

Summer Semester 2016

**Course Profile**

Faculty	Business Administration		
Program	BBA		
Course Code	MAT 109		
Course Title	Business Mathematics		
Course Instructor	<p style="text-align: center;">Fakhrul Islam Lecturer Department of Business Administration E-Mail: <a href="mailto:romanaiscu@yahoo.com">romanaiscu@yahoo.com</a> Victoria University of Bangladesh</p>		
Status	Compulsory		
Credit Hours	3 Credit hours		
Teaching Methodology	<p style="text-align: center;">Class Attendance Work sheet Assignment Mid-Term Final-Term</p>		
Evaluation Method	<p style="text-align: center;">Class Attendance.....05% Work Sheet/Term Paper.....20% Assignment.....10% Mid-Term.....25% Final-Term.....40%</p>		
Grading System	<b>Numerical Grade</b>	<b>Letter Grade</b>	<b>Grade Point</b>
	80% and above	A+ (A Plus)	4.00
	75% to less than 80%	A (A Regular)	3.75
	70% to less than 75%	A- (A Minus)	3.50
	65% to less than 70%	B+ (B Plus)	3.25
	60% to less than 65%	B (B Regular)	3.00
	55% to less than 60%	B- (B Minus)	2.75
	50% to less than 55%	C+ (C Plus)	2.50
	45% to less than 50%	C (Regular)	2.25
	40% to less than 45%	D (Regular)	2.00
	Less than 40%	F (Fail)	0.00
Course Objective	To provide a solid foundation in the mathematical tools most useful to students of a business and stimulate the students' interest in mathematics by emphasizing the practical usefulness of the techniques.		
Book(s)	<p>Basic Texts: 1. D.C. Sancheti &amp; V.K. Kapoor, Business Mathematics</p> <p>Reference Books: 1. Ann. J. Hughes, Applied Mathematics: For Business, Economics and Social Sciences. 2. R.L. Childers, Mathematics for Managerial Decision.</p>		

**Lecture Plan**

Lecture No.	Main Topic	Sub-topics
1 <sup>st</sup> & 2 <sup>nd</sup>	<b><u>Chapter 01 :</u></b> Review of the Basic Algebra	Basic Algebraic Formulae and their Uses, fractions, Percentages and Decimals, Exponents and Radicals, Factoring, Simplification, Logarithms, Equations, Real Number System, Inequalities and Their Solution Sets.
3 <sup>rd</sup> & 4 <sup>th</sup>	<b><u>Chapter 02:</u></b> Set Theory	Concept, Definition, Characteristics of Set, Basic Set Operations, Venn Diagram, Business Application.
5 <sup>th</sup> & 6 <sup>th</sup>	<b><u>Chapter 03:</u></b> Matrix	Definition, Types of Matrices, Square and Identity Matrix, Matrix Operations, Addition, Subtraction, Multiplication, Determinants, Scalar Multiplication, Properties of Determinants, Minor Co-factor Matrix, Co-factor Expansion, Matrix Transpose, Ad joint Matrix, Matrix Inverse using Co-factor and Gaussian Methods.
7 <sup>th</sup> to 9 <sup>th</sup>	<b><u>Chapter 04:</u></b> The Derivative and Rules of Differentiation	Average rate of Change, Existence of the Derivative of a Function, Rules of Differentiation, Marginal Analysis, Additional Derivative Rules, Higher Order derivatives and Applications of the Derivatives.
10 <sup>th</sup> to 12 <sup>th</sup>	<b><u>Chapter 05:</u></b> Mathematics of Finance	Definitions, Simple and Compound Interest, Compound Amount Formula, Present Value of an Amount, Effective Interest Rate, Continuous Compounding, Annuities, Ordinary annuities and their Present and Furure Value, Sinking Fund, Amortization.
<b><u>Mid-Term Exam</u></b>		

13 <sup>th</sup> to 15 <sup>th</sup>	<b>Chapter 06:</b> Optimization Using Calculus	Second Derivative Test for Relative Extreme, Locating Absolute Maxima and Minima, Applied Maxima and Minima Problems, Single Variable Business and Economic Models, Profit Maximization, Production and Inventory Model.
16 <sup>th</sup> to 18 <sup>th</sup>	<b>Chapter 07:</b> Multivariate Calculus	Functions of Several Variables, Partial derivatives, Second-order Partial Derivatives, Higher Order Partial Derivatives, Implied Partial Derivatives, Extreme for Multivariate Functions, Constraint Optimization and Lagrange Multipliers, Production and Inventory Models, Business Application.
19 <sup>th</sup> to 21 <sup>st</sup>	<b>Chapter 08:</b> Integral Calculus	The Relationship between Integral and Differential Calculus, Rules of Integral Calculus, Fundamental Theorem of Integral Calculus, Geometric Interpretation of Integration, Define Integral, Application of Integral Calculus, Determination of Consumers' and Producers' Surplus, The Definite Integral as a Measure of Total Change.
22 <sup>nd</sup> to 24 <sup>th</sup>	<b>Chapter 09:</b> Linear Programming	Definition, General Linear Programming, Basic Feasible Solution, Convex Combination, Optimal Solution, Slack and Surplus Variable, Net Evaluation, Artificial Variable etc, Solution of Linear Programming Problem, Graphical Method, Simplex Method, Duality Theory, Solution of Dual Problems.
Class test & Overall Class Review		
<b><u>Final Exam</u></b>		

**Instructions for Assignments & Term Paper :**

To be announced in the class

**Examination Rules:**

According to the existing Examination Policy of VUB

**Others:**

Any other issues & queries related to the course will be discussed and explained as and when required.

Prepared by Fakhrul Islam, Lecturer, Department of Business Administration

