NIRMA UNIVERSITY

Institute:	Institute of Commerce
Name of Programme:	Bcom (Hons.) Programme
Course Code:	
Course Title:	Mathematics – I
Course Type:	Introductory Course
Year of introduction:	2022 (Semester I)

L	T	Practical component				C
		LPW	PW	W	S	
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Course Learning Outcomes (CLO):

At the end of the course, students will be able to:

- Classify the mathematical techniques to solve business problems.   BL-2
- Develop the understanding of basic mathematical concepts used in business studies. BL-3
- Value the role of mathematics in managerial studies.   BL-5

Syllabus: **Total Teaching hours: 30**

Unit	Syllabus	Teaching hours
I	**Set Theory, Permutation and Combination** • Basic Concepts sets, Type of sets, Set Operations, Venn Diagram. • Cardinality of a set, Cartesian product of two sets, Applications of set theory. • Introduction to permutation and combination, Fundamental principle of counting, Simple properties and restricted combination. • Applications of Permutation and Combination.	07
II	**Coordinate Geometry and Quadratic Equations** • Cartesian coordinate system, Distance formula. • General equation of a straight line, Slope of a straight line. • Perpendicular and parallel lines, Standard forms of straight line. • Applications of straight lines. • Quadratic equations, Roots of quadratic equations. • Relation between roots and coefficients of quadratic equation. • Formation of quadratic equation when the roots are given.	07
III	**Functions and Progressions** • Basic Concept of function, Types of functions. • Some special functions: logarithmic and exponential functions and their properties. • Composition of function.	09

	• Graphical representation of functions, Transformation of graphs. • Functions used in economics and business. • Applications of functions - Break-even analysis • Sequence and series, General terms of sequence • Arithmetic progression (AP), General term of AP, Sum to first n- terms of an AP, Arithmetic Mean. • Geometric progression (GP), General term of GP, Sum to first n- terms of a GP, Geometric Mean. • Application of AP and GP.	
IV	**Limit and Continuity** • Informal Idea of Limit, Definition, Basic Concepts, Working rules to evaluate limits. • Indeterminate forms, Standard rules of Limits. • Continuity & Discontinuity of a function.	07

Self Study:	
Suggested Readings/ References:	• Kapoor, V.K., Business Mathematics, Sultan Chand & Sons. • Raghavachari, M., Mathematics for Management, latest edition, Tata McGraw Hill Publication. • Sancheti, D.C & Kapoor, V.K., Business Mathematics, Sultan Chand Publications. • Jacques, I., Mathematics for Economics and Business, Pearson Education. • Mariappan, P., Business Mathematics, Pearson. • Renshaw, G., Mathematics for Economics, Oxford University Press. • Quazi, Z., Khanna, V. K., and Bhambri, S. K., Business Mathematics, Vikas Publishing House. • Stewart, J., Clegg, D. K., & Watson, S., Calculus: early transcendentals. Cengage Learning. • Thomas Jr, G. B., Weir, M. D., Hass, J., Heil, C., Thomas' Calculus Early Transcendentals, Pearson.
Suggested List of Experiments:	
Suggested Case List:	

L = Lecture, T = Tutorial, P = Practical, C = Credit