

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2023-24) ODD SEMESTER

Name of Teacher: Jitender Kumar

Designation: Associate professor

Subject: Mathematics

Class: B.A.III Numerical Analysis

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	August- September	Finite difference operators and their relations. Finding the missing terms and effect of error in a difference tabular values, Interpolation with equal intervals: Newton's forward and Newton's backward interpolation formulae. Interpolation with unequal intervals Newton's divided difference, Lagrange's Interpolation formulae, Hermite formula.	Class Test Fortnightly
2	October	Central Differences: Gauss forward and Gauss's backward interpolation formulae Sterling, Bessel formula. Probability distribution of random variables, Binomial distribution, Poisson's distribution, Normal distribution: Mean, Variance and Fitting.	Class Test Fortnightly Assignment-1
3	November	Numerical Differentiation: Derivative of a function using interpolation formulae as Studied in sections 1 & 11. Eigen Value problems: Power method, Jacobi's method, Given's method, House Holder's method QR-method, Lanczo's method.	Class Test Fortnightly Unit test Assignment-2
4	December	Numerical Integration: Newton-Cote's Quadrature formula, Trapezoidal rule, Simpson's one-third and three-eighth rule, Chebychev formula,	Class Test Fortnightly

		Gauss Quadrature formula. Numerical solution of ordinary differential equations: Single step method- Picard's method. Taylor's series method. Euler's method Runge-Kutta Methods. Multiple step methods, Predictor-corrector method. Modified Euler's method, Milne-Simpson's method.	
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*Vacation as per university calendar

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

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2023-24) ODD SEMESTER

Name of Teacher: Jitender Kumar

Designation: Associate professor

Subject: Mathematics

Class: B.Sc (CS).III Numerical Analysis

Subject/Paper : Sr. No.	Months	Topics to be covered	Remarks if any,
1	August-September	Finite difference operators and their relations. Finding the missing terms and effect of error in a difference tabular values, Interpolation with equal intervals: Newton's forward and Newton's backward interpolation formulae. Interpolation with unequal intervals Newton's divided difference, Lagrange's Interpolation formulae, Hermite formula.	Class Test Fortnightly
2	October	Central Differences: Gauss forward and Gauss's backward interpolation formulae Sterling, Bessel formula. Probability distribution of random variables, Binomial distribution, Poisson's distribution, Normal distribution: Mean, Variance and Fitting.	Class Test Fortnightly Assignment-1

3	November	<p>Numerical Differentiation: Derivative of a function using interpolation formulae as studied in sections 1 & 11.</p> <p>Eigen Value problems: Power method, Jacobi's method, Given's method, House Holder's method QR-method, Lanczo's method.</p>	<p>Class Test Fortnightly</p> <p>Unit test</p> <p>Assignment-2</p>
4	December	<p>Numerical Integration: Newton-Cote's Quadrature formula, Trapezoidal rule, Simpson's</p> <p>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 Methods. Multiple step methods, Predictor-corrector method. Modified Euler's method, Milne-Simpson's method.</p>	<p>Class Test Fortnightly</p>

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

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2023-24) ODD SEMESTER

Name of Teacher: Dr.Alpana Sharma

Designation: Assistant Professor

Subject: Advanced Calculus

Class: B.Sc. (C.S., N.M), BA 3rd sem

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	August	Continuity, Sequential continuity, properties of continuous functions, Uniform continuity, Chain rule of differentiability. Mean value theorems, Rolle's theorem and Lagrange's mean value theorem and their geometrical interpretations.	Assignment 1
2	September	Taylor's Theorem with various form of remainders, Darboux intermediate value theorem for derivatives, Indeterminate forms. Limit and continuity of real valued functions of two variables. Partial differentiation, Total differentials; Composite functions and implicit functions	Group Discussion
3	Oct	Change of variables. Homogeneous functions and Euler's theorem on homogeneous functions. Taylor's theorem for functions of two variables. Differentiability of real valued functions of two variables. Schwarz and Young's theorem. Implicit function theorem. Maxima, Minima and saddle points of two variables. Lagrange's method of multipliers	Class test
4	Nov	Curves: Tangents, Principal normals, Binormals, Serret-Frenet formulae. Locus of the centre of curvature, spherical curvature, locus of centre of spherical curvature, Involutives, Evolutes, Bertrand curves. Surfaces : Tangent planes , one parameter family of surfaces, envelopes.	Group Discussion
5	December	Revision	

- Vacation as per university calendar
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P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2023-24) ODD SEMESTER

Name of Teacher: DR. Alpana Sharma

Designation: Assistant professor

Subject: Business Mathematics

Class: B.Com Sec B Sem 1st

Subject/Paper : Sr. No.	Months	Topics to be covered	Remarks if any,
1	Aug 2023	Definition, type and algebra of matrices, operations on matrices, scalar multiplication and multiplication of matrices and their simple properties. Determinants, calculation of values of determinants upto 3 rd order, minor, co-factors and applications of determinants in finding the area of triangle, Adjoint of a matrix.	Assignment
2	Sept 2023	Solution of a system of linear equations having unique solution and involving no more than 3 variables by crammer rule and matrix method. Representation of sets, equivalent sets, power set, compliment of a set, Venn Diagrams, Union and intersection of sets, De-Morgan's laws.	Group Discussion
3	Oct 2023	Logical statements and truth tables. Logarithms: Laws of operation, log tables. Arithmetic progression.	Mid Term Test
4	Nov 2023	Geometric Progressions . Compound interest and annuities: Different types of interest rates, types of annuities, present value and amount of an annuity, valuation of simple loans and debentures, sinking funds.	Class test
5	Dec 2023	Revision	

- Vacation as per university calendar
- Mid- term test and assignment as per university norms

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2023-24) ODD SEMESTER

Name of Teacher: DR. Alpana Sharma

Designation: Assistant professor

Subject: INTRODUCTORY MATHEMATICS

Class: MDC MATHS 1st

Subject/Paper : Sr. No.	Months	Topics to be covered	Remarks if any,
1	Sept 2023	Sets and their representation, Empty sets, Finite and Infinite sets, universal sets, Union and intersection of sets, Difference of two sets, Complement of a set, Venn diagram, De Morgan's laws and their application. Definition, type and algebra of matrices, operations on matrices, scalar multiplication and multiplication of matrices and their simple properties. Determinants, calculation of values of determinants upto 3 rd order, minor, co-factors and applications of determinants in finding the area of triangle, Adjoint of a matrix.	Assignment
2	Oct 2023	Complex numbers, Operations on complex numbers, Modulus and argument of a complex number. Linear inequalities, Algebraic solutions of linear inequalities in two variables and their graphical representation. Quadratic equations, Solution of quadratic equations.	Mid Term Test
3	Nov 2023	Arithmetic progression, Geometric progression, Harmonic progression .	
4	Dec 2023	Straight lines: Slope of a line and angle between two lines, Different forms of equation of a line: parallel to coordinate axis , Point –slope form, Slope intercept form, Two point form, general form.	

- Vacation as per university calendar
- Mid- term test and assignment as per university norms

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2023-24) ODD SEMESTER

Name of Teacher: Vikram Gupta

Designation: Assistant professor

Subject: Mathematics

Class: Bsc III (NM) Numerical Analysis

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	August	Finite difference operators and their relations. Finding the missing terms and effect of error in a difference tabular values, Interpolation with equal intervals: Newton's forward and Newton's backward interpolation formulae. Interpolation with unequal intervals Newton's divided difference, Lagrange's Interpolation formulae, Hermite formula.	
2	September	Central Differences: Gauss forward and Gauss's backward interpolation formulae Sterling, Bessel formula. Probability distribution of random variables, Binomial distribution, Poisson's distribution, Normal distribution: Mean, Variance and Fitting.	
3	October	Numerical Differentiation: Derivative of a function using interpolation formulae as studied in sections 1 & 11. Eigen Value problems: Power method, Jacobi's method, Given's method, House Holder's method QR-method, Lanczo's method.	

4	November	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 Methods. Multiple step methods, Predictor-corrector method. Modified Euler's method, Milne-Simpson's method.	
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*Vacation as per university calendar

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

P.I.G.GOV.T.COLLEGEFORWOMEN,JIND
LESSON-PLAN(Session2023-24)ODDSEMESTER

NameofTeacher:VikramGupta
Designation:Assistantprofessor
Subject:Mathematics
Class:BscII(CS & NM)STATICS

Subject/Paper: Sr.No.	Months	Topicstobecovered	Remarksifany,
1	August	Compositionandresolutionofforces.Parallelforces.MomentsandCouples	
2	September	Analyticalconditionsofequilibriumofcoplanarforces.Friction.CentreofGravity.	

3	October	Virtualwork.Forcesinthreedimensions.Poinsotscentral axis.	
4	November I	Wrenches.Nulllinesandplanes.Stableandunstableequilibrium.	

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2assignmentsand01unittestwillbetakenasperschedule.

P.I.G.GOV.T.COLLEGEFORWOMEN,JIND
LESSON-PLAN(Session2023-24)ODDSEMESTER

NameofTeacher:VikramGupta
Designation:Assistantprofessor
Subject:Mathematics
Class:Bsc -2nd(CS &NM) P.D.E

Subject/Paper: Sr.No.	Months	Topicstobecoved	Remarksifany,
1	August	Partial differential equations : Formation, order and degree, Linear and non-linear partial differential equations of the first order: Complete solution, Singular solution, General solution, Solution of Lagrange's linear equations, Charpit's general method of solution. Compatible systems of first order equations, Jacobi's method.	

2	September	Linear partial differential equations of second and higher orders, Linear and non linear homogeneous and non-homogeneous equations with constant coefficients, Partial differential equation with variable coefficients reducible to equations with constant coefficients, their complimentary functions and particular integrals, Equations reducible to linear equations with constant coefficients.	
3	October	Classification of linear partial differential equations of second order, Hyperbolic, parabolic and elliptic types, Reduction of second order linear partial differential equations to Canonical (Normal) forms and their solutions, Solution of linear hyperbolic equations, Monge's method for partial differential equations of second order.	
4	November	Cauchy's problem for second order partial differential equations. Characteristic equations and characteristic curves of second order partial differential equation, Method of separation of variables: Solution of Laplace's equation, Wave equation (one and two dimensions), Diffusion (Heat) equation (one and two dimension) in Cartesian coordinate system.	

Vacation as per university calendar

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

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**P.I.G.GOV.T.COLLEGEFORWOMEN,JIND
LESSON-PLAN(Session2021-22)SEMESTER**

NameofTeacher:VikramGupta

Designation:Assistantprofessor

Subject:Mathematics

Class:Bsc1(CS)

Subject/Paper: Sr.No.	Months	Topicstobecovered	Remarksifany,

1			
2			
3			
4			

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2023-24) ODD SEMESTER

Name of Teacher: Manisha Devi

Designation: Assistant professor

Subject Calculus

Class: B.Sc.N.M 1st sem

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,

1	August-September	Limit, continuity, types of discontinuities and differentiability of functions. Successive differentiation of functions in implicit, explicit and parametric form. Leibnitz theorem. Application of L- hospital rule to indeterminate form. Some general theorems on differentiable functions and expansions. Taylor's theorem with Lagrange's form and Cauchy's form of remainder after n terms. Maclaurin's form and infinite series.	
2	October	Asymptotes parallel to coordinate axis and oblique. Asymptotes in Cartesian and polar form. Singular points. Points of inflexion. Multiple points. Cusps, node and conjugate point.	Mid term exams
3	November	Tracing of curves. Reduction formulae, Rectification, Length of curves in Cartesian, parametric and polar curves particularly astroids, cycloid and cardioid. Intrinsic equations of curve.	Assignment
4	December	Quadrature (area) Sectorial area, Area bounded by closed curves in Cartesian, parametric form and polar form. Volumes and surfaces of solids of revolution about x-axis and about any line	

*Vacation as per university calendar

- Mid term exams and assignment will be taken as per schedule.

PiG.GOV.T.COLLEGEFORWOMEN,JIND

LESSON-PLAN(Session2023-24) ODDSEMESTER

Name of Teacher: Manisha Devi

Designation: assistant professor

Subject: Real Analysis

Class: B.Sc-(N.M.&C.S.) 5th sem.

Subject/Paper: Sr.No.	Months	Topicstobecovered	Remarksifany,
1	August	Riemann integral, Integrability of continuous and Monotonic functions.The fundamental theorem of integral calculus,Mean value theorems of integral calculus.	
2	September	Improper integral and their convergence, comparison tests,Abel's and Dirichlet's tests,Frullani's integral . Integral as a function of a parameter.	Unit test
3	October	Metric spaces,Open and closed sets in metric space, completeness in metric space	First Assignment
4	November	Continuity and uniform continuity in metric space,Compactness in metric spaces, connectedness in metric space.	SecondAssignment

*Vacationasperuniversitycalendar
2assignmentsand01unittestwillbetakenasperschedule.

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2023-24) ODD SEMESTER

Name of Teacher: DR. SONU KANSAL

Designation: Extension Lecturer

Subject: Real Analysis

Class: B.A. Sem 5th

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,

1	Aug 2023	Definition and examples of metric spaces, neighbourhoods, limit points, interior points, open and closed sets, closure and interior, boundary points, subspace of a metric space, equivalent metrics, Cauchy sequences, completeness, Cantor's intersection theorem, Baire's category theorem, Contraction principle.	Assignment
2	Sept 2023	Continuous functions, uniform continuity, compactness for metric spaces, sequential compactness, Bolzano-Weirstrass property, total boundedness, finite intersection property, continuity in relation with compactness, connectedness, components, continuity in relation with connectedness.	Class test, Group Discussion
3	Oct 2023	Riemann integral, Integrability of continuous and monotonic functions, the Fundamental theorem of integral calculus, Mean value theorems of integral calculus.	Unit Test
4	Nov 2023	Improper integral and their convergence, Comparison tests, Abel's and Dirichlet's test, Frullani's integral, Integral as a function of a parameter. Continuity, Differentiability and integrability of an integral of a function of a parameter.	Assignment

*Vacation as per university calendar

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

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2023-24) ODD SEMESTER

Name of Teacher: DR. SONU KANSAL

Designation: Extension Lecturer

Subject: Business Mathematics

Class: B.Com. Hons and B.Com Sec A Sem 1st

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	Aug 2023	Definition,type and algebra of matrices,operations on matrices,scalar multiplication and multiplication of matrices and their simple properties. Determinants, calculation of values of determinants upto 3 rd order, minor,co-factors and applications of determinants in finding the area of triangle,Adjoint of a matrix.	Assignment
2	Sept 2023	Solution of a system of linear equations having unique solution and involving no more than 3 variables by crammer rule and matrix method. Representation of sets,equivalent sets,power set,compliment of a set,Venn Diagrams,Union and intersection of sets, De-Morgan's laws.	Group Discussion
3	Oct 2023	Logical statements and truth tables.Logarithms: Laws of operation,log tables.Arithmetic progression.	Mid Term Test
4	Nov 2023	Geometric Progressions . Compound interest and annuities: Different types of interest rates,types of annuities,present value and amount of an annuity,valuation of simple loans and debentures,sinking funds.	Class test

*Vacation as per university calendar

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2023-24) ODD SEMESTER

Name of Teacher: Dr.SONU KANSAL

Designation: Extension Lecturer

Subject: Calculus

Class: B.A.,B.Sc.(C.S.) 1st Sem.

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	Aug, 2023	Limits, continuity by ϵ - δ definition, Types of discontinuities and Differentiability of functions. Application of L'Hospital rule to indeterminate forms. Successive differentiation of functions in implicit, explicit and parametric form, Leibnitz theorem.	Assignment
2	Sep, 2023	Taylor's theorem with Lagrange's form and Cauchy form of remainder after n terms. Asymptotes parallel to coordinate axis and oblique asymptotes in Cartesian and Polar form. Radius of curvature for Cartesian curve, parametric curves, polar curves, pedal curves, Newton's method, centre of curvature and circle of curvature.	Group Discussion
3	Oct, 2023	Singular points. Double points, points of inflexion, cusps, node and conjugate points, Test for concavity and convexity. Tracing of curve with different type of equation. Reduction formulae	Mid Term Test
4	Nov, 2023	Rectification, length of curves in Cartesian, parametric and polar curves. Quadrature, Area bounded by closed curves, Volumes and surfaces of solids of revolution.	Class test

*Vacation as per university calendar

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2023-24) ODD SEMESTER

Name of Teacher:DR. SONU KANSAL

Designation: Extension Lecturer

Subject: Partial Differential Equations

Class: B.A. Sem 3rd

Sr. No.	Months	Topics to be covered	Remarks if any,
1	Aug 2023	Partial differential equations : Formation, order and degree, Linear and non-linear partial differential equations of the first order: Complete solution, Singular solution, General solution, Solution of Lagrange's linear equations, Charpit's general method of solution. Compatible systems of first order equations, Jacobi's method.	
2	Sept 2023	Linear partial differential equations of second and higher orders, Linear and non linear homogeneous and non-homogeneous equations with constant coefficients, Partial differential equation with variable coefficients reducible to equations with constant coefficients, their complimentary functions and particular integrals, Equations reducible to linear equations with constant coefficients.	
3	Oct 2023	Classification of linear partial differential equations of second order, Hyperbolic, parabolic and elliptic types, Reduction of second order linear partial differential equations to Canonical (Normal) forms and their solutions, Solution of linear hyperbolic equations, Monge's method for partial differential equations of second order.	

4	Nov 2023	Cauchy's problem for second order partial differential equations. Characteristic equations and characteristic curves of second order partial differential equation, Method of separation of variables: Solution of Laplace's equation, Wave equation (one and two dimensions), Diffusion (Heat) equation (one and two dimension) in Cartesian coordinate system.	
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P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2023-24) ODD SEMESTER

Name of Teacher: Pooja Sharma

Designation: Extension lecturer

Subject: Mathematics

Class: Bsc III (NM) , BAIII Group & ring

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	August	Binary operations- Definitions and properties, Groups- definition and elementary properties, Finite groups and group composition tables, Subgroups and elementary properties of Subgroups, Group of Cosets - Lagranges Theorem, Normalizer of an element, Normal Subgroups and Factor groups-criteria for the existence of a coset group and Normal subgroups, factor groups & simple group	
2	September	Homomorphism- Definition and Elementary Properties. Kernel of a homomorphism. Fundamental theorem of homomorphism of groups. Isomorphism, Inner and Outer Automorphism. Permutation groups Functions and Permutations. Groups of permutations. Cycles and cyclic Notation. Even and Odd Permutations. Alternating Groups. Cayley's Theorem. Cyclic Groups- Elementary Properties. The	

		Classification of Cyclic groups. Sub groups of finite cyclic groups.	
3	October	Rings – Definition – Basic properties – Boolean rings – zero divisors of a rings – cancellation laws in a ring – some special types of rings – Integral domain – divisor of 0 and cancellation – division ring – fields – definitions – Idempotent element and Nil potent element of a ring – The Characterstic of a ring – some Non–Commutative examples– Matrices over a field and quaternions– ring of endomorphism of an abelian groups– subrings– Ideals & quotient rings.	
4	November	Definitions and elementary properties – Kernel of homomorphism – Definitions and elementary properties – fundamental theorem – Maximal Ideals – Prime Ideals – Prime fields	

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- 2 assignments and 01 unit test will be taken as per schedule.
 - **P.I.G.GOV.T.COLLEGEFORWOMEN,JIND**
 - **LESSON-PLAN(Session2023-24)ODDSEMESTER**
- **NameofTeacher:**Pooja sharma
- **Designation:**Extension lecturer
- **Subject:**Mathematics
- **Class:**Ba 2nd staties

Subject/Paper:Sr.No	Months	Topics to be covered	Remarks if any,
1	August	Compositionandresolutionofforces.Parallelforces.MomentsandCouples	

2	September	Analytical conditions of equilibrium of coplanar forces. Friction. Centre of Gravity.	
3	October	Virtual work. Forces in three dimensions. Poinso's central axis.	
4	November	Wrenches. Null lines and planes. Stable and unstable equilibrium.	

*Vacation as per university calendar

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

- P.I.G.GOV.T.COLLEGEFORWOMEN,JIND
- LESSON-PLAN(Session2023-24)ODDSEMESTER

- NameofTeacher:Pooja sharma
- Designation:Extension lecturer
- Subject:Mathematics
- Class:Bca 2nd Mathematics

Subject/Paper:Sr.No	Months	Topics to be covered	Remarks if any,
1	August	Computer Arithmetic: Floating-point representation of numbers, arithmetic operations with normalized floating point numbers and their consequences. Error in number representation - pitfalls in computing. Roundoff Error and Floating Point Arithmetic, Error Propagation, Interval Arithmetic, Statistical Roundoff Estimation. System of Linear Equations: Gauss Elimination Method, Gauss-Jordan Method, Cholesky Decomposition, Error Bounds, Round Off Error Analysis of Gauss Elimination Method, Roundoff Error Analysis in Solving Triangular Systems, Ill conditioned Equations.	
2	September	Numerical Differentiation and Integration: Differentiation formulae based on polynomial fit, Pitfalls in differentiation, Trapezoidal, Simpson's rules and Gaussian Quadrature: Integration Formulas of Newtons and Cotes, Peano's Error Representation, Euler – Maclaurin Summation Formula, Integration by Extrapolation, Gaussian Integration Method, Integrals with Singularities.	
3	October	Iterative Methods: Bisection, False position, Newton-Raphson methods, Discussion of convergences, Graeffe's Root Squaring Method and Bairstow's Method. Gauss-Seidal iterative method, Euler method, Euler's Modified Method, Taylor-Series Method, Runge-Kutta method, Predictor-Corrector methods.	

4	November	Eigenvalue Problems: Basic facts of Eigenvalues, Jordan Normal Form of a Matrix, Frobenius Normal Form of a Matrix, Schur Normal Form of Matrix, Hermitian and Normal Matrix, Singular Value of Matrices, Reduction of Hermitian Matrix to Diagonal and Tridiagonal Form, Methods for determining Eigenvalues and Eigenvectors, Computation of Singular Value of Matrix, Generalized Eigenvalue Problems, Estimation of Eigenvalues.	
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- 2 assignments and 01 unit test will be taken as per schedule

P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2023-24) ODD SEMESTER

Name of Teacher: Parveen

Designation: Assistant professor

Subject: - Mathematics

Name of the Course:- Calculation Skills with Vedic Mathematics-1

Course type :- Sec

Class: All 1st year Classes.

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	September	History of Vedic Mathematics and introduction to its Sutras and Upsutras. Addition in Vedic Mathematics: Without Carrying. Dot Method. Subtraction in Vedic Mathematics: Nikhilam Navatashcaramam Dashatah (All from last 10). Fraction: Addition and Subtraction.	Class test will be taken.
2	October	Multiplication of two numbers of two digits (Ekadhikena Purvena method), Multiplication of two numbers of three digits. (Ekanyunena Purvena method. Urdhva Tiryagbhyam method. Nikhilam Navatashcaramam Dashatah method). Combined Operations. Generating Tables (Nikhilam).	Mid-term Exam will be taken.

3	October /November	Division: Nikhilam Navatashcaramam Dashatah (two digits divisor), Paravartya Yojyet Method (three digits divisor). Divisibility: Ekadhikena Purvena Method (two digits divisor). Eknunen Purvena Method (two digits divisor) LCM, HCF.	Class test will be taken & group discussion
4	November	Squares of any two digits numbers: Base method. Squares of numbers ending in 5: Ekadhikena Purvena Method. Square Roots: Dwandwa Yoga (Duplex) Method, Square root (four digit number). Cubing: Yavadunam Method, Cube root (six digit numbers)	Assignment 1 Quiz

*Vacation as per university calendar

- Assignments and mid-term exam will be taken as per schedule.



P.I.G. GOVT. COLLEGE FOR WOMEN, JIND
LESSON-PLAN (Session 2023-24) ODD SEMESTER

Name of Teacher: Parveen

Designation: Assistant professor

Subject: Mathematics Paper : Groups and rings

Class: B.sc CS (5th Semester)

Subject/Paper: Sr. No.	Months	Topics to be covered	Remarks if any,
1	August	Definition of a group with example and simple properties of groups, Subgroups and Subgroup criteria, Generation of groups, cyclic groups, Cosets, Left and right cosets, Index of a subgroup. Coset decomposition, Lagrange's theorem and its consequences, Normal subgroups. Quotient groups.	Class test will be taken.

2	September	Homomorphisms, isomorphisms, automorphisms and inner automorphisms of a group. Automorphisms of cyclic groups. Permutation groups. Even and odd permutations. Alternating groups, Cayley's theorem, Centre of a group and derived group of a group.	Assignment 1
3	October	Introduction to rings, subrings, integral domains and fields, Characteristics of a ring. Ring homomorphisms, ideals (principal, prime and Maximal) and Quotient rings, Field of quotients of an integral domain.	Class test will be taken & group discussion
4	November	Euclidean rings, Polynomial rings, Polynomials over the rational field. The Eisenstein's criterion of irreducibility. Polynomial rings over commutative rings. Unique factorization domain. R unique factorization domain implies so is $R[X_1, X_2, X_3, \dots, X_n]$.	Assignment 2

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