

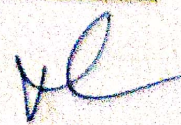
CLASS: B.Sc./B.A. - II Year IV Sem

NAME OF PAPER - PARTIAL DIFFERENTIAL EQUATION AND
LAPLACE TRANSFORMATION

PAPER CODE(for B.Sc) - CML-406

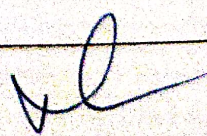
PAPER CODE(for B.A.) - BAMH-204

SR. NO.	MONTHS	PERIOD	TOPICS
1.	1st	1 st week 2 nd week 3 rd week Last week	1. Partial differential equations: Formation, order and degree. 2. Linear and non-linear partial differential equations of the first order: Complete solution. 3. Singular solution, General solution, Solution of Lagrange's linear equations. 4. Charpit's general method of solution, Compatible systems of first order equations, Jacobi's method.
2.	2nd	1 st week 2 nd week 3 rd week Last week	1. Linear partial differential equations of second and higher orders. Linear and non-linear homogeneous equations with constant coefficients. 2. Partial differential equation with variable coefficients reducible to equations with constant coefficients. 3. Equations reducible to linear equations with constant coefficient. Classification of linear partial differential equations of second order, Hyperbolic, Parabolic and elliptic types. 4. Reduction of second order linear partial differential equations to Canonical(Normal) forms and their solutions.
3.	3rd	1 st week 3 rd week Last week	1. Solution of linear hyperbolic equations, Monge's method. Cauchy's problem. Characteristic equations and characteristic curves of second order partial differential equation. 2. Method of separation of variables : Solution of Laplace's equation. 3. Series solution of differential equations - Power series method.
4.	4th	1 st week 2 nd week 3 rd week Last week	1. Bessel equation and its solution: Bessel functions. 2. Legendre differentials equations and and their solutions: Legendre functions. REVISION REVISION


N. Prasad Kumar
A-Prasad

CLASS: B.Sc./B.A. - II Year IV Sem
NAME OF PAPER – MECHANICS-I
PAPER CODE(for B.Sc) -CML-407
PAPER CODE(for B.A.) - BAMH-205

SR. NO	MONTHS	PERIOD	TOPICS
1.	1st	1st week 2nd week 3rd week Last week	1. Forces acting at a point. 2. Parallel Forces 3. Moments. 4. Couples.
2.	2nd	1st week 2nd week 3rd week Last week	1. Forces in three dimensions. Poinots central axis. Wrenches . 2 Null lines and Planes. 3. Motion along a Plane curve. Vector angular velocity. 4. Relative Motion.
3.	3rd	1st week 3rd week Last week	1. Simple harmonic motion. 2. Newton's laws of motion. 3. Central Orbits
4.	4th	1st week 2nd week 3rd week Last week	1. Kepler laws of motion 2. Revision 3. Revision 4. Revision



CLASS: B.Sc./ B.A. III Year VI Sem
NAME OF PAPER - LINEAR ALGEBRA
PAPER CODE (for B.Sc.) – CML-605
PAPER CODE (for B.A.) –BAMH-304

SR. NO.	MONTHS	PERIOD	TOPICS
1.	1st	1 st week 2 nd week 3 rd week Last week	1. Vector spaces, subspaces, 2. Sum and Direct sum of subspaces, 3. Linear span, Linearly Independent and dependent subsets of a vector space. 4. Finitely generated vector space, Existence theorem for basis of a finitely generated vector space,
2.	2nd	1 st week 2 nd week 3 rd week Last week	1. Finite dimensional vector spaces, Invariance of the number of elements of bases sets, Dimensions, 2. Quotient space and its dimension Homomorphism and isomorphism of vector spaces, 3. Linear transformations and linear forms on vector spaces, Vector space of all the linear transformations 4. Dual Spaces, Bidual spaces, annihilator of subspaces of finite dimensional vector spaces
3.	3rd	1 st week 2 nd week 3 rd week Last week	1. Null Space, Range space of a linear transformation, Rank and Nullity Theorem, 2. Algebra of Linear Transformation 3. Minimal Polynomial of a linear transformation, Singular and non-singular linear transformations, 4. Matrix of a linear Transformation, Change of basis.
4.	4th	1 st week 2 nd week 3 rd week Last week	1. Eigen values and Eigen vectors of linear transformations 2. Inner product spaces, Cauchy-Schwarz inequality, Orthogonal vectors, Orthogonal complements, Orthogonal sets and Basis, 3. Bessel's inequality for finite dimensional vector spaces, Gram-Schmidt, Orthogonalization process, 4. Adjoint of a linear transformation and its properties, Unitary linear transformations.

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Narendra / sr
A. P. M. H.

CLASS: B.Sc./B.A. - III Year VI Sem
NAME OF PAPER – REAL AND COMPLEX ANALYSIS
PAPER CODE(for B.Sc) -CML-607
PAPER CODE(for B.A.) - BAMH-306

SR. NO	MONTHS	PERIOD	TOPICS
1.	1st	1 st week 2 nd week 3 rd week Last week	1 Definition and examples of metric spaces, neighborhoods, 2. Limit points, interior points, open and closed sets, closure and interior, boundary points, 3.Subspace of a metric space, equivalent metrics, 4.Cauchy sequences, completeness, Cantor's intersection theorem.
2.	2nd	1 st week 2 nd week 3 rd week Last week	1. Baire's category theorem, Contraction Principle, 2. Continuous functions, uniform continuity, compactness for metric spaces, sequential compactness, 3. Bolzano-Weierstrass Property, total boundedness, finite intersection property, 4. Continuity in relation with compactness, connectedness.
3.	3rd	1 st week 2 nd week 3 rd week Last week	1 Improper integrals and their convergence, comparison tests, 2.Abel's and Dirichlet's tests, Frullani's integral, 3.Integral as a function of a parameter. Continuity, 4. Differentiability and integrability of an integral of a function of a parameter
4.	4th	1 st week 2 nd week 3 rd week Last week	1. Topology of complex numbers: Trigonometric, exponential, logarithmic and hyperbolic trigonometric functions. 2. Extended complex plane, Stereographic projection of complex numbers. 3. Continuity and differentiability of complex functions. Analytic functions, Cauchy-Riemann equations, harmonic conjugates, harmonic functions. 4. Construction of analytic functions: direct method and Milne-Thomson method

SR. NO	MONTHS	PERIOD	TOPICS
1.	1st	1st week	1. Analytical conditions of equilibrium of co-planar forces: Equilibrium of three forces, conditions of equilibrium, trigonometric theorem. 2. conditions of equilibrium of co-planar forces (First, Second and Third form); Friction: Definition of friction and basic laws, 3. problems based on equilibrium of rods and ladders, 4. Centre of gravity: Basic concepts
		2nd week	
		3rd week	
		Last week	
2.	2nd	1st week	1. centre of gravity of a uniform rod, a thin uniform lamina in the form of a parallelogram 2. a thin uniform triangular lamina, three uniform rods forming a triangles 3. a uniform quadrilateral lamina, lamina in the form of a trapezium, 4. centre of gravity of a body by integration. Motion of a particle attached to an elastic string,
		2nd week	
		3rd week	
		Last week	
3.	3rd	1st week	1. Hooke's law, motion of horizontal and vertical elastic strings 2. Definition of work, Power and Energy, work done by a variable force, work done in stretching an elastic string, principle of work and energy 3. Definitions of Conservative forces and Impulsive forces. conservative system of forces, principle of conservation of energy, impulse of a constant force and a variable force 4.. Motion on smooth and rough plane curves. Motion of a particle on smooth curves, motion on the outside and inside of a smooth vertical circle,
		2nd week	
		3rd week	
		Last week	
4.	4th	1st week	1. cycloidal motion, motion on a rough curve under gravity. 2. Projectile motion of a particle in a plane, velocity at any point of the trajectory, directions of projection for a particle, range and time of flight on an inclined plane., 3. directions of projection for a given velocity and a given range; range and time of fight down an inclined plane. 4. Revision
		2nd week	
		3rd week	
		Last week	

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CLASS: B.Sc./ B.A. III Year VI Sem
NAME OF PAPER – SOLID GEOMETRY
PAPER CODE (for B.Sc.) – CML-608
PAPER CODE (for B.A.) –BAMH-307

SR. NO.	MONTHS	PERIOD	TOPICS
1.	1st	1 st week 2 nd week 3 rd week Last week	1. Central Conicoids 2. Equation of tangent plane. 3. Director sphere.. 4. Normal to the conicoids
2.	2nd	1 st week 2 nd week 3 rd week Last week	1 Polar plane of a point, 2. Enveloping cone of a coinoid 3. Enveloping cylinder of a coinoid 4. Enveloping cylinder of a coinoid
3.	3rd	1 st week 2 nd week 3 rd week Last week	1. Paraboloids:, 2. Algebra of Liner Transformation 3. Minimal Polynomial of a linear transformation, Singular and non-singular linear transformations, 4. Matrix of a linear Transformation, Change of basis.
4.	4th	1 st week 2 nd week 3 rd week Last week	1.Eigen values and Eigen vectors of linear transformations 2. Inner product spaces, Cauchy-Schwarz inequality, Orthogonal vectors, Orthogonal complements, Orthogonal sets and Basis, 3. Bessel's inequality for finite dimensional vector spaces, Gram-Schmidt, Orthogonalization process, 4. Adjoint of a linear transformation and its properties, Unitary linear transformations.

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CLASS: B.Sc./ B.A. III Year VI Sem

SKILL ENHANCEMENT

NAME OF PAPER – SOLID GEOMETRY

PAPER CODE (for B.Sc.) – CML-608(i)

PAPER CODE (for B.A.) –BAMH-307(i)

SR. NO.	MONTHS	PERIOD	TOPICS
1.	1st	1 st week & 2 nd week 3 rd week & Last week	Central Conicoids: Equation of tangent plane. Director sphere. Normal to the conicoids.
2.	2nd	1 st week & 2 nd week 3 rd week & Last week	Polar plane of a point. Enveloping cone of a coinoid. Enveloping cylinder of a coinoid.
3.	3rd	1 st week & 2 nd week 3 rd week & Last week	Paraboloids: Circular section, Plane sections of conicoids.
4.	4th	1 st week & 2 nd week 3 rd week & Last week	Generating lines. Confocal conicoid. Reduction of second degree equations