

**ACADEMIC PLANNER & UNITIZATION OF SYLLABUS
ACADEMIC YEAR 2024-25 (SEP)**

DEPARTMENT: Mathematics

CLASS: 1 semester

| MONTH/YEAR | WEEK | PORTIONS | Teachers |
|------------|------|------------------------------------------------------------------------------|----------|
| Aug 2024 | 2 | Elementary row and column transformations -equivalent matrices | SSM |
| | | nth derivative of standard functions | SSM |
| | | Reduction formulae | LP |
| | | Recapitulation of 3D geometry | KSR |
| | 3 | Theorems on matrices | SSM |
| | | nth derivative of standard functions | SSM |
| | | Reduction formulae | LP |
| | | Planes , distance of point from plane | KSR |
| | 4 | Row reduced echelon form, Normal form of a matrix, rank of a matrix- | SSM |
| | | nth derivative of standard functions | SSM |
| | | Reduction formulae | LP |
| | | Angle between 2 planes | KSR |
| Sept 2024 | 1 | Rank of a matrix-Problems | SSM |
| | | nth derivative of standard functions | SSM |
| | | Reduction formulae | LP |
| | | Equation of bisecting planes | KSR |
| | 2 | Homogeneous and non-homogeneous system of m-linear equations in n - unknowns | SSM |
| | | nth derivative of standard functions | SSM |
| | | Problems on reduction formulae | LP |
| | | Problems on equation of bisectors | KSR |
| | 3 | Consistency criterion-Problems | SSM |
| | | Problems on nth derivatives | SSM |
| | | Problems on reduction formulae | LP |
| | | Equation of sphere in various forms | KSR |
| | 4 | Consistency criterion for uniqueness of solutions-Problems | SSM |
| | | Problems on nth derivatives | SSM |
| | | Problems on reduction formulae | LP |
| | | Problems on equation of sphere | KSR |
| Oct 2024 | 1 | Eigen values and Eigen vectors of a square matrix | SSM |
| | | Partial derivatives | SSM |

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|----------------------------------------|-----------------|--------------------------------------------------------|-------------------------------------|------------|
| | | Problems on reduction formulae | LP | |
| | | Equation of tangent plane, Orthogonality of sphere | KSR | |
| | 2 | Internal Test | | |
| | | Internal Test | | |
| | | Internal Test | | |
| | | Internal Test | | |
| | 3 | Cayley-Hamilton theorem-with proof | SSM | |
| | | Higher order derivatives | SSM | |
| | | Problems on reduction formulae | LP | |
| | | Right circular cone, standard form | KSR | |
| | 4 | Finding A^{-1} using C-H theorem | SSM | |
| | | Homogeneous function | SSM | |
| | | Problems on reduction formulae | LP | |
| | | Problems on cone | KSR | |
| | Nov 2024 | 1 | Finding A^4 -Application problems | SSM |
| | | | Euler's theorem and extension | SSM |
| Problems on reduction formulae | | | LP | |
| Right circular cylinder, standard form | | | KSR | |
| 2 | | Problems on CH theorem | SSM | |
| | | Problems on Euler's theorem | SSM | |
| | | Leibnitz rule and problems | LP | |
| | | Problems on right circular cylinder | KSR | |
| 3 | | Problems on CH theorem | SSM | |
| | | Total derivative, Differentiation of implicit function | SSM | |
| | | Problems on Leibnitz rule | LP | |
| | | Miscellaneous problems | KSR | |
| 4 | | Problems on CH theorem | SSM | |
| | | Jacobian and problems | SSM | |
| | | Problems on Leibnitz rule | LP | |
| | | Miscellaneous problems | KSR | |
| Dec 2024 | 1 | Question papers solved | KSR | |
| | | Question papers solved | SSM | |
| | | Question papers solved | SSM | |
| | | Question papers solved | LP | |
| | 2 | Question papers solved | KSR | |
| | | Question papers solved | SSM | |
| | | Conducted preparatory exam | | |
| | | Conducted mock test | | |

**ACADEMIC PLANNER & UNITIZATION OF SYLLABUS
ACADEMIC YEAR 2024-25 (NEP)**

DEPARTMENT: Mathematics

CLASS: 3rd Semester

| MONTH/YEAR | WEEK | PORTIONS | Teachers |
|------------|------|----------------------------------------------------------------------------------------|----------|
| Aug 2024 | 4 | Recapitulation of diff equ first order first degree-exact eq | SSM |
| | | LDE of nth order with constant coefficients | LP |
| | | Definition of series-convergent, divergent, oscillatory | LP |
| | | Sequences of real numbers- bounded sequences-examples | LP |
| Sept 2024 | 1 | Exact Differential equation, necessary and sufficient condition for the eq to be exact | SSM |
| | | Complementary function for LDE | LP |
| | | Cauchy's general principle of convergence-Geometric series | LP |
| | | Limit of a seq, convergent, divergent and oscillatory seq | LP |
| | 2 | Problems on exact diff eq | SSM |
| | | Finding particular integral of exponential function and sine and cosine function | LP |
| | | p-series(Harmonic series) | LP |
| | | Theorems on bounded seq | LP |
| | 3 | Equations reducible to exact | SSM |
| | | Finding particular integral of x^p and e^{ax} | LP |
| | | Comparison tests | LP |
| | | Monotonic sequences | LP |
| | 4 | Differential equations of first order and higher degree | SSM |
| | | Problems on it | LP |
| | | Problems on Comparison tests | LP |
| | | Theorems of monotonic sequences | LP |
| Oct 2024 | 1 | Solvable for p, Solvable for x | SSM |
| | | Cauchy- Euler equations | LP |
| | | D'Alemberts ratio test, problems | LP |
| | | Algebra of convergent sequences | LP |
| | 2 | Internal Test | |
| | | Internal Test | |
| | | Internal Test | |
| | | Internal Test | |
| | 3 | Solvable for y | SSM |
| | | Legendte's LDE, | LP |

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| | | Raabe's test | LP |
| | | Bolzano Weierstrass theorem | LP |
| | 4 | Clairaut's equations and singular solutions | SSM |
| | | Method of variation of parameters | LP |
| | | Cauchy's root test | LP |
| | | Cauchy's general principle for convergence of a sequence | LP |
| Nov 2024 sssss | 1 | Orthogonal trajectories of Cartesian curves | SSM |
| | | Method of variation of parameters | LP |
| | | Cauchy's integral test-Alternating series | LP |
| | | Limit Superior and limit inferior of sequences | LP |
| | 2 | Orthogonal trajectories of polar curves | SSM |
| | | Simultaneous linear differential equations with constant coefficients | LP |
| | | Alternating series-Leibnitz's theorem | LP |
| | | Sub sequences – theorems | LP |
| | 3 | Revision of papers | SSM |
| | | Revision of papers | LP |
| | | Absolute convergent and conditional convergence | LP |
| | | Sub sequences – properties | LP |
| | 4 | Revision of papers | SSM |
| | | Revision of papers | LP |
| | | Summation of binomial series | LP |
| | | Condition for intergrabiity of TDE | LP |
| Dec 2024 | 1 | Revision of papers | SSM |
| | | Revision of papers | LP |
| | | Summation of exponential series | LP |
| | | Solving TDE | LP |
| | 2 | Revision of model papers | SSM |
| | | Revision of papers | LP |
| | | Conducted mock test | |
| | | Conducted preparatory exam | |

**ACADEMIC PLANNER & UNITIZATION OF SYLLABUS
ACADEMIC YEAR 2024-25 (NEP)**

DEPARTMENT: Mathematics,

CLASS: V Semester, Paper 5.1

| MONTH/YEAR | WEEK | PORTIONS | Teachers |
|------------|------|-------------------------------------------------|----------|
| Aug 2024 | 4 | Improper integrals – Types with Examples | LP |
| | | Complex numbers-cartesian and polar | LP |
| | | Geometrical representation Euler's form | LP |
| | | Limits, Continuity | LP |
| Sept 2024 | 1 | Improper integral as limit of a proper integral | LP |
| | | Differentiability | LP |
| | | Analytic functions | LP |
| | | CR equations in Cartesian form | LP |
| | 2 | Problems on convergence | LP |
| | | CR equations in polar form | LP |
| | | Problems on CR equations | LP |
| | | Harmonic function | LP |
| | 3 | Gamma function defn, results | LP |
| | | Orthogonal system | LP |
| | | Finding analytic function given real part | LP |
| | | Finding analytic function given imaginary part | LP |
| | 4 | Beta function defn , results | LP |
| | | Line integral problems | LP |
| | | Problems on line integral | LP |
| | | Cauchy's integral theorem, problems | LP |
| Oct 2024 | 1 | Relation between Beta & Gamma functions | LP |
| | | Cauchy's integral formula, problems | LP |
| | | Cauchy's generalised integral formula, problems | LP |
| | | Liouville's theorem, Cauchy's inequality | LP |
| | 2 | Internal Test | |
| | | Internal Test | |
| | | Internal Test | |
| | | Internal Test | |
| | 3 | Problems on relation | LP |
| | | Fundamental theorem of algebra | LP |
| | | Transformations , conformal | LP |
| | | Elementary transformations | LP |

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| | 4 | Evaluation of definite integrals using Beta-Gamma function | LP |
| | | Bilinear transformations, theorems | LP |
| | | Theorems on BT | LP |
| | | Distance of a point from a line | LP |
| Nov 2024 | 1 | Duplication formula problems | LP |
| | | Cross ratio , theorems | LP |
| | | Problems on cross ratio | LP |
| | | Problems on BT | LP |
| | 2 | Evaluation of definite integrals using Beta-Gamma function | LP |
| | | Problems on BT | LP |
| | | Standard transformations | LP |
| | | Standard transformations | LP |
| | 3 | Evaluation of definite integrals using Beta-Gamma function | LP |
| | | Revision of model papers | LP |
| | | Revision of model papers | LP |
| | | Revision of model papers | LP |
| | 4 | Revision of model papers | LP |
| | | Revision of model papers | LP |
| | | Revision of model papers | LP |
| | | Revision of model papers | LP |
| Dec 2024 | 1 | Revision of model papers | LP |
| | | Revision of model papers | LP |
| | | Revision of model papers | LP |
| | | Revision of model papers | LP |
| | 2 | Revision of model papers | LP |
| | | Conducted preparatory exam | |
| | | Conducted mock test | |
| | | | |

**ACADEMIC PLANNER & UNITIZATION OF SYLLABUS
ACADEMIC YEAR 2024-25 (NEP)**

DEPARTMENT: Mathematics,

CLASS: V Semester, Paper 5.2

| MONTH/YEAR | WEEK | PORTIONS | Teachers |
|------------------|----------|----------------------------------------------------|------------|
| Aug 2024 | 4 | Vector function of a scalar variable- space curve | LP |
| | | Gradient | SSM |
| | | Line integral and problems | KSR |
| | | Planes: Standard forms | KSR |
| Sept 2024 | 1 | Derivative, Tangent, normal, binormal | LP |
| | | Directional derivative | SSM |
| | | Double integral and problems | KSR |
| | | Distance of a point from a plane and problems | KSR |
| | 2 | Problems on derivatives | LP |
| | | Tangent plane and normal to the surface | SSM |
| | | Evaluation of double integral | KSR |
| | | Angle between 2 planes | KSR |
| | 3 | Curvature and Torsion defn , derivation | LP |
| | | Divergence and problems | SSM |
| | | Change of order in double integral | KSR |
| | | Pair of planes | KSR |
| | 4 | Serret-Frenet formulae | LP |
| | | Laplacian and problems | SSM |
| | | Change of variables in double integral | KSR |
| | | Bisectors of angle between 2 planes | KSR |
| Oct 2024 | 1 | Problems on derivatives | LP |
| | | Curl and problems | SSM |
| | | Find area using double integral | KSR |
| | | Equations of straight lines | KSR |
| | 2 | Internal Test | |
| | | Internal Test | |
| | | Internal Test | |
| | | Internal Test | |
| | 3 | Problems on curvature | LP |
| | | Problems involving curl, divergence | SSM |
| | | Find surface area and volume using double integral | KSR |
| | | Distance of a point from a line | KSR |

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|-----------------|----------|----------------------------------------------|------------|
| | 4 | Problems on torsion | LP |
| | | Miscellaneous problems | SSM |
| | | Triple integral | KSR |
| | | Distance between 2 straight lines | KSR |
| Nov 2024 | 1 | Orthogonal curvilinear coordinates | LP |
| | | Vector identities | SSM |
| | | Change of variables in triple integral | KSR |
| | | Distance between a straight line and a plane | KSR |
| | 2 | Cylindrical and spherical polar coordinates | LP |
| | | Vector identities | SSM |
| | | Green's theorem | KSR |
| | | Sphere- different forms | KSR |
| | 3 | Problems on Cartesian to cylindrical | LP |
| | | Revision of model papers | SSM |
| | | Divergence theorem | KSR |
| | | Intersection of 2 spheres | KSR |
| | 4 | Problems on Cartesian to spherical | LP |
| | | Revision of model papers | SSM |
| | | Stoke's theorem | KSR |
| | | Problems on Cartesian to spherical | KSR |
| Dec 2024 | 1 | Revision of model papers | LP |
| | | Revision of model papers | SSM |
| | | Revision of model papers | KSR |
| | | Revision of model papers | KSR |
| | 2 | Revision of model papers | LP |
| | | Conducted preparatory exam | |
| | | Conducted mock test | |