Course unit title:	Finite Mathematics for Business
Course unit code:	BUS111
Type of course unit: (Compulsory/optional)	Compulsory
Level of course unit: (First, second or third cycle)	Bachelor (1st cycle)
Year of study:	1
Semester when the unit is delivered:	2
Number of ECTS credits allocated:	5
Name of lecturer(s):	TBA

Learning outcomes of the course unit:

Upon the successful completion of this course, students will be able to:

- Manipulate matrices using matrix algebra
- Perform operations on matrices such as taking the transpose, adjoint and inverse of a matrix
- Solve systems of linear equations using matrix algebra
- Determine the equation of a line with given parameters in intercept-slope and point-slope form
- Solve graphically systems of linear inequalities
- Translate optimization problems using linear inequalities
- Use linear programming techniques to maximize/minimize some objective function
- Use linear function techniques in problems arising in Business.

Mode of delivery:	Distance Learning
Prerequisites and co-requisites:	None
Recommended optional program components:	None

Course Contents:

Objective:

To develop the mathematics skills that a business student must possess in order to solve a class of problems arising in Business. Emphasis is placed on solving problems that can be formulated using matrix algebra. Linear Programming techniques are also developed for solving a class of problems which require optimization. Where appropriate, the computational

and graphing capabilities of modern technologies are utilized to enhance the learning process.

Description:

Matrix Algebra:
Introduction to Matrix concepts, Transposition, Matrix operations: Addition, Subtraction, Multiplication by Scalar. Inner Product, Matrix Multiplication, Determinant, Method of Cofactors, Inverse of a Matrix. Solution of Linear Systems of Equations using Matrices.

Equation of a line in the Cartesian Plane:
Slope, x-intercept, y-intercept, Graph of a Straight Line, Slope-Intercept Form, Point-Slope Form, Parallel Lines.

Inequalities and Systems of Linear inequalities:
Solution of linear inequalities in one unknown. Graphical solution of systems of linear inequalities in 2 variables.

Introduction to Linear Programming (LP):
Determining Graphically a Region of Feasible Solutions, Determining the Corner Points of a Region of Feasible Solutions, Corner Point Method and the Optimal Solution.

Functions:
Introduction to Function Concepts: Domain, Range, Dependent and Independent Variables, Graphical Representation of Functions, Applications involving Linear Functions: Cost, Revenue and Profit function. Straight Line Depreciation, Linear Demand, Break-Even Analysis.

Applications of finite mathematics concepts in the life and management sciences.

Use of symbolic manipulation and graphics software.

Recent developments and contemporary issues pertaining to the subject-matter of the course.

Recommended or required reading:	Michael Sullivan, FINITE MATHEMATICS: AN APPLIED APPROACH, 11th Edition, Wiley.
	Frank Budnick, S., APPLIED MATHEMATICS FOR BUSINESS, ECONOMICS AND THE SOCIAL SCIENCES McGraw-Hill
	John E. Freund/Thomas A. Williams, COLLEGE MATHEMATICS WITH BUSINESS APPLICATIONS 3rd Edition, Prentice Hall

	R. A. Barnett, M. R. Ziegler & K. Byleen, FINITE MATHEMATICS FOR BUSINESS, ECONOMICS, LIFE AND SOCIAL SCIENCES Prentice-Hall, Inc. C.H. Edwards & D. Penney, CALCULUS PROJECTS USING MAPLE, MATHEMATICA, AND MATLAB. Prentice Hall College Div Prichett and Saber, MATHEMATICS WITH APPLICATIONS IN MANAGEMENT AND ECONOMICS Irwin Michael Sullivan, COLLEGE ALGEBRA, Maxwell & Macmillan Goldstein, Schneider & Siegel, FINITE MATHEMATICS AND ITS APPLICATIONS. Prentice Hall
Planned learning activities and teaching methods:	Virtual Lectures, Workshops, Group work, Assignments and Exams
Assessment methods and criteria:	Examinations 50% Ongoing evaluation 50%
Language of Instruction:	English
Work placement(s):	No
Place of Teaching:	Blackboard Virtual Learning Platform