

**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 with Applications
<b>Course Code:</b>	MTH 3120
<b>Course Leader:</b>	David Munyinyi
<b>Student Engagement Hours:</b>	160 (Standard 4- credit BA Course)
Lectures:	40
Seminar / Tutorials:	20
Independent / Guided Learning:	100
<b>Semester:</b>	Fall, Spring, Summer
<b>Credits:</b>	16 UK CATS credits 8 ECTS credits 4 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

**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 is found in the Programme Specification. This is maintained by Registry and located at: <https://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 University Assessment Norms approved at Academic Board.

**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.

**Indicative Text(s):**

Larson, R. "Precalculus" CENGAGE Learning, 10th Edition, 2017.

Frankil Demana, Bert Waits, Gregory Foley, Daniel Kennedy and Dave Bock.  
 "Precalculus: Graphical, Numerical, Algebraic" Pearson, 9<sup>th</sup> Edition 2015

**Journals**

**Web Sites**

See syllabus for complete reading list

**Change Log for this CSD:**

Nature of Change	Date Approved & Approval Body (School or AB)	Change Actioned by Registry Services
Course description	27th Nov 17	Y
Aims and objectives	27th Nov 17	
Learning outcomes	27th Nov 17	
Indicative content	27th Nov 17	
Indicative Text	Sept 2019	