Semester Lecture Plan

Name of the college: Government college of Arts, Science and Commerce , Sanquelim Goa		
Name of Faculty: Rohit R. Redkar	**Subject: Mathematics**	
Paper code: MAT-100	**Program/Course: F.Y.B.Sc. (Practical)**	**Division: -**
Academic year: 2024 – 2025	**Semester: I**	**Total Lectures: 15**

Course Objectives:
To develop logical reasoning among students in order to be able to organize all aspects of mathematics.

Course Learning Outcome: The students will be able to

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

Month	Lectures From: To:	No. of lectures	Topic, Subtopic to be covered	Exercise	ICT Tools	Reference books

July	02/07/2024	06/07/2024	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	Problem Solving	Chalk-board	Ajit Kumar, S. Kumaresan, and B. K. Sarma: A Foundation Course in Mathematics
July	08/07/2024	13/07/2024	2	Different forms of implications, converse of implications, negating implications, and contrapositive of implications	Problem Solving	Chalk-board	Ajit Kumar, S. Kumaresan, and B. K. Sarma: A Foundation Course in Mathematics
July	15/07/2024	20/07/2024	2	Different types of proofs in mathematics	Problem Solving	Chalk-board	Ajit Kumar, S. Kumaresan, and B. K. Sarma: A Foundation Course in Mathematics
July	22/07/2024	27/07/2024	2	Operations on sets like union, intersection, set difference, and complementation	Problem Solving	Chalk-board	Ajit Kumar, S. Kumaresan, and B. K. Sarma: A Foundation Course in Mathematics
July-August	29/07/2024	03/08/2024	2	Identifying one-one and onto functions-I	Problem Solving	Chalk-board	Ajit Kumar, S. Kumaresan, and B. K. Sarma: A

							Foundation Course in Mathematics
August	05/08/2024	10/08/2024	2	Identifying one-one and onto functions-II	Problem Solving	Chalk-board	Ajit Kumar, S. Kumaresan, and B. K. Sarma: A Foundation Course in Mathematics
August	12/08/2024	17/08/2024	2	Finding natural bijections between given sets and finding the inverse of bijective functions	Problem Solving	Chalk-board	Ajit Kumar, S. Kumaresan, and B. K. Sarma: A Foundation Course in Mathematics
August	19/08/2024	24/08/2024	2	Inverse image of subsets under functions	Problem Solving	Chalk-board	Ajit Kumar, S. Kumaresan, and B. K. Sarma: A Foundation Course in Mathematics
August	26/08/2024	31/08/2024	2	Identifying the type of relation and obtaining equivalence classes of an equivalence relation.	Problem Solving	Chalk-board	Ajit Kumar, S. Kumaresan, and B. K. Sarma: A Foundation Course in Mathematics
September	13/09/2024	14/09/2024	2	Using induction principles to establish statements	Problem Solving	Chalk-board	Ajit Kumar, S. Kumaresan, and B. K. Sarma: A

							Foundation Course in Mathematics
September	16/09/2024	21/09/2024	2	Solving system of linear equations using elementary operations	Problem Solving	Chalk-board	W. K. Nicholson: *Linear Algebra with Applications,* 4th Edition, McGraw – Hill Ryerson Limited, 2003.
September	23/09/2024	28/09/2024	2	Reducing a matrix to row echelon form using Gaussian algorithm	Problem Solving	Chalk-board	W. K. Nicholson: *Linear Algebra with Applications,* 4th Edition, McGraw – Hill
October	01/10/2024	05/10/2024	2	Solving homogeneous system of equations	Problem Solving	Chalk-board	W. K. Nicholson: *Linear Algebra with Applications,* 4th Edition, McGraw – Hill Ryerson Limited, 2003.
October	07/10/2024	12/10/2024	2	Computing determinants using the properties of determinants	Problem Solving	Chalk-board	W. K. Nicholson: *Linear Algebra*

							with Applications, 4th Edition, McGraw – Hill Ryerson Limited, 2003.
October	14/10/2024	19/10/2024	2	Solving a system of equations using Cramer's rule	Problem Solving	Chalk-board	W. K. Nicholson: *Linear Algebra with Applications,* 4th Edition, McGraw – Hill Ryerson Limited, 2003.

*** Assessment Rubrics**

Component	Max Marks
ISA 1	**-**
ISA 2	**-**
Practical	**25**
Project	**-**
Semester End Exam	**-**