

GOVT.COLLEGE FOR WOMEN, BASTARA
LESSON-PLAN (Session 2025-26) EVEN SEMESTER

Name of Teacher: Anuradha

Designation: Assistant Professor

Subject: Mathematics for Commerce and Social Sciences(MDC)

Class: BA 2nd Sem

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	Jan	Matrices and Determinants: Definition of a matrix, Order, Equality, Types of matrices, Operations on matrices: addition, multiplication and multiplication with a scalar and their simple properties.Minors, Co-factors, Determinant, Properties of determinants and applications of determinants in finding the area of a triangle, Adjoint and inverse of a square matrix, Solutions of simultaneous linear equations.	Group discussion
2	Feb	Differentiation, Derivatives of simple functions and other functions having applications in business and social studies, Maxima and minima of a function and their applications to Revenue, Cost, Demand, Production, Profit functions and other functions related to commercial and social Problems.Integration of simple functions and its applications in commercial and economic problems.	ASSIGNMENT
3	March	Simple interest and compound interest.Annuities: Types of annuities, Present value and amount of an annuity (including the case of continuous compounding), Valuation of simple loans and debentures, Problems related to sinking funds.	UNIT TEST
4	April	Linear Programming: Formulation of linear programming problems (LPP) and their solution by graphical and Simplex methods. Applications of linear programming in solving social science and business problems.	REVISION

*Vacation as per university calendar

2 assignments and 01 unit test will be taken as per schedule.

Kamlesh
Principal
GCW Bastara (Karnal);

A/L
A/P Mathematics

GOVT. COLLEGE FOR WOMEN, BASTARA
LESSON-PLAN (Session 2025-26) EVEN SEMESTER

Name of Teacher :-Anuradha

Designation:ASSISTANTPROFESSOR

Subject:Analytical Geometry & Vector Calculus

Class: B.sc and B.A.6th Semester

Subject/ Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	Jan	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.	Assignment will be taken
2	Feb	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 will be taken
3	March	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 will be taken
4	April	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.	Group discussion will be done.

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Kamlesh
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Anh

A/P Mathematics

GOVT.COLLEGE FOR WOMEN, BASTARA
LESSON-PLAN (Session 2025-26) EVEN SEMESTER

Name of Teacher: Anuradha
 Designation: Assistant Professor
 Subject: Algebra and Number Theory
 Class: B.Scand B.A. 2nd Sem

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	Jan	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.	Group discussion
2	FEB	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 roots of an equation, Descarte's rule of signs.	ASSIGNMENT
3	March	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.	UNIT TEST
4	April	Linear congruences, Fermat's theorem, Euler's theorem, Wilson's theorem and its converse, Chinese Remainder theorem, Linear Diophantine equations in two variables.	REVISION

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Anuradha
 A/P Mathematics

GOVT.COLLEGE FOR WOMEN, BASTARA
LESSON-PLAN (Session 2025-26) EVEN SEMESTER

Name of Teacher: Anuradha
Designation: Assistant Professor
Subject: Business Mathematics II
Class: B.Com 2nd sem

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

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2 assignments and 01 unit test will be taken as per schedule.

Kaulesh
Principal
GCW Bastara (Karnal)

Anuradha
A/P Mathematics

Govt. College for Women, Ghorraunda (Bastara)

Name of Teacher : Ms. Anuradha

Designation : Assistant Professor

Subject : Numerical Analysis

Class : BA 6th Sem

Months

Topics to be Covered

Jan

Round-off error and computer arithmetic, Local and global truncation errors, Algorithms and convergence.

Numerical methods for solving algebraic and transcendental equations : Bisection method, False position method, Fixed point iteration method, Newton-Raphson method and Secant method.

Newton's iterative method for finding n th root of a number.

Revision & assignment.

Feb

Numerical methods for solving simultaneous linear equations : Gauss-elimination method, Gauss-Jordan method, Triangularization method (LU decomposition method), Crout's method, Cholesky decomposition method.

Iterative methods : Jacobi's method, Gauss-Seidal method, Relaxation method. Revision

March

Finite Differences operators and their relations.

Interpolation with equal intervals : Gregory-Newton forward and backward difference interpolations.

Months

Topics to be Covered

Interpolation with unequal intervals : Newton's divided difference formulae, Lagrange's Interpolation formulae.

Central Differences : Gauss forward and Gauss backward interpolation formulae, Sterling formula, Bessel's formula. Piecewise linear interpolation, Cubic spline interpolation.

Numerical Differentiation : first and second derivative of a function using interpolation formulae. Assignment

April

Numerical Integration : Newton-Cote's Quadrature formula, Trapezoidal rule, Simpson's one-third and three-eighth rule, Chebychev formula, Gauss Quadrature formula.

Numerical solution of ordinary differential equations: Single step method - Picard's method, Taylor's series method, Euler's method, Runge-Kutta Method.

Multiple step methods : Predictor-corrector method, Modified Euler's method, Milne-Simpson's method. Revision.

Kaulesh
Principal
JCW Bastara (Karnal)

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