

Lesson Plan (Even Semester) Session 2023-24

Name of the Assistant Professor:- DINESH KUMAR

Class: - B. Sc. {Non.Medical} Final Year (6th-Sem.)

Subject: - Mathematics  
Paper – Real and Complex Analysis

Period	Topics	Topic of Assignments / Tests to be given to the students
01 Jan to 15 Jan	Jacobians, Beta and Gama functions.	
16 Jan to 31 Jan	Double and Triple integrals, Dirichlets integrals, change of order of integration in double integrals	Unit Test
01 Feb to 15 Feb	Fourier's series: Fourier expansion of piecewise monotonic functions, Properties of Fourier Co-efficients,	
16 Feb to 29 Feb	Dirichlet's conditions, Parseval's identity for Fourier series, Fourier series for even and odd functions, Half range series, Change of Intervals	Unit test
01 March to 15 March	Extended Complex Plane, Stereographic projection of complex numbers, continuity and differentiability of complex functions.	
16 March to 31 March	Analytic functions, Cauchy-Riemann equations. Harmonic Function	Unit Test
01 April to 15 April	Mappings by elementary functions: Translation, rotation, Magnification and Inversion.	Unit Test
16 April to 30 April	Conformal Mappings, Mobius transformations. Fixed points, Cross ratio, Inverse Point and critical Mapping Revision	

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Lesson Plan (Even Semester) Session 2023-24

Name of the Assistant Professor:- DINESH KUMAR

Class: - B. Sc. {Non.Medical} Final Year (6th-Sem.)

Subject: - Mathematics  
Paper – Linear Algebra

Period	Topics to be covered	Topic of Assignments / Tests to be given to the students
01 Jan to 15 Jan	Vector spaces, subspaces, Sum and Direct sum of subspaces, Linear span, Linearly Independent and dependent subsets of a vector space. Finitely generated vector space.	
16 Jan to 31 Jan	Existence theorem for basis of a finitely generated vector space, Finite dimensional vector spaces, Invariance of the number of elements of bases sets, Dimensions, Quotient space and its dimension. Homomorphism and isomorphism of vector spaces,	Unit Test
01 Feb to 15 Feb	Null Space, Range space of a linear transformation, Rank and Nullity Theorem, Algebra of Linear Transformation, Minimal Polynomial of a linear transformation, Singular and non-singular linear transformations, Matrix of a linear Transformation,	
16 Feb to 29 Feb	Change of basis, Eigen values and Eigen vectors of linear transformation, Inner product spaces, Cauchy-Schwarz inequality, Orthogonal vectors, Orthogonal complements, Orthogonal sets	Unit test
01 March to 15 March	Basis, Bessel's inequality for finite dimensional vector spaces, Gram-Schmidt, Orthogonalization process	
16 March to 31 March	Adjoint of a linear transformation and its properties, Unitary linear transformations.	Unit Test
01 April to 15 April	Revision	Unit Test



## Lesson Plan (Even Semester) Session 2023-24

Name of the Assistant Professor: - DINESH KUMAR

Class: - B.Sc 3rd Year (6th-Sem.)

Subject: - Mathematics  
DYNAMICS (BM-363)

Period	Topics to be covered	Topic of Assignments / Tests to be given to the students
05 Jan to 15 Jan	Velocity and Acceleration along radial, transverse, tangential and normal directions.	
16 Jan to 31 Jan	Relative velocity and acceleration, Simple harmonic motion, Elastic Strings	
01 Feb to 15 Feb	Mass, Momentum and Force, Newton's laws of Motion	Unit Test
16 Feb to 29 Feb	Work, Power and Energy, Definitions of Conservative forces and Impulsive Forces	
01 March to 15 March	Motion on smooth and rough plane curves	Unit Test
16 March to 31 March	Projectile motion of a particle in a plane, Vector angular velocity	
01 April to 15 April	General motion of a rigid body Central Orbits, Kepler's laws of Motion	Unit Test
16 April to 30 April	Motion of a particle in three dimensions, Acceleration in terms of different co-ordinate systems	

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