly Learning & Teaching Policy Committee) and located at:

<http://www.richmond.ac.uk/admitted-students/>

**Teaching Methodology:**

Course material is presented and analysed 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.

