

P.S.B. GOVT. DEGREE COLLEGE LAMBGAON
B.Sc. (Mathematics)- SEMISTER-I
Teaching Plan For Academic Session 2020-2021

Course Teacher: Mayank

Course Title and Other Specifications

Course Title:	ALGEBRA AND MATRICES
Course Number:	BM-103
Credits:	
Maximum Marks:	70 Marks

Course Description:

UNIT	TOPIC	NUMBER OF LECTURES	NAME OF THE COURSE TEACHER
UNIT 1:	Sets, Operations on sets	4	Myank
	Relations, Equivalence relations	3	
	Partition Functions	3	
	Algebraic structures, Group, Example of groups,	4	
	Subgroups	4	
	Permutation group	4	
UNIT 2:	Order of an element, Cyclic -group,	7	Myank
	Coset- decomposition	4	
	Lagrange's theorem and its consequences	4	
UNIT 3:	Quotient group	4	Myank
	Homomorphism	4	
	Isomorphism	4	
UNIT 4:	Rank of a matrix	3	Myank
	Invariance of rank under elementary transformations	3	
	Adjoint of matrices	3	
	Inverse of matrices,	3	

	Reduction to normal form.	4	
UNIT 5:	Solutions of linear homogeneous and non-homogeneous equations with number of equations and unknowns upto four	6	Myank
	Solutions of a system of linear equations using matrices	6	
	Eigen values, Eigen vectors	4	
	Characteristic equation	4	
	Cayley Hamilton theorem and its Applications.	5	

NOTE 1: The calculation for the total number of lectures is done on the basis of 90 teaching days per semester and 6 periods

[5 for theory and 1 for tutorial] allotted for the course per week during the semester. The duration of one lecture is 60 minutes.

* The distribution of maximum marks for the internal assessment will be according to the rules of the university.

Recommended Reading List

1. John B. Fraleigh, A First Course in Abstract Algebra, 7th Ed., Pearson, 2002.
2. Joseph A Gallian, Contemporary Abstract Algebra, 4th Ed., Narosa, 1999.
3. A.I. Kostrikin, Introduction to Algebra, Springer Verlag, 1984.
4. Richard Bronson, Theory and Problems of Matrix Operations, Tata McGraw Hill, 1989.

Countersigned (Principal)

Sig. (Head)

Sig. (Course Teacher)