

Govt. Shivalik College Naya Nangal

Teaching plan (2020-21)

Teacher Name: Raminderjeet kaur
SEM-3

Class: BCA

Paper : Discrete Mathematics

Sr. no.	Dates	Topic
1	1-5 September	Set Theory: Sets, Type of sets, Set operations, Principle of Inclusion-Exclusion, Cartesian product of sets, Partitions.
2	7-12 September	Logic : Propositions, Implications, Precedence of logical operators, Translating English sentences into logical expressions, Propositional equivalence
3	14-19 September	Principle of Mathematical induction.
4	21-26 September	Relations: Relations and diagraph, n-ary relations and their applications, properties of relations, representing relations,
5	28-03 sept -oct	closure of relation, equivalence relation, operation on relations, partial ordering.
6	5-10 october	Functions: Functions, One-to-one Functions, Onto Functions, Inverse and Composition of Functions
7	12-17 october	Floor Function, Ceiling Function.
8	19-24 october	Basic Concepts (Only Definition): Big-O Notation, Big-Omega and Big-Theta Notation.
9	26-31 october	Graphs: Introduction to Graph, Graph terminology, Representing graphs and Graph Isomorphism,
10	2-7 November	Connectivity, Euler Paths and Circuits, Hamiltonian paths and circuits,
11	9-14 November	Shortest Path Problems, Planar Graphs.

12	16-21 November	Trees : Trees, labelled trees, Tree Traversal, Undirected trees, Spanning Trees, Minimum spanning trees
13	23-03 December	MST EXAM

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Teaching plan (2020-21)

**Teacher Name: Raminderjeet kaur
SEM-3**

Class: B.COM

Paper : Business Statistics

Sr. no.	Dates	Topic
1	1-5 September	Concepts of Geometric Mean, Harmonic Mean and their applications, Measures of Dispersion including Lorenz
2	7-12 September	Curve . Skewness: Meaning, types and measures. Probability ; definition, concepts
3	14-19 September	Addition and Multiplication theorems and its applications.
4	21-26 September	Correlation and Regression: Correlation: Definition, types, causation, Methods of correlation
5	28-03 sept -oct	; Discrete and Continuous Variables; Properties of correlation, Rank Correlation and its applications, and Concurrent Deviation Method
6	5-10 october	Regression Analysis: Meaning, types, difference between Correlation and Regression.
7	12-17 october	Methods of obtaining Regression Equations in case of two Variables only, Properties of Regression Coefficients, Discrete and Continuous Variables.
8	19-24 october	Interpolation and Extrapolation: Binomial Expansion Method, Newton's Method for Leading Differences and Lagrange's Method.
9	26-31 october	Index numbers: Meaning, types, problems and methods of construction of Index Numbers

10	2-7 November	. Chain and Fixed Base Index Number, Tests of Consistency and Cost of living Index Numbers.
11	9-14 November	Time Series Analysis : Components of Time Series
12	16-21 November	and its Measurement of Secular Trend and Seasonal Variations.
13	23-03 December	MST EXAM

Govt. Shivalik College Naya Nangal

Teaching plan (2020-21)

Teacher Name: Raminderjeet kaur
SEM-2

Class: BCA

Paper : **BASIC Mathematics**

Sr. no.	Dates	Topic
1	1-6 February	Complex Numbers: Complex Numbers in the form of $a+ib$, Real and Imaginary parts of a complex number,
2	8-13 February	Complex conjugate, algebra of complex numbers, square roots of a complex number, cube roots of unity.
3	15-20 February	Quadratic Equations: Solutions of Quadratic equations (with real and complex coefficients),
4	22-27 February	Relations between roots and coefficients, Nature of roots, Equations reducible to quadratic equations.
5	1-6 March	Cartesian System of Rectangular Coordinates: Cartesian coordinate system, distance formula, section formula,
6	8-13 March	centroid and incentre, area of triangle, condition for collinearities of three points in a plane.
7	15-20 March	Straight Line: Slope of a line, parallel and perpendicular lines,

8	22-27 March	Equation of line in different forms, distance of a point from a line.
9	29-03 March-April	Circle: Standard form of equation of circle, General form, diameter form, three point form, Intersection of a line and a circle.
10	5-10 April	Matrices: Types of Matrices, Addition, Subtraction, Multiplication, Transpose, Conjugate and their properties, Symmetric, Skew-symmetric, Minor, co-factors, Adjoint, Inverse of matrices, Solution of linear system of equations using matrices.
11	12-17 April	Rank of a matrix , consistency of linear system of equations,
12	19-24 April	Determinants: Expansion of determinants (upto order 4), solution of linear system of equations using Cramer rule.
13	26-04 April-May	MST EXAM

Govt. Shivalik College Naya Nangal

Teaching plan (2020-21)

Teacher Name: Raminderjeet kaur
SEM-4

Class: BCA

Paper : COMPUTER ORIENTED NUMERICAL AND STATISTICAL METHODS

Sr. no.	Dates	Topic
1	1-6 February	Roots of Polynomials: Conventional Methods - Muller's Method, Bairstow's Method.
2	8-13 February	Algebraic Equations: Gauss-Jordan method, LU Decomposition, Matrix Inverse -Gauss-Seidel.
3	15-20 February	Numerical Differentiation - Integration: Trapezoidal Rule, Simpson's Rule, Differential equations: Taylor's method, Euler's method

4	22-27 February	, Runge-Kutta methods of order 2 and 4, Predictor - corrector methods.
5	1-6 March	Interpolation: Newton's divided difference method, Lagrange's interpolation.
6	8-13 March	Curve fitting: Linear, Polynomial and Exponential curve fitting.
7	15-20 March	Statistics: Diagrammatic and Graphical representation of Numerical Data, Formation of frequency distribution
8	22-27 March	, Histogram, Cumulative Frequency - Polygon and Ogives.
9	29-03 March-April	Measures of Central tendency: Mean, Median, Mode. Measures of Dispersion: Mean deviation, Standard deviation, variance, Quartile deviation and coefficient of variation, Moments (upto 4th), Measures of Skewness and Kurtosis for grouped and ungrouped data.
10	5-10 April	Correlation: Meaning and types of correlation, correlation and causation, Methods of correlation: product moment correlation coefficient - rank correlation coefficient.
11	12-17 April	Regression analysis: Linear regression - method of least squares for estimation of regression coefficient. Concept of sampling and Sampling distributions
12	19-24 April	, Chi square tests for goodness of fit and test for independence of attributes in contingency table.
13	26-04 April-May	MST EXAM

Govt. Shivalik College Naya Nangal

Teaching plan (2020-21)

**Teacher Name: Raminderjeet kaur
SEM-4**

Class: B.COM

Paper : Operational Research

Sr. no.	Dates	Topic
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1	1-6 February	Operational Research: Meaning Significance and Scope.
2	8-13 February	Introduction to Linear Programming,
3	15-20 February	Formulation of Linear Programming Problem,
4	22-27 February	Graphical Method,
5	1-6 March	Simplex Method.
6	8-13 March	Duality in Linear Programming
7	15-20 March	, Definition of Dual Problem General Rules in Converting any Primal into its Dual,
8	22-27 March	Transportation Problem, Assignment Problem.
9	29-03 March-April	Decision Theory: Decision Making under Uncertainty and Risk, Decision Trees
10	5-10 April	. Replacement Problem (Individual and Group replacement Problems both)..
11	12-17 April	Games Theory : Two Persons Zero Sum Games, Pure Strategies, Mixed Strategies.
12	19-24 April	Simulation; Meaning, Process, Advantages, Limitations and Applications
13	26-04 April-May	MST EXAM

Govt. Shivalik College Naya Nangal

Teaching plan (2020-21)

**Teacher Name: Raminderjeet kaur
5**

Class: BA SEM-

Paper : Discrete Mathematics- I

Sr. no.	Dates	Topic
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1	1-5 September	Graphs and Planar Graphs-Basic Terminology
2	7-12 September	. Multigraphs.
3	14-19 September	Weighted Graphs. Paths and Circuits Shortest paths
4	21-26 September	. Eulerian Paths and Circuits
5	28-03 sept -oct	Travelling Salesman Problem
6	5-10 october	.. Planar Graphs.
7	12-17 october	Trees.
8	19-24 october	Trees.
9	26-31 october	Trees.
10	2-7 November	Definition and Examples of Finite State Machines
11	9-14 November	Equivalent Machines
12	16-21 November	Finite State Machines as Language Recognizer
13	23-03 December	MST EXAM

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Teaching plan (2020-21)

Teacher Name:Raminderjeet kaur

Class:BA SEM-

5

Paper : MATHEMATICAL METHODS- I

Sr. no.	Dates	Topic
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1	1-5 September	Fourier series : Fourier series, Theorems, Dirichlet's conditions
2	7-12 September	Fourier series for even and odd functions,
3	14-19 September	Half range Fourier series, Other forms of Fourier series
4	21-26 September	Definition of Laplace transform, linearity property- Piecewise continuous function.
5	28-03 sept -oct	Existence of Laplace transform, Functions of exponential order and of class A.
6	5-10 october	First and second shifting theorems of Laplace transform, Change of scale property- Laplace transform of derivatives.
7	12-17 october	Initial value problems, Laplace transform of integrals, Multiplication by t , Division by t ,
8	19-24 october	Laplace transform of periodic functions and error function
9	26-31 october	, Beta function and Gamma functions. Definition of Inverse Laplace transform
10	2-7 November	, Linearity property, First and second shifting theorems of inverse Laplace transform
11	9-14 November	, Change of scale property, Division by p
12	16-21 November	, Convolution theorem, Heaviside's expansion formula (with proofs and applications).

13	23-03 December	MST EXAM

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Teaching plan (2020-21)

Teacher Name: Raminderjeet kaur
6

Class: BA SEM-

Paper : Discrete Mathematics - II

Sr. no.	Dates	Topic
1	1-6 February	Brief review of Groups and Rings
2	8-13 February	. Boolean Algebras-Lattices and Algebraic Structures
3	15-20 February	. Duality
4	22-27 February	. Distributive and Complemented Lattices.
5	1-6 March	Boolean Lattices and Boolean Algebras
6	8-13 March	Boolean Lattices and Boolean Algebras
7	15-20 March	Boolean Functions and Expressions.

8	22-27 March	Boolean Functions and Expressions.
9	29-03 March-April	Propositional Calculus
10	5-10 April	Propositional Calculus
11	12-17 April	. Design and Implementation of Digital Networks.
12	19-24 April	Switching Circuits.
13	26-04 April-May	MST EXAM

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Teaching plan (2020-21)

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Class: BA SEM-

6

Paper : MATHEMATICAL METHODS- II

Sr. no.	Dates	Topic
1	1-6 February	Fourier transforms : Dirichlet's conditions, Fourier integral formula (without proof),
2	8-13 February	Fourier transform, Inverse Theorem for Fourier transform, Fourier sine and cosine transforms and their inversion formulae.
3	15-20 February	Linearity property of Fourier transforms, Change of scale property,

4	22-27 February	Shifting theorem, Modulation theorem, Convolution theorem of Fourier transforms,
5	1-6 March	Parseval's identity, Finite Fourier sine transform,
6	8-13 March	Inversion formula for sine transform,
7	15-20 March	Finite Fourier cosine Transform,
8	22-27 March	Inversion formula for cosine transform.
9	29-03 March-April	Applications of Laplace and Fourier transforms: Applications of Laplace transforms to the solution of ordinary differential
10	5-10 April	equations with constant coefficients and variable coefficients,
11	12-17 April	Simultaneous ordinary differential equations
12	19-24 April	, Second order Partial differential equations (Heat, wave and laplace).
13	26-04 April-May	MST EXAM