

Lecture Plan		
Name of the College: Government College of Arts, Science and Commerce, Sanquelim-Goa		
Name of Faculty: Vishal Vinayak Gawas	Subject: Mathematics	
Paper code: MAT-100- Foundational Mathematics(Practical)	Program: B.Sc.	Division: -
Academic year: 2025-26	Semester: I	Total Lectures: 30
Course Objectives: 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 system of linear equations. 5) Discuss the properties of determinants.		
Student Learning Outcome: Student will be able to 1) Recollect the basic definitions and theorems in foundations and explain the various proofs and concepts involved. 2) Apply the concepts of linear equations and determinants to explain proofs and solve problems effectively.		

Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books
June	20/06/2025	21/06/2025	2				Ajit Kumar, S. Kumaresan, and B. K. Sarma: <i>A Foundation Course in Mathematics</i> , Narosa Publishers, 2018.
	23/06/2025	28/06/2025	2			Smart Board PDF	Ajit Kumar, S. Kumaresan, and B. K. Sarma: <i>A Foundation Course in Mathematics</i> , Narosa Publishers, 2018.
July	30/06/2025	05/07/2025	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 PDF	Ajit Kumar, S. Kumaresan, and B. K. Sarma: <i>A Foundation Course in Mathematics</i> , Narosa Publishers, 2018.
	07/07/2025	12/07/2025	2	Different forms of implications, Converse of implications, Negating implications, and Contrapositive of implications.			Ajit Kumar, S. Kumaresan, and B. K. Sarma: <i>A Foundation Course in</i>

							<i>Mathematics</i> , Narosa Publishers, 2018.
	14/07/2025	19/07/2025	2	Different types of proofs in mathematics		Data projector	Ajit Kumar, S. Kumaresan, and B. K. Sarma: <i>A Foundation Course in Mathematics</i> , Narosa Publishers, 2018.
	21/07/2025	26/07/2025	2	Operations on sets like union, intersection, set difference, and complementation			Ajit Kumar, S. Kumaresan, and B. K. Sarma: <i>A Foundation Course in Mathematics</i>, Narosa Publishers, 2018.
July August	28/07/2025	02/08/2025	2	Identifying one – one and onto functions – I			Ajit Kumar, S. Kumaresan, and B. K. Sarma: <i>A Foundation Course in Mathematics</i> , Narosa Publishers, 2018.
August	04/08/2025	09/08/2025	2	Identifying one – one and onto functions – II.		Smart Board	Ajit Kumar, S. Kumaresan, and B. K. Sarma: <i>A Foundation Course in Mathematics</i> , Narosa Publishers, 2018.

	11/08/2025	16/08/2025		Finding “natural” bijections between given sets and finding the inverse of a bijective function.			Ajit Kumar, S. Kumaresan, and B. K. Sarma: <i>A Foundation Course in Mathematics</i> , Narosa Publishers, 2018.
	18/08/2025	23/08/2025	2	Inverse image of subsets under functions.		Smart Board PDF	Ajit Kumar, S. Kumaresan, and B. K. Sarma: <i>A Foundation Course in Mathematics</i> , Narosa Publishers, 2018.
	25/08/2025	30/08/2025	0 Chaturthi Break 26/08/25 To 01/09/25				Ajit Kumar, S. Kumaresan, and B. K. Sarma: <i>A Foundation Course in Mathematics</i> , Narosa Publishers, 2018.
September	02/09/2025	06/09/2025	2	Identifying the type of relation and Obtaining equivalence classes of an equivalence relation.		Smart Board	Ajit Kumar, S. Kumaresan, and B. K. Sarma: <i>A Foundation Course in Mathematics</i> , Narosa Publishers, 2018.
	08/09/2025	13/09/2025	2	Using induction principles to establish statements			Ajit Kumar, S. Kumaresan, and B. K. Sarma: <i>A Foundation Course in</i>

							<i>Mathematics</i> , Narosa Publishers, 2018.
	15/09/2025	20/09/2025	2	Solving systems of linear equations using elementary operations.		Smart Board	Ajit Kumar, S. Kumaresan, and B. K. Sarma: <i>A Foundation Course in Mathematics</i> , Narosa Publishers, 2018.
	22/09/2025	27/09/2025	2	Reducing a matrix to row – echelon form using Gaussian algorithm		Smart Board	Ajit Kumar, S. Kumaresan, and B. K. Sarma: <i>A Foundation Course in Mathematics</i> , Narosa Publishers, 2018.
September October	29/09/2025	04/10/2025	2 Gandhi Jayanti / Dussehra	Solving homogeneous systems of equations.			Ajit Kumar, S. Kumaresan, and B. K. Sarma: <i>A Foundation Course in Mathematics</i> , Narosa Publishers, 2018.
October	06/10/2025	11/10/2025	2	Computing determinants using the properties of determinants.			Ajit Kumar, S. Kumaresan, and B. K. Sarma: <i>A Foundation Course in Mathematics</i> , Narosa Publishers, 2018.
	13/10/2025	18/10/2025		Practical Exam			

*** Assessment Rubrics**

Component	Max Marks
ISA 1	7.5
ISA 2	7.5
Practical	Nil
Project	Nil
Semester End Exam	60