

Lesson Plan

Name of the Assistant/ Associate Professor: Dr. Anuja Yadav Sem...1<sup>st</sup>

Class and Section: B.Sc + B.A 1<sup>st</sup>

Subject: Maths (Algebra)

Month	Topics
21 <sup>st</sup> July 2023 to 31 <sup>st</sup> July 2023	Symmetric, Skew-symmetric, Hermitian & Skew Hermitian, Rank of matrices, Inverse of matrix, Row rank & column rank of a matrix. Eigen value, eigen vectors and the char. eqn. of a matrix. Cayley Hamilton thm and its use in finding the inverse of matrix. (Test)
1 <sup>st</sup> August 2023 to 31 <sup>st</sup> August 2023	Applications of matrices to a system of linear equations. Theorems on consistency of a system of linear eqns. Unitary and Orthogonal matrices, Bilinear and Quadratic forms. (Test)
1 <sup>st</sup> September 2023 to 30 <sup>th</sup> Sept. 2023	Relation between the roots of and coeffs. of general polynomial equation in one variable. Solutions of polynomial equations having conditions on roots.
1 <sup>st</sup> October 2023 to 31 <sup>st</sup> Oct. 2023	Common root and multiple roots. Transformation of equations. (Test)
1 <sup>st</sup> Nov. 2023 to 24 <sup>th</sup> Nov. 2023	Nature of the roots of an eqn. Descartes rule of signs. Solutions of cubic eqn. Biquadratic equations and their solutions  Assignment (Test)

Anuja Yadav  
Teacher's Signature

BAIJNATH CHAUDHARY GOVT. COLLEGE FOR WOMEN, NANGAL CHAUDHARY

Lesson Plan

Name of the Assistant/ Associate Professor: Dr. Anuja Yadav Sem. 1<sup>st</sup>

Class and Section: B.Sc. + B.A. 1<sup>st</sup> Subject: Maths (Solid Geometry)

Month	Topics
21 <sup>st</sup> July 2023 to 31 <sup>st</sup> July 2023	General eq <sup>n</sup> of second degree. Tracing of conics. Tangent at any point to the conic. Chord of contact, pole of line to the conic, director circle of conic. System of conic, Confocal conic. Polar eq <sup>n</sup> of a conic. (Test)
1 <sup>st</sup> August 2023 to 31 <sup>st</sup> August 2023	Sphere: Plane section of a sphere, Sphere through a given circle. Co-axial system of sphere. Cone: Right circular cone, enveloping cone and reciprocal cone. (Test)
1 <sup>st</sup> September 2023 to 30 <sup>th</sup> Sept. 2023	Cylinder: Right circular cylinder & enveloping cylinder Central Conicoids: Equation of tangent plane. Director sphere, Normal to the conicoids.
1 <sup>st</sup> October 2023 to 31 <sup>st</sup> Oct. 2023	Polar plane of a point. Enveloping cone of a conicoid. Enveloping cylinder of a conicoid. (Test)
1 <sup>st</sup> Nov. 2023 to 24 <sup>th</sup> Nov. 2023	Paraboloids: Circular section, Plane sections of conicoids. Generating lines. Confocal conicoids. Reduction of second degree equation. Assignment (Test)

Anuja Yadav  
Teacher's Signature

Lesson Plan

Name of the Assistant/ Associate Professor: Dr. Anuja Yadav Sem. 3<sup>rd</sup>

Class and Section: B.Sc.+B.A 2<sup>nd</sup>

Subject: Maths (P.D.E.)

Month	Topics
21 <sup>st</sup> July 2023 to 31 <sup>st</sup> July 2023	Partial Diff. Equations: Formation, order & degree, Complete solution, Singular solution, General solution, Solution of Lagrange's linear equations, Charpit's general method of solution. Jacob's method (Test)
1 <sup>st</sup> August 2023 to 31 <sup>st</sup> August 2023	Linear partial Diff Eq <sup>n</sup> . of 2 <sup>nd</sup> & higher order, Linear and non-linear homo. & Non homo. eq <sup>n</sup> with constant coeff., Partial diff. eq <sup>n</sup> with variable coeff. reducible to eq <sup>n</sup> with constant coeff., their C.F and P.I, Eq <sup>n</sup> . reducible to linear eq <sup>n</sup> with constant coeff. (Test)
1 <sup>st</sup> September 2023 to 30 <sup>th</sup> Sept. 2023	Classification of linear partial diff. equation of second order, Hyperbolic, parabolic and elliptic types, Reduction of second order linear partial diff. eq <sup>n</sup> to canonical form and their solution. (Test)
1 <sup>st</sup> October 2023 to 31 <sup>st</sup> Oct. 2023	Solution of linear hyperbolic equation, Monge's method. Cauchy's problem for second order partial diff. equation. Char. Eq <sup>n</sup> & Char. Curves. (Test)
1 <sup>st</sup> Nov. 2023 to 24 <sup>th</sup> Nov. 2023	Method of Separation of variable: Solution of Laplace's equation, Wave equation, Diffusion eq <sup>n</sup> in Cartesian co-ordinate system. (Assignment) Test

Anuja Yadav  
Teacher's Signature

BAIJNATH CHAUDHARY GOVT. COLLEGE FOR WOMEN, NANGAL CHAUDHARY

Lesson Plan

Name of the Assistant/ Associate Professor: Dr. Anuja Yadav Sem. 5th

Class and Section: B.Sc + B.A 3<sup>rd</sup> Subject: Maths (Real Analysis)

Month	Topics
21 <sup>st</sup> July 2023 to 31 <sup>st</sup> July 2023	Riemann integral, Integrability of continuous and monotonic functions, The <del>function</del> fundamental theorem of integral calculus, Mean value theorem of integral calculus. (Test)
1 <sup>st</sup> August 2023 to 31 <sup>st</sup> August 2023	Improper integral and their convergence, Comparison test, Abel's and Dirichlet's tests, Frullani's integral, Integral as a function of a parameter. Continuity, Diff. and integrability of an integral of a function of a parameter. (Test)
1 <sup>st</sup> September 2023 to 30 <sup>th</sup> Sept. 2023	Definition and examples of metric space, neighbourhoods, limit points, interior points, open and closed set, closure and interior, boundary points, subspace of a metric space, equivalent metrics,
1 <sup>st</sup> October 2023 to 31 <sup>st</sup> Oct. 2023	Cauchy sequence, completeness, Cantor's intersection theorem, Baire's category theorem, Contraction principle. Continuous functions, uniform continuity, compactness for metric space, (Test).
1 <sup>st</sup> Nov. 2023 to 24 <sup>th</sup> Nov. 2023	sequential compactness, Bolzano-Weierstrass property, total boundedness, finite intersection property, connectedness, components, continuity in relation with connectedness.  Assignment (Test)

Anuja Yadav  
Teacher's Signature