Curriculum Plan: B.Sc.(H)(Mathematics)(I-SEM) (ALGEBRA) (2021-22)

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Marks Distribution	Theory	75 Marks
	Internal Assessment	Assignments 10 Marks Class- Test 10 Marks Presentation 5 Marks
Classes Assigned	Lectures	5 per week

Reference	[1]	Titu Andreescu and Dorin Andrica, Complex Numbers from A to Z, Birkhauser, 2006.
	[2]	Edgar G. Goodaire and Michael M. Parmenter, Discrete Mathematics with Graph Theory (3rd Edition), Pearson Education (Singapore) Pvt. Ltd., Indian Reprint, 2005.
	[3]	David C. Lay, Linear Algebra and its Applications (3rd Edition), Pearson Education Asia, Indian Reprint, 2007.
	Week	Topics
	1st week *22-27 NOV 2021*	Systems of linear equations, Row reduction and Echelon forms.
	2nd week 29 NOV- 4 DEC 2021	Vector equations, The matrix equation Ax = b, Solution sets of linear systems, The inverse of a matrix.
	3rd week 6- 11 DEC 2021	Subspaces, Linear independence, Basis and Dimension.
	4th week 13- 18 DEC 2021	The Rank of a matrix and applications.
	5th week 20-25 DEC 2021	Introduction to linear transformation, Matrix of a linear transformation, Applications to computer graphics.
	6th week 27 DEC 2021- 1 JAN 2022	Eigenvalues, Eigenvectors and Characteristic Equation and Cayley-Hamilton theorem.
	7th week 3- 8 JAN 2022	Polynomials, The Remainder and Factor theorem, Synthetic division, Factored form of a polynomial.
	8th week 10-15 JAN 2022	Fundamental theorem of Algebra, Relations between the roots and the coefficients of polynomial equations, Theorems on imaginary, Integral and rational roots.
	9th week 17-22 JAN 2022	Polar representation of complex numbers, The nth roots of unity
	10th week 24- 29 JAN 2022	De-Moivre's theorem for rational indices and its applications.
	11th week 31 JAN- 5 FEB 2022	Equivalence relations, Functions, Composition of functions.
	12th week 7- 12 FEB 2022	Invertibility and inverse of functions, One to one correspondence and cardinality of a set.
	13th week 14- 19 FEB 2022	Well-ordering property of positive integers, Division algorithm in Z, Divisibility and Euclidean algorithm, Modular arithmetic and basic properties of congruences.
	14th week 21- 26 FEB 2022	Principles of Mathematical Induction, Statements of Fundamental Theorem of Arithmetic.
	15th week/ with 4 days 28 FEB- 10 MARCH 2022	Revision.