

Lecture Plan							
Name of the College: Government College of Arts, Science and Commerce, Sanquelim-Goa							
Name of Faculty: Prajyot Maruti Patil			Subject: Mathematics				
Paper code: MAT-100 Foundational Mathematics (Pract)			Program: B.Sc.			Division: -	
Academic year: 2026-27			Semester: I			Total Lectures: 30	
Course Objectives: 1. To develop logical reasoning among students in order to be able to organize all aspects of mathematics in such a way that at the base are the most fundamental concepts, assumptions and principles, and the other aspects depend on this base.							
Expected Course Outcome: 1) Infer the truth of various sentences and its equivalents and outline various properties of sets. 2) Examine and Identify the types of relations and functions. 3) Make use of the strong and weak induction. 4) Solve systems of linear equations. 5) Discuss the properties of determinants.							
Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books
June	22/06/2026	27/06/2026	2				
	29/06/2026	04/07/2026	2	Solving systems of linear equations using elementary operations.		Smart Board PDF	W. K. Nicholson: Linear Algebra with Applications, 4 th

July							Edition, McGraw – Hill Ryerson Limited, 2003.
	06/07/2026	11/07/2026	2	Solving systems of linear equations using elementary operations.		Smart Board PDF	W. K. Nicholson: Linear Algebra with Applications, 4 th Edition, McGraw – Hill Ryerson Limited, 2003.
	13/07/2026	18/07/2026	2	Reducing a matrix to row – echelon form using Gaussian algorithm.			W. K. Nicholson: Linear Algebra with Applications, 4 th Edition, McGraw – Hill Ryerson Limited, 2003.
	20/07/2026	25/07/2026	2	Solving homogeneous systems of equations.		Data projector	W. K. Nicholson: Linear Algebra with Applications, 4 th Edition, McGraw – Hill Ryerson Limited, 2003.
Jul/Aug	27/07/2026	01/08/2026	2	Computing determinants using the properties of determinants.			W. K. Nicholson: Linear Algebra with Applications, 4 th Edition, McGraw – Hill Ryerson Limited, 2003.
August	03/08/2026	08/08/2026	2	Solving a system of equations using Cramer’s rule.			W. K. Nicholson: Linear Algebra with Applications, 4 th Edition, McGraw –

							Hill Ryerson Limited, 2003.
	10/08/2026	15/08/2026	2	Identifying and using quantifiers, Negating statements with single and multiple quantifiers, Compound statements with quantifiers, Conjunction and disjunction of statements, and Negation of a compound statement		Smart Board	Ajit Kumar, S. Kumaresan, and B. K. Sarma: A Foundation Course in Mathematics, Narosa Publishers, 2018.
	17/08/2026	22/08/2026	2	Different forms of implications, Converse of implications, Negating implications, and Contrapositive of implications.			Ajit Kumar, S. Kumaresan, and B. K. Sarma: A Foundation Course in Mathematics, Narosa Publishers, 2018.
	24/08/2026	29/08/2026	2	Different types of proofs in mathematics.		Smart Board PDF	Ajit Kumar, S. Kumaresan, and B. K. Sarma: A Foundation Course in Mathematics, Narosa Publishers, 2018.
August/Sep t	31/08/2026	05/09/2026	2	Operations on sets like union, intersection, set difference, and complementation.			Ajit Kumar, S. Kumaresan, and B. K. Sarma: A Foundation Course in Mathematics, Narosa Publishers, 2018.
Sep	07/09/2026	12/09/2026	2	Identifying one – one and onto functions – I.		Smart Board	Ajit Kumar, S. Kumaresan, and B. K. Sarma: A Foundation Course in

							Mathematics, Narosa Publishers, 2018.
	14/09/2026	19/09/2026	0	Ganesh Chaturthi Break (14–19 Sep)			
	21/09/2026	26/09/2026	2	Finding “natural” bijections between given sets and finding the inverse of a bijective function.		Smart Board	Ajit Kumar, S. Kumaresan, and B. K. Sarma: A Foundation Course in Mathematics, Narosa Publishers, 2018.
Sep/Oct	28/09/2026	03/10/2026	2	Inverse image of subsets under functions. Identifying the type of relation and Obtaining equivalence classes of an equivalence relation.		Smart Board	Ajit Kumar, S. Kumaresan, and B. K. Sarma: A Foundation Course in Mathematics, Narosa Publishers, 2018.
Oct	05/10/2026	10/10/2026	2	Using induction principles to establish statements.			Ajit Kumar, S. Kumaresan, and B. K. Sarma: A Foundation Course in Mathematics, Narosa Publishers, 2018.
	12/10/2026	14/10/2026	0				

*** Assessment Rubrics**

Component	Max Marks
ISA 1	7.5

ISA 2	7.5
Practical	25
Project	Nil
Semester End Exam	60