Government College, Chhachhrauli

Summary of Lesson Plan

Name of Teacher: Dr. Indu Bala Academic Session :2023-24

Class : B. Sc. III Semester : VI Subject :Real and Complex Analysis

Unit	Topic/Chapters to be covered	Duration	Assignment and Tests
1	Jacobians, Beta and Gama functions	**01 - 07 Jan**	
1	Double and Triple integrals, Dirichlets integrals	**08 - 14 Jan**	
1	change of order of integration in double integrals	**15 - 21 Jan**	
2	Fourier's series: Fourier expansion of piecewise monotonic functions	**22-28 Jan**	
2	Properties of Fourier Co-efficients, Dirichlet's conditions	**29 Jan-4 Feb**	
2	Parseval's identity for Fourier series, Fourier series for even and odd functions	**5-11 Feb**	
2	Half range series, Change of Intervals	**12-18 Feb**	

3	Extended Complex Plane, Stereographic projection of complex numbers	**19-25 Feb**	
3	continuity and differentiability of complex functions	**26 Feb-3 Mar**	
3	Analytic functions	**4-10 Mar**	
3	Cauchy-Riemann equations. Harmonic functions	**11-17 Mar**	
4	Mappings by elementary functions: Translation	**18-24 Mar**	
	HOLI Break	**25-31 Mar**	
4	Rotation, Magnification and Inversion	**1-7 April**	
4	Conformal Mappings, Mobius transformations	**8-14 April**	

4	Fixed pints, Cross ratio, Inverse Points and critical mappings.	**15-21 April**	
	Revision of all Units	**22-30 April**	

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Summary of Lesson Plan

Name of Teacher: Dr. Indu Bala Academic Session :2023-24

Class : B. Sc. II Semester : IV Subject :Programming in C and Numerical Methods

Unit	Topic/Chapters to be covered	Duration	Assignment and Tests
1	Programmer's model of a computer	**01 - 07 Jan**	
1	Algorithms, Flow charts	**08 - 14 Jan**	
1	Data types	**15 - 21 Jan**	
1	Operators and expressions, Input / outputs functions	**22-28 Jan**	
2	Decisions control structure: Decision statements, Logical and conditional statements	**29 Jan-4 Feb**	
2	Implementation of Loops, Switch Statement & Case control structures	**5-11 Feb**	

2	Functions, Preprocessors and Arrays.	**12-18 Feb**	
3	Strings: Character Data Type, Standard String handling Functions	**19-25 Feb**	
3	Arithmetic Operations on Characters. Structures: Definition, using Structures, use of Structures in Arrays	**26 Feb-3 Mar**	
3	Arrays in Structures. Pointers: Pointers Data type	**4-10 Mar**	
3	Pointers and Arrays, Pointers and Functions.	**11-17 Mar**	
3	Solution of Algebraic and Transcendental equations: Bisection method, Regula-Falsi method,	**18-24 Mar**	
	HOLI Break	**25-31 Mar**	
3	Secant method, Newton-Raphson's method. Newton's iterative method for finding pth root of a number, Order of convergence of above methods	**1-7 April**	

4	Simultaneous linear algebraic equations: Gauss-elimination method, Gauss-Jordan method, Triangularization method (LU decomposition method)	**8-14 April**	
4	Crout's method, Cholesky Decomposition method. Iterative method, Jacobi's method, Gauss-Seidal's method, Relaxation method.	**15-21 April**	
	Revision of all Units	**22-30 April**	

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Summary of Lesson Plan

Name of Teacher: Dr. Indu Bala Academic Session :2023-24

Class : B. Sc. II Semester : IV Subject :Algebra & Number Theory

Unit	Topic/Chapters to be covered	Duration	Assignment and Tests
1	Symmetric, Skew symmetric, Hermitian and skew Hermitian matrices, Elementary operations on matrices	**12-18 Feb**	
1	Rank of a matrix,Inverse of a matrix, Linear dependence and independence ofrows and columns of matrix, Row rank and column rank of amatrix	**19-25 Feb**	
1	Eigen values, Eigen vectors and characteristic equation of a matrix, Minimal polynomial of a matrix	**26 Feb-3 Mar**	
1	Cayley-Hamiltontheorem and its use in finding the inverse of a matrix, Unitaryand orthogonal matrices.	**4-10 Mar**	
2	Relations between the roots and coefficients of general polynomial equation in one variable, Solutions of polynomial equations having conditions on roots	**11-17 Mar**	
2	Common roots andmultiple roots, Transformation of equations	**18-24 Mar**	

	HOLI BREAK	**25-31 Mar**	
2	Nature of the roots of an equation, Descarte's rule of signs.	**1-7 April**	
3	Solutions of cubic equations (Cardon's method), Biquadratic equations and their solutions	**8-14 April**	
3	Divisibility, Greatest common divisor (gcd), Least common multiple	**15-21 April**	
3	Prime numbers, Fundamental theorem ofarithmetic.	**22-30 April**	
4	Linear congruences, Fermat's theorem	**01 -07 May**	
4	Euler's theorem, Wilson's theorem and its converse	**08-14 May**	
4	Chinese Remaindertheorem, Linear Diophantine equations in two variables	**15-21 May**	

	Revision of all Units		