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| **Name of the Assistant/Associate Professor: Mr.Narender Hooda,Yashpal,Ridam** |
| **Class and Section: B.Sc /B.A-1st Sem** |
| **Subject: Mathematics** |
| **Paper Algebra** |

**October**

**Week-1**

Basic of Matrix, Symmetric, Skew-symmetric

**Week-2**

Hermitian and skew Hermitian matrices. Elementary Operations on matrices.

**Week-3**

Rank of a matrices. Inverse of a matrix. Linear dependence and independence of rows and columns of matrices

**Week -4**

Row rank and column rank of a matrix. Eigenvalues, eigenvectors and the characteristic equation of a matrix

**November**

**Week 1**

**Diwali Break**

**Week -2**

Minimal polynomial of a matrix. Cayley Hamilton theorem and its use in finding the inverse of a matrix. **Week-3**

Applications of matrices to a system of linear (both homogeneous and non– homogeneous) equations.

**Week -4**

Theorems on consistency of a system of linear equations

**December**

**Week--1**

Unitary and Orthogonal Matrices

**Name of the Assistant/Associate Professor: Mr.Narender Hooda,Yashpal,Ridam**

**Class and Section: B.Sc /B.A-1st Sem**

**Subject: Mathematics**

**Paper Algebra**

**Week-2**

Bilinear and quadratic from

**Week 3**

Problems and Test 1

**Week-4**

Relations between the roots and coefficients of general polynomial equation in one variable

**Week-5**

Relations between the roots and coefficients of general polynomial equation in one variable

**January**

**Week-1**

Solutions of polynomial equations having conditions on roots. Common roots and multiple roots **Week-2**

Transformation of equations

**Week-3**

Nature of the roots of an equation Descarte’s rule of signs

**Week-4**

Solutions of cubic equations (Cardon’s method). Biquadratic equations and their solutions.

**Week-5**

Problems and Test 2

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| **Name of the Assistant Professor: Mrs Renu** |
| **Class: B.Com(H)-II** |
| **Subject: Mathematics** |
| **Paper: Business Mathematics** |
| **October, 2021** |
| **Week 1:** Algebra of Matrices and problems based on this topic |
| **Week 2:** Determinants and its properties and numerical based on Determinants |
| **Week 3:** Adjoint and Inverse of Matrices and problems based on this topic |
| **Week 4:** Leontief Input -Output Model and Problems based on this topic |
| **Week 5:** Test & Assignments |
| **November, 2021** |
| **Week 1:** Compound Interest, Continuous compounding of Interest |
| **Week 2:** Problems based on Depreciation and Population, Annuity, Present Value of Annuity |
| **Week 3:** Practical Problems based on Annuity , Time value of Money |
| **Week 4:** Problems based on this topic, Test & Assignment |
| **Week 5:** Introduction of Differentiation |

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| **December, 2021** |
| **Week 1:** Differentiation |
| **Week 2:** Differentiation Continued |
| **Week 3:** Introduction of Integration, Integration by substitution and by parts |
| **Week 4:** Integration continued |
| **Week 5:** Test & Assignment |
| **January, 2022** |
| **Week 1:** Linear Programming Graphical Method and practical problems based on it |
| **Week 2:** Simplex Method and numerical based on it |
| **Week 3:** Simplex Method continued |
| **Week 4:** Set theory and problems based on it |
| **Week 5:** Set theory continued |

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| **Name of the Assistant/Associate Professor: Renu Mor** |
| **Class and Section: BBA** |
| **Subject: BUSINESS MATHEMATICS** |
| **Paper: BBA-102** |
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| **October** |
| **Week 2**  **Chapter:** Theory of Sets – Meaning, elements, types, |
| ***Assignments:*** |
| Discussion on Theory of Sets |
| **Week 3**  **Chapter:** Presentation and equality of sets; |
| ***Assignments:*** |
| Examples of sets |
| **Week 5**  **Chapter:** union, intersection, compliment & difference of sets; |
| **Assignments:** |
| Problems on union, intersection, compliment & difference of sets |

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| **Name of the Assistant/Associate Professor: Renu Mor** |
| **Class and Section: BBA** |
| **Subject: BUSINESS MATHEMATICS** |
| **Paper: BBAN-102** |
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| **November** |
| **Week 1** |
| ***Holiday*** |
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| **Week 2**  **Chapter:** Cartesian product of two sets; Venn diagrams |
| ***Assignments:*** |
| Examples on Cartesian product of two sets |
| **Week 3**  **Chapter:** applications of set theory |
| ***Assignments:*** |
| Examples of applications of set theory |
| **Week 4**  **Chapter:** Revision of Unit 1 |
| ***Assignments:***  Test of Unit 1 |
| **Week 5**  **Chapter:** Indices |
| ***Assignments:*** Example to solve with the help of Indices |

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| **Name of the Assistant/Associate Professor: Renu Mor** |
| **Class and Section: BBA** |
| **Subject: BUSINESS MATHEMATICS** |
| **Paper: BBAN-102** |
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| **December** |
| **Week 1**  **Chapter:** logarithms |
| ***Assignments:*** |
| Exercise of logarithms |
| **Week 2**  **Chapter:**arithmetic and geometric progressions |
| ***Assignments:*** |
| Problems related to arithmetic and geometric progressions |
| **Week 3**  **Chapter:**arithmetic and geometric progressions and their business applications |
| ***Assignments:***  Examples on arithmetic and geometric progressions and their business applications |
| **Week 4**  **Chapter:**sum of first n natural numbers, sum of squares and cubes of first n natural numbers. |
| ***Assignments:*** |
| Problems on sum of first n natural numbers, sum of squares and cubes of first n natural numbers |
| **Week 5**  **Chapter:** Permutations, combinations |
| ***Assignments:*** |
| Exercise of Permutations, combinations |

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| **Name of the Assistant/Associate Professor:Renu Mor** |
| **Class and Section: BBA** |
| **Subject: BUSINESS MATHEMATICS** |
| **Paper: BBAN-102** |
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| **January** |
| **Week 1**  **Chapter:**binomial theorem (positive index), Quadratic equations |
| ***Assignments:*** |
| Exercise of binomial theorem |
| **Week 2** |
| ***Differentiation*** |
| **Week 3**  **Chapter:**Matrices – Types, properties, addition, multiplication, transpose and inverse of matrix; properties of determinants |
| ***Assignments:*** |
| Application of **:**Matrices – Types, properties, addition, multiplication, transpose and inverse of matrix; properties of determinants |
| **Week 4**  **Chapter:** solution of simultaneous Linear Equations; |
| ***Assignments:*** |
| Exercise related to solution of simultaneous Linear Equations |
| **Week 5**  **Chapter:** differentiation and integration of standard algebraic functions; business applications of matrices, |
| ***Assignments:*** |
| Exercise related to differentiation and integration |

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**Name of the Assistant/Associate Professor:. Dr Rekha Rani,Ms Parul,Ms.Reena,Ms Mamta**

**Class and Section: B.com –Ist Sem**

**Subject: Business Mathematics-I**

**Paper:**

**Oct**

**Week 2** Data interpretation- Introduction,

**Week 3** approaches to data interpretation, tabulation,

**Week 4** Bar graphs, Pie Chart

**Week 5** Line graphs, Mix graphs

**Nov**

**Week 1** Theory of Sets: Meaning, elements, types presentation

**Week 2** equality of Sets, Union, Intersection, Complemen

**Week 3** Venn Diagram,

**Week 4** Difference of Sets, Cartesian Product of two Sets

**Week 5 Test & Assignments**

**Dec**

**Week 1** Applications of Set Theory.

**Week 2**Indices

**Week 3** Logarithms;

**Week 4** Permutations

**Week 5** Combinations.

Jan

**Week 1** Sequence and Series,

**Week 2** Sequence and Series, **Test & Assignment**

**Week 3** A.P,

**Week 4**G.P.

**Week 5** G.P. **solution**

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| Name of the Assistant/Associate Professor: MsReena,Ms.Shalini,Preety Malik |
| Subject: Mathematics |
| Class: B.A. 1st /B.Sc-1st B.Sc.Maths Hon’s |
| Paper: Calculus |
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| Oct. Week 1  Definition of the limit of a function. Basic properties of limits, |
| Week2  Continuous function,classification of discontinuities. Differentiability. |
| Week 3  Successive differentation,  Leibnitz theorem. |

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| Week 4  Asymptotes in Cartesian coordinates, intersection of curve and its asymptotes, asymptotes in  polar coordinates. |
| November Week 1**DIWALI BREAK**  Week 2-Curvature, radius of curvature for Cartesian curves, |
| Week 3  Radious of curvature in parametric curves and polar curves. Centre of curvature. Circle of curvature. Chord of curvature, evolutes. |
| Week 4  Circle of curvature . chors of curvature . evolutes.  Test |
| December Week 1  Tracing of curves in cartesian and parametric co ordinates  Assignments on curve tracing . |
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| Week 2  Tracing of curve in polar co ordinates |
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| Assignments: |
| Week 3  Reduction formulae |
| Assignments |
| Week 4  Redution formulae . |
| Assignments: assignment on reduction formulae |
| Week 2 Quadrature sectorial area .  Area bounded by closed curve |
| Assignments: |
| Week 3  Volumes and solids of revolution  An axis of revolution . volume formulae for two solids |
| Assignments: |

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| Week 5  Area of surface of revolution . three forms of the surface formule |
| Assignments: |
| January Week 1  Theorems of pappu's and Guilden . |
| Assignments: |
| Week 4  Maclaurin amdtaylor series expensions. types of concavity and convexity |
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| Week 5  points of inflexion . multiple points .cusps nodes and conjugate points  Test.Type of cusps . |

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week 1

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| Name of the Assistant/Associate Professor: Dr. Preeti |
| Class and Section: B.Sc. 2(math hons) |
| Subject: mathematics |
| Paper: Differential Geometry |
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| OCTOBER |
| Week 2:  One parameter family of surfaces : Envelope, characteristic, edge of regression  Examples and problems |
| Week 3:  Developable surfaces, developable associated with a curve, osculating developable  Discuss problems |
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| Week 4:  Polar developable, Rectifying developable |
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| NOVEMBER |
| Week 1 :  Diwali Holiday |
| WEEK 2:  Two Parameter Family of Surface:Envelope |
| Week 3:  Examples of Envelope,Characteristics Point,Curvilinear coordinates |
| Week4:  Take Problems,First Order Magnitude |
| Week 5: |
| Direction on a surface of Normal  Take Problems |
| DECEMBER |
| Week 1:  Second Order Magnitude,Derivative of n |
| Week 2:  Curve on a Surface:Principal Directions And Curvatures |
| Week3 :  Euler’s Theorem And Presentation  Take Problem |
| Week4:  Duplin’s Indicatrix,THe Surface z=f(x,y) |
| Week 5:  Surface Of Revolution,Conjute Directions  problems |
| JANUARY |
| Week 1:  ConjugateSystems,Asymtotic Lines |
| Week2:  Curvature ANd TOrsion,Isometric Parameters  And Problems |
| Week3:  Null lines,Minimal Curves  Take Assignment  Week4:  Geodesics and Geodesics Parallel and properties Presentation  Take Test |

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| **Name of the Assistant/Associate Professor: Dr. Parvesh Kumari, Ms. Ridhm** |
| **Class : B.Sc -/B.sc hon’s/B.A-Vth Sem** |
| **Subject: MATHEMATICS** |
| **Paper: Groups and Rings** |
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| **OCTOBER** |
| **Week 1: Definition of group and its brief introduction, examples of group and general properties.** |
| **Week 2: Theorems on group, introduction of subgroups and its examples.** |
| **Week 3: subgroup criterion, product, intersection and union of subgroup.** |
| **Week 4: Cyclic groups and its examples and theorems, Euler function and its generators of groups.** |

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| **NOVEMBER** | |
| **Week 1: DIWALI BREAK** | |
| **Week 2:Introduction of cosets of a subgroup, theorems on cosets, Index of a subgroup, Lagrange`s theorem and its consequences, introduction to Normal subgroups and simple groups.** | |
| **Week 3: Examples and theorems on Normal subgroups, concept of quotient groups, examples and theorems on quotient groups. Introduction to Homomorphism and isomorphism of groups and examples.** | |
| **Week 4: Kernel of homomorphism and Fundamental theorem, Automorphism. Examples and theorems on automorphism and Inner automorphism, Normalizer of a subgroup and examples, centre of a group.** | |
| **December** | |
| **Week 1: Definition of permutation group and alternating group, related theorems, Cayley theorem.Introduction to Rings and related examples and theorems.** | |
| **Week 2: Integral domain and its examples, introduction to Field and examples.Theorems on fields and integral domain, subring of a ring and examples, characteristic of ring and field and related theorems.** | |
| **Week 3: Introduction to ideal, their examples, sum, product, intersection, union and related theorems.** | |
| **Week 4: Principal ideal and principal ideal domain, their examples and theorems.** | |
| **January** | |
| **Week 1: Maximal and prime ideal, idempotent and nilpotent element in ring, concept of quotient ring, ring homomorphism and its examples, Fundamental theorem on homomorphism.** | |
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| **Week 2: Field of quotient of an integral domain, divisibility in the ring. Unit, prime and irreducible element in ring and their examples.** | |
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| **Week 3: GCD and LCM in ring, Euclidean ring, its example and theorems, theorems on prime and irreducible element. Introduction to polynomial ring, polynomial over ring and integral domain.** | |
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| **Week 4: Division algorithm, irreducibility of polynomial over ring and integral domain, mod-p and the Eisenstein`s criterion for irreducibility of polynomials. Unique factorization domain and its examples and theorems.** | |

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| **Name of the Assistant/Associate Professor: Ms Mamta** |
| **Class and Section: B.Sc (Hons) 6th sem** |
| **Subject: MATHEMATICS** |
| **Paper: integral Equation** |
| SESSION 2021-2022 |
| **OCT 2022** |
| **Week 2**  **Unit-1**  **Introduction integral eqation** |
| **Week 3:**  **Definition linear integral equation,some basic identities,initial-value problem reduce to volterra integral eqation** |
| **Week 4:**  **Problem based on velterra integral equation** |

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| **NOV 2022** |
| **Week 2:**  **Method of successive approximation to solve volterra equation of 2nd kind,example** |
| **Week 3:**  **Iterated kernals and neumann series for volterra equation,example,resolvent kernel as a series** |
| **Week 4** |
| Laplace transform method for a difference kernel,solution of a volterra integral equation of first kind.example,problem |
| **Week 5**  **Unit-2**  **Boundary value problem reduced to fredholm integral equations,** |
| **Example,problem** |
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| **Method of successive approximation to solve fredholm equation of 2nd kind,example,problem** |

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| **DECEMBER** |
| **Week 1**  **Problem** |
| ***Assignments:*** |
| **Week 2**  **Iterated kernels and Neumann series for fredholm equation,Resolvent kernel as a sum of series,example** |
| ***Assignments:*** |
| **Week 3**  **Fredholm resolvent kernel as a ratio of two series,fredholm equation with degenerate kernel.approximation of a kerenal by a degenerate kernel, fredholm Alternative,example** |
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| **Week 4**  **Homogenous Fredholm equations with symmetric kernels,solution of fredholm Resolvent kenel,example** |
| ***Assignments:*** |
| **Week 5**,  **Method of Iterated Kernel,Fredholm Equations of the First Kind with Symmetric,example** |
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| **JANUARY** | |
| **Week 1**  **Problem** | |
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| **Week 2**  **Green’s function.use of method of variation of parameters to construction the Green’s function for a nonhomogenous linear second degree BVP,example** | |
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| **Week 3** | |
| **Basic four properties of the Green’s function.Alternate procedure for construction of the Green’s function by using its basic four properties,example,problem**  **Assignments:** | |
| **Week 4:**  **Method of series representation of the Green’s function in terms of the solution of the associates homogenous BVP,Example** | |
| **Week 5:** | |
| **Reduction of a BVP to a Fredholm integral equation with kernel as Green’s function** | |
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| **FEBUARY** |
| **Week 1**  **Example ,problem, test unit-4** |
| **Week 2**  **Revision unit-1,** |

**LESSON PLAN**

**October to January**

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| **Name of the Assistant/Associate Professor: Renu Mor** |
| **Class and Section: Maths (Honour) 5th sem** |
| **Subject: Mathematics** |
| **Paper: Methods of Applied Mathematics** |
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| **October** |
| **Week 2**  **Chapter:** |
| ***Assignments:*** |
| **solution of**  **3D Laplace Equations in cylindrical polar co-ordinates**  **3D Laplace Equations in spherical polar co-ordinates**  **By method of separation of variables and related problems** |
| **3D Wave Equations in cylindrical polar co-ordinates**  **3D Wave Equations in spherical polar co-ordinates**  **By method of separation of variables and related problems** |
| **3D Heat Equations in cylindrical polar co-ordinates**  **3D Heat Equations in spherical polar co-ordinates**  **By method of separation of variables and related problems** |
| **Week 3**  **Chapter:** |
| ***Assignments:*** |
| **Fourier series solution of one- dimensional Wave Equations and solution of related   problems.**  **Fourier series solution of two- dimensional Wave Equations and solution of related**  **problems.** |
| **Week 4(only two days)**  **Chapter:** |
| **Assignments:** |
| **Transformation of boundary value problems and solution of related problems.** |
| **Test and Assignments are solved** |

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| **November** |
| **Week 1 - Holiday** |
| ***Week 2*** |
| **Fourier series solution of one- dimensional Heat Equations and solution of related problems.**  **Fourier series solution of two- dimensional Heat Equations and solution of related problems.**  **Steady-state temperature in plates and solution of related problems.** |
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| **Solution of Heat and Wave equations in unbounded domains**  **Related articles and solution of related problems** |
| **Week 3**  **Chapter:** |
| ***Assignments:*** |
| **Fourier transformation solution of boundary value problems.**  **Solution of wave, heat and laplace equations** |
| **Week 4**  **Chapter:** |
| ***Assignments:*** |
| **Fourier transformation solution of boundary value problems.**  **Solution of wave, heat and laplace equations** |
| **Week 5**  **Chapter:** |
| ***Assignments:* Revision of 2nd unit and solution of unsolved problems** |
| **December** |
| **Week 1**  **Chapter:** |
| **Solution of heat equation in an infinite cylinder and in a solid sphere.**  **Solution of related problems** |
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| **Week 2**  **Chapter:** |
| ***Assignments:***  **Definition of Hankel Transformation and its operational properties**  **Transformation of some elementary functions.** |
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| **Week 3**  **Chapter:** |
| ***Assignments:***  **Application of Hankel Transformation to solve many partial differential equations.** |
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| **Week 4**  **Chapter:** |
| ***Assignments:***  **Definition of finite sine and cosine Fourier Transformations.**  **Some basic properties of these Transformations.** |
| **Week 5**  **Chapter:** |
| ***Assignments:***  **Revision and Test. Solution of given Assignment.** |

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| **JANUARY** |
| **Week 1**  **Chapter:** |
| ***Assignments:***  **Solution of many BVP and IVP by using Fourier Transformations.**  **Related examples are solved.** |
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| **Week 2**  **Chapter:** |
| ***Assignments:***  **Definition of moments of Inertia and product of Inertia**  **Related problems are solved.** |
| **Week 3**  **Chapter:** |
| ***Assignments:***  **Angular momentum of a rigid body**  **Principal moment and Principal axes**  **Kinetic energy of a rigid body rotating about a point** |
| **Week 4**  **Chapter:** |
| ***Assignments:***  **Unsolved problems are solved related above said topics.** |
| **Week 5**  **Chapter:** |
| ***Assignments:***  **Equimomental systems and momental ellipsoidal**  **Co-planar mass distribution and related problems are discussed.** |

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| **Name of the Assistant/Associate Professor: Mrs. Sarita, Mrs. Babita, Mrs. Kusum** |
| **Class and Section: B.Sc III** |
| **Subject: MATHEMATICS** |
| **Paper: Numerical analysis** |
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| **October** |
| **Week 1**  **Finite difference operator, Forward and backward difference operator, Central diff. operator,fundamental theorem of diff. operator,operator E and their properties** |
| **Week 2: Effect of error in tabular value ,relation b/w different operator,definition of terms interpolation and extrapolation, definition of term interpolation with equal intervals** |
| **Week 3:Interpolation with unequal intervals,difference b/w interpolation with equal intervals** |
| **Week 4: Newton Grexamplesory formula for forward and backward interpolation, problems, subdivision of interval and related examples .,interpolation with equal intervals and examples. And problems** |

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| **November** |
| **Week 2: Divided difference formula and theorems,newton divided difference and ordinary difference and examples. ,** |
| **Week 3: langrange interpolation formula and examples. ,Hermite formula and examples.** |
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| **Week 4: Gauss forward and backward interpolation and related examples. ,** |
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| **Week 5: Bessel formula, Sterling formula and examples. And problems ,** |

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| **DECEMBER** |
| **Week 1: Probability distribution of random variables ,binomial distribution and examples., Poisson distribution and examples.** |
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| **Week 2:Binomial distribution and examples., Poisson distribution and examples.** |
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| **Week 3: Normal distribution and examples , problems** |
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| **Week 4: Numerical differentiation derivative of interpolation formula, Eigen value formula ,** |
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| **Week 5**: Eigen value formula problems , Power method examples. And problems |
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| **JANUARY** |
| **Week 1: Jacobi method and examples., Given method and examples and problems** |
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| **Week 2: House holder method and examples.,QR method, lanczomethod,examples** |
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| **Week 3: Newton quotes quadrature formula,Trepazoidal rule,Simpsons one third rule and examples.** |
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| **Week 4: Simpsons three eight rule ,Chebychev formula and Gauss quadrature formula ,examples** |
| **Week 5: Single step method, Picard method, Tailor series and Euler method,Rungakutta method and multiple step method and examples.** |
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| Name of the Assistant/Associate Professor: Mr. Yashpal |
| Class and Section: B.A/.B.sc.. III-Sem |
| Subject: Mathematics |
| Paper: Partial Differential Equation |
| OCT 2022 |
| Week 2  Chapter:1 Partial differential equations: Formation, order and degree, Example of formation of Partial differential equations, Example to find the order and degree of Partial differential equations. |
| Week 3  Chapter: Linear and Non-Linear Partial differential equations of the first order, Example to check the Linear and Non-Linear Partial differential equations of the first order and Higher Order. |
| Week 4  Chapter: Classification of the solutions of Partial differential equations, Complete solution, singular solution, General solution, Example to find the solutions of Partial differential equations in various form. |
| NOV 2022 |
| Week 2  Chapter: Solution of Lagrange’s linear equations, Charpit’s general method of solution. Example to find the solutions of Partial differential equations in various form using Charpit’s general method. |
| Week 3  Chapter: Compatible systems of first order equations, Condition for Compatibility, Special case to find the Compatibility of Partial differential equations. |
| Week 4  Chapter: Some standard forms of Partial differential equations and its solutions, Jacobi’s method, Example to find the solutions of Partial differential equations in various forms using Jacobi’s method. |
| Week 5  Revision &test |
| DECEMBER |
| Week 1  Chapter: Linear partial differential equations of second and higher orders, Find complementary function of linear homogeneous partial differential equations with constant coefficients, Method to Find particular integral of linear homogeneous partial differential equations with constant coefficients. |
| Week 2-3  Chapter: Non-homogeneous equations with constant coefficients. Find complementary function of linear non-homogeneous partial differential equations with constant coefficients, Method to Find particular integral of linear non-homoeneous partial differential equations with constant coefficients. |

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| Week 4  Chapter: Method to find the complimentary functions and particular Integrals of Partial differential equation with variable coefficients. Equations reducible to linear equations with constant co-efficient. |
| Week 5  Chapter: Classification of linear partial differential equations of second order. Method to find Classification of linear partial differential equations of second order and solve its exercise given in reference books. . Reduction of Hyperbolic equations to its canonical forms |
| JANUARY |

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| Week 1  Chapter: Monge’s method for partial differential equations of second order.  Find solution of partial differential equations of second order using Monge’s method. |
| Week 2 Monge’s method of Solving Rr+Ss+Tt+U(rt-s2 )=V |
| Week 3  Chapter: Cauchy’s problem for second order partial differential equations and finds its examples and applications. |
| Week 4  Chapter: Characteristic equations and characteristic curves of second order partial differential equation. Method to find Characteristic equations and characteristic curves of second order partial differential equation and solve its exercise. Chapter: Method of separation of variables: Solution of Laplace’s equation and solve its exercise. |
| Week-5  Wave equation , Method of Separation of variable: Solution of Wave Equation and solve its exercise  TEST |
| FEBUARY |
| Week-1  Heat equation , Method of Separation of variable: Solution of Heat Equation   |  | | --- | | Week Chapter: parabolic and elliptic type’s partial differential equations. Reduction of parabolic equations to its canonical forms, Reduction of elliptic equations to its canonical forms.  ASSIGNMENT | | Week 2 Solution of general hyperbolic PDE of second order by Riemann’s Method | |

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| Name of the Assistant/Associate Professor:MRS MAMTA |
| Class and Section: Physics Hons 3rd sem |
| Subject: mathematics |
| Paper:Phy 305(2021-2022) |
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| OCT 2022 |
| Week 2  Sequence and series of function of real variable  Examples and problems |
| Week 3  Pointwise and uniform convergence  Discuss problems  Class test |
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| Week 4  Weierstrass M- test Uniform convergence and continuity |
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| NOV 2022 |
| Week 2  Uniform convergence and differentiation  Examples  Class test |
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| Week 3  Uniform convergence and integration  Problem discussion  Test |
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| Week 4  Weierstrass approximation theorem  Numericals  Problems  Test |
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| Week 5  Power series and their convergence and uniform convergence  numericals  test |
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| All definitions related to power series  Numericals  Problem discussion  Test |
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| December |
| Week 1 |
| Improper integral  numericals  test |
| Week 2 |
| Comparison tests  Presentation  Test |
| Week 3 |
| Abel's and Dirichlet's tests  Problems  Presentations |
| Week 4 |
| Beta and Gamma functions  Numerical  Assignment |
| Week 5 |
| Differentiation under the sign of integration  Numerical  Test |

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| January |
| Week 1  Unit- 4 |
| Probability classical  problems  test |
| Week 2 |
| Relative frequency and axiomatic approach to probability  problem discussion  test |
| Week 3 |
| Theorems of total and compound probability  Test |
| Week 4 |
| Conditional probability  Test  Problem discussion |
| Week 5 |
| Independent events  Numerical  Presentation |
| Febuary | |
| Week 1 | |
| Assignments: | |
| Week 2 | |
| Assignments:  Test | |
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| Name of the Assistant/Associate Professor:Mrs Mamta |
| Class and Section:Physics honours 1st sem |
| Subject: Mathematics |
| Paper: Physics 104(2021-2022) |
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| OCT 2022 |
| Week 2  Sequence of real number convergent |
| Week 3  Cauchy Sequences  Problem discussion |
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| Week 4  Monotonic and bounded sequences  Problems discussion  Test |
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| Week 2  Subsequences  Examples  Problem discussion  Test |
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| Week 3  Limit superior and inferior of a sequence  Problems  Test |
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| Week 4  Introduction to infinite series  test |
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| WEEK 5  Comparison test of convergence  Problem discussion |
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| DECEMBER |
| Week 1  Cauchy root test |
| Assignments: Problems  test |
| Week 2 |
| D’ Almembert ratio test  problem discussion |
| Week 3 |
| Rabbes test  Related examples |
| Week 4 |
| Cauchy integral test  Problems |
| Week 5 |
| Revision on test of convergence  Problem discussion |

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| JAUNARY |
| Week 1 |
| Alternating series |
| Week 2 |
| Lebnitz test |
| Week 3 |
| Revision on Lebnitz test |
| Week 4 |
| Absolute convergence of infinite series  Problem discussion |
| Week 5 |
| Conditional convergence  Presentation |
| FEBUARY | |
| Week 1 | |
| Assignments:  Problem discussion. | |
| Week 2 | |
| assignment  presentation  test | |
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| **Name of the Assistant/Associate Professor**: Parul Singh |
| **Class and Section**: B.Sc NM. Ist sem, B.A-Ist sem, Bsc Math (H)-Ist sem. |
| **Subject:** MATHEMATICS |
| **Paper:** Solid Geometry |
| **October** |
| Week 1: Chapter Review Chapter, Chapter-1 General Equation of second degree. |
| Week 2: General Equation of second degree continue. |
| Week 3: Chapter 2 Tracing of conic |
| Week 4: Chapter 3 system of conics + test of 1st chapter |
| Week 5: Chapter 4, Chapter 5 |

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| **November** |
| Week 1: Chapter 5 continue + Problems of General Equation of second degree +Test of chapter 2,3,4. |
| Week 2: Chapter 6 Sphere |
| Week 3: Sphere continue |
| Week 4: Chapter 7 Cylinder |
| Week 5: Assignment of Chapter 8 + Test of Sphere |
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| **December** |
| Week 1: Chapter 9 The Conicoid. |
| Week 2: Conicoid continued |
| Week 3: Paraboloids, Chapter 10 Generating lines. |
| Week 4 : Chapter: Confocal Conics |
| Week 5: Test of Conicoid |
| **January** |
| Week 1`: Chapter 11 Confocal Conics continued |
| Week 2: Assignment Discusion + viva |
| Week 3: Chapter 12 |
| Week 4: Chapter 12 Continued |

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| **February** |
| Week 1: Chapter 13 Reduction of second degree equation. |
| Week 2: Chapter 13 continue + test of chapter 13 |
| Week 3: Viva on short questions, Revision of 1st unit |
| Week 4 : Revision of all units. |

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| Name of the Assistant/Associate Professor: |
| Class and Section:BSc /B.A-3rd sem |
| Subject:MATH |
| Paper:STATICS |
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| October |
| Week 1  Chapter:Composition of Forces  Examples and Exercise |
| Week 2  Resolution of forces  Examples and Exercise |
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| Week 3:  Chapter: Parallel forces.  Examples and Exercise |
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| Week 4: Resolve doubts , pactice questions and introduce Moments. |
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| November |
| Week 2  Chapter:Moments  Examples and Exercise |
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| Week 3  Chapter:Couples  Examples and Exercise |
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| Week 4  Chapter:Analytical conditions of equilibrium of coplanar forces  Examples and Exercise |
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| December |
| Week 1  Chapter: Problems on Equilibrium of Roads and Ladders  Examples and Exercise |
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| Week 2  Chapter: Friction.  Examples and Exercise |
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| Week 3  Chapter: Examples and Exercise,Assignment |
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| Week 4  Chapter: Centre of Gravity.  unit test |
| Week 5  Chapter: Forces in three dimensions ,virtual work  Examples and Exercise                Wrenches  Examples and Exercise |
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| January |
| Week 1  Chapter:Null lines  Examples and Exercise |
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| Week 2  Chapter: Poinsots central axis  Examples and Exercise |
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| Week 3  Chapter: Null planes  Stable equilibrium  Examples and Exercise |
| Week 4  Chapter:Unstable equilibrium  Examples and Exercise |
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| Week 5 |
| Chapter: Neutral equilibrium  Examples and Exercise |
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| **Name of the Assistant/Associate Professor: Dr. Savita Deswal, Ms. Babita, Rekha Narwal** |
| **Class and Section: B.Sc -/B.sc hon’s/B.A-IIIrd Sem** |
| **Subject: MATHEMATICS** |
| **Paper: Advanced Calculus** |
| **October** |
| **Week 1**  **Chapter: Continuous functions** |
| **Week 2**  **Chapter: Continuous functions , uniform continuity** |
| **Assignments : Examples based on continuity** |
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| **Week 3**  **Chapter: DisscusE the problem** |
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| **Week 4** |
| **chapter: The derivative and mean value theorems** |
| **NOVEMBER**  **Week 1 DIWALI BREAK**  **Week 2**  **Chapter: The derivative and mean value theorems, Lagrange's mean value theorem, Darboux's theorem, Rolle's theorem, Taylor's theorem** |
| **Assignments: Examples related to mean value theorems** |
| **Week 3**  **Chapter: Maclaurin's theorem, Cauchy's mean value theorem** |
| **Week 4**  **Chapter: Indeterminate forms** |

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| **Name of the Assistant/Associate Professor: Dr. Savita Deswal, Ms. Babita, Rekha Narwal** |
| **Class and Section: B.Sc /B.A-IIIRD SEM** |
| **Subject: MATHEMATICSPaper: Advanced Calculus** |
| **DECEMBER** | |
| **Week 1**  **Chapter: Limit and continuity of functions of two variables** | |
| ***Assignments: Examples*** | |
| **Week 2**  **Chapter: and continuity of functions of two variables and Partial differentiation** | |
| ***Assignments: Examples*** | |
| **Week 3**  **Chapter: Partial differentiation-Homogeneous functions, Euler's theorem** | |
| ***Assignments: Questions based on Euler's theorem*** | |
| **Week 4**  **Chapter: Differentiability of functions of two variables** | |
| ***Assignments: Definitions related to differentiability*** | |
| **Week 5**,  **Chapter:Differentiability of a function of two variables** | |
| ***Assignments: Test*** | |
| **JANUARY** | |
| **Week 1**  **Chapter: Differentiability of a function of two variables- Implicit function theorem** | |
| ***Assignments: Questions based on excercise*** | |
| **Week 2**  **Chapter: Maximum and minimum of a function of two variables , Lagrange's method of undetermined multipliers** | |
| ***Assignments: Examples*** | |
| **Week 3**  **Chapter: Curves in space ,introduction to curves, Circle of curvature and spherical curvature, normal planeCircle of curvature and spherical curvature** | |
| ***Assignments: Examples*** | |
| **Week 4**  **Chapter: Involutes and evolutes, Concept of a surface and envelopes** | |
| ***Assignments:***  **Examples** | |
| **Week 5**  **Chapter:*Assignments: Examples,* Revision.** | |