LESSON-PLAN (Session 2024-25) EVEN SEMESTER

Name of Teacher :-Anuradha
Designation: ASSISTANT PROFESSOR
Subject: MATHEMATICS (LINEAR ALGEBRA)
Class: B.Sc and BA 6th Semester

Subject/ Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	January	Vector spaces, subspaces, Sum and Direct sum of subspaces, Linear span, Linearly Independent and dependent subsets of a vector space. Finitely generated vector space, Existence theorem for basis of a finitely generated vector space, Finite dimensional vector spaces, Invariance of the number of elements of basis sets, Dimensions, Quotient space and its dimension.	Assignment will be taken on topic vector space and subspaces.
2	February / March	Homomorphism and isomorphism of vector spaces, Linear transformations and linear forms on vector spaces, Vector space of all the linear transformations. Dual Spaces, Bidual spaces, annihilator of subspaces of finite dimensional vector spaces. Null space, Range space of a linear transformation, Rank and Nullity Theorem.	Class test will be taken
3	April	Algebra of Linear Transformation, Minimal Polynomial of a linear transformation, Singular and non-singular linear transformations, Matrix of a linear transformation, Change of basis, Eigen values and Eigen vectors of linear transformations.	Assignment will be taken on topic Linear Transformation.
4	April / May	Inner product spaces, Cauchy-Schwarz inequality, Orthogonal vectors, Orthogonal complements, Orthogonal sets and Basis, Bessel's inequality for finite dimensional vector spaces, Gram-Schmidt Orthogonalization process, Adjoint of a linear transformation and its properties, Unitary linear transformations.	Group discussion will be done.

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LESSON-PLAN (Session 2024-25) EVEN SEMESTER

Name of Teacher: Ms. Anuradha
Designation: Assistant professor
Subject: Real and Complex Analysis
Class: Bsc6th sem & BA 6th Sem

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	Jan, Feb	Jacobians, Beta and Gamma functions, Double and triple integrals, Dorichlet's integrals, Change of order of integrayion in double integrals.	Assignment 1
2	Feb, March	Fourier's series:Fourier expansion of piecewiss monotonic functions, properties of Fourier coefficients, Dirichlet's conditions, Parseval's identity ForFourier series, Fourier series for even and odd functions, Half range series, Change of intervals.	Class Test, Group Discussion
3	March April	Extended Complex plane, Stereographic projection of complex numbers, continuity and differetiability of complex functions, Analytic functions, cauchy-Riemann equatio s. Harmonic functions	Class Test will be taken
4	April May	Mappinggs by elimentry functions:Translation, Rotation, Magnification and Inversion, Conformal Mappings, Mobius transformations. Fixed points, cross ratio, Inverse Points and Critical mappings.	Group Discussion and quiz will be organized

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LESSON-PLAN (Session 2022-23) EVEN SEMESTER

Name of Teacher: Anuradha
Designation: Assistant Professor
Subject: Dynamics
Class: B.Scand BA 6th sem

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	January	Velocity and acceleration along radial, transverse, tangential and normal directions. Relative velocity and acceleration. Simple harmonic motion. Elastic strings.	Group discussion
2	February/March	Mass, Momentum and Force. Newton's laws of motion. Work, Power and Energy. Definitions of Conservative forces and Impulsive forces.	ASSIGNMENT
3	March/April	Motion on smooth and rough plane curves. Projectile motion of a particle in a plane. Vector angular velocity.	UNIT TEST
4	May	General motion of a rigid body Central Orbits, Kepler's laws of motion. Motion of a particle in three dimensions. Acceleration in terms of different co-ordinate systems.	REVISION

***Vacation as per university calendar**
2 assignments and 01 unit test will be taken as per schedule.

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LESSON-PLAN (Session 2024-25) EVEN SEMESTER

Name of Teacher: Anuradha
Designation: ASSISTANT PROFESSOR
Subject :Analytical Geometry & Vector Calculus
Class: B.Scand BA(SEM-4th)

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	Feb-Mar	General equation of second degree: Classification of conic sections; centre, asymptotes, axes, eccentricity, foci and directrices of conics. Tangent at any point to a conic, chord of contact, pole of line to a conic, director circle of a conic. Polar equation of a conic, tangent and normal to a conic, confocal conics.	CLASS TEST
2	Mar-Apr	Sphere: General form, Plane section of a sphere. Sphere through a given circle. Intersection of two spheres, tangent plane and line, polar plane and line, orthogonal spheres, radical plane of two spheres and co-axal system of spheres.Cone: Equation of a cone, right circular cone, quadric cone, enveloping cone. Tangent plane and condition of tangency.	CLASS TEST
3	April	Cylinder: Right circular cylinder and enveloping cylinder.Central Conicoids: Equation of tangent plane. Director sphere. Normal to the conicoids. Polar plane of a point. Enveloping cone of a conicoid, Enveloping cylinder of a conicoid, confocal conicoid, reduction of second degree equations.	Assignment
4	May	Scalar and Vector product of three vectors, four vectors,reciprocal vectors, vector differentiation and derivative along a curve, directional derivatives; Gradient of a scalar point function, divergence and curl of vector point functions, their geometrical meanings and vector identities.Vector integration: line integral, surface integral and volume integral. Theorem of Gauss, Green, Stoke and problems based on these.	Revision

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LESSON-PLAN(Session2024-25)EVENSEMESTER

NameofTeacher:-Anuradha
Designation:ASSISTANTPROFESSOR
Subject:Algebra and Number Theory
Class: B.Sc & BA2 n d Semester

Subject/Paper: Sr.No.	Months	Topics tobecovered	Remarks if any,
1	Feb March	Symmetric, Skew symmetric, Hermitian and skew Hermitian matrices, Elementary operations on matrices, Rank of a matrix, Inverse of a matrix, Linear dependence and independence of rows and columns of matrix, Row rank and column rank of a matrix, Eigen values, Eigen vectors and characteristic equation of a matrix, Minimal polynomial of a matrix, Cayley-Hamilton theorem and its use in finding the inverse of a matrix, Unitary and orthogonal matrices.	Assignment will betaken
2	March	Relations between the roots and coefficients of general polynomial equation in one variable, Solutions of polynomial equations having conditions on roots, Common roots and multiple roots, Transformation of equations, Nature of the rootsof an equation, Descarte's rule of signs.	Classtestwillbeta ken.
3	April	Solutions of cubic equations (Cardon's method), Biquadratic equations and their solutions.Divisibility, Greatest common divisor (gcd), Least common multiple (lcm), Prime numbers, Fundamental theorem of arithmetic	Assignmentwillbet aken
4	May	Linear congruences, Fermat's theorem, Euler's theorem,Wilson's theorem and its converse, Chinese Remainder theorem, Linear Diophantine equations in two variables.	Groupdiscussion willbedone.

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LESSON-PLAN (Session 2024-25) EVEN SEMESTER

Name of Teacher: Anuradha
Designation: Assistant professor
Subject: Business Mathematics II
Class:BCom 2nd Sem

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	Feb	Differentiation, derivative of simple functions and other functions (excluding trigonometric functions) having applications in business studies, Maxima and mimima of Revenue, Cost. Demand, Production, Profit functions and other functions related to business and commerce	Assignment 1
2	Feb, March	Integration: Definite and indefinite (simple functions excluding trigonometric functions), basic rules of integration, application of integration in commercial and business problems.	Class Test, Group Discussion
3	March April	Binomial Theorem, Permutations and Combinations. Linear Programming Formulation of linear programming problems (LPP) and their solution by graphical and simplex methods	Class Test will be taken
4	April May	Applications of linear programming in solving problems related to business and commerce.	Group Discussion Revision

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