

UNIVERSITY OF MADRAS
B.Sc. DEGREE PROGRAMME IN MATHEMATICS
 SYLLABUS WITH EFFECT FROM 2023-2024

FOUNDATION COURSE – BRIDGE MATHEMATICS
Common to B.Sc Mathematics With Computer Applications

Title of the Course		Foundation course - Bridge Mathematics					
Paper Number		FOUNDATION I					
Category	Core	Year	I	Credits	2	Course Code	134B1A
		Semester	I				
Instructional Hours per week		Lecture	Tutorial	Lab Practice	Total		
		2	-	--	2		
Pre-requisite		12 th Standard Mathematics					
Objectives of the Course		To bridge the gap and facilitate transition from higher secondary to tertiary education; To instil confidence among stakeholders and inculcate interest for Mathematics;					
Course Outline		UNIT-I: Algebra: Binomial theorem, General term, middle term, problems based on these concepts. Hours 6					
		Unit II: Sequences and series (Progressions). Fundamental principle of counting. Factorial n. Hours:6					
		Unit III: Permutations and combinations, Derivation of formulae and their connections, simple applications, combinations with repetitions, arrangements within groups, formation of groups. Hours 6					
		Unit IV: Trigonometry: Introduction to trigonometric ratios, proof of $\sin(A+B)$, $\cos(A+B)$, $\tan(A+B)$ formulae, multiple and sub multiple angles, $\sin(2A)$, $\cos(2A)$, $\tan(2A)$ etc., transformations sum into product and product into sum formulae, inverse trigonometric functions, sine rule and cosine rule Hours 6					
Recommended Text		Unit V: Calculus: Limits, standard formulae and problems, differentiation, first principle, uv rule, u/v rule, methods of differentiation, application of derivatives, integration - product rule and substitution method. Hours 6					
		1. NCERT class XI and XII text books. Total Hours 30					
		2. Any State Board Mathematics text books of class XI and XII					
Website and e-Learning Source		https://nptel.ac.in					

