SHAHEED SMARAK P.G. GOVT. COLLEGE TIGAON (FARIDABAD)

LESSON PLAN FOR SESSION 2021-22. (Even Semester)

Subject Name with code and semester:--- Sequences and Series, BM-211 (Semester)

Teacher Name:--- Dr. Hariom

MONTH	TOPIC
March 2022.	Boundedness, least upper bound, greatest lower bound of a set, Neighbourhoods, interior points, isolated points, limit points, open set, closed set, interior and closure of a set of real numbers.
April 2022.	Bolzano-Weierstrass Theorem, Open-Cover, Compact set and Heine-Borel Theorem, Sequences and convergence, theorem on limits, bounded/monotonic/Cauchy sequence and principal of convergence, Subsequences and subsequential limits, Convergence and divergence of series, Comparision test, Cauchy's principal for series, geometric series, Hyper Harmonic/p-series.
May 2022	D-Alembert's ratio test, Rabbe's Test, Logarithmic test, de Morgan and Bertrand's test, Cauchy's nth root test, Graus test, Cauchy's integral test Cauchy's condensation test, Leibnitz test, absolute and conditional convergence, Abel test, Dirichlet's test, rearrangement of terms of series
June 2022.	Dirichlet's Theorem, Reimann's Re-arrangement theorem, Pringsheim's thm, Multiplication of series, Cauchy's Product of series. Convergence and absolute convergence of infinite product.

Singnature

SHAHEED SMARAK P.G. GOVT. COLLEGE TIGAON (FARIDABAD)

LESSON PLAN FOR SESSION 2021-22. (Even Semester)

Subject Name with code and semester:--- Number Theory and Trigonometry (BH-121) (Sem-II)

Teacher Name:--- Dr. Harlom

MONTH	TOPIC
March 2022.	Divisibility, G.C.D, L.C.M, Fundamental Theorem of Arithmatic Linear Congruence, Fermat's Theorem Wilson's Theorem and Converse.
April 2022.	Linear Diophantine eqn in two variables, CRS, RRS modulo Euler ϕ-function, Chinese remainder Theorem Quadratic residue, Legendre Symbol, Gauss lemma Gauss Reciprocity law, Greatest integer function The Möbius function & Möbius inversion formula No. of divisors and sum of divisors of a natural number.
May 2022.	De-Moivre's Theorem and its applications. Expension of trigonometrical functions, Direct Circular and hyperbolic functions and their properties. Inverse circular and hyperbolic functions and their properties.
June 2022	Logarithm of a complex quantity Gregory's series, Summation of Trigonometric series

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SHAHEED SMARAK GOVT. P.G. COLLEGE TIGAON (FARIDABAD)

LESSON PLAN FOR SESSION 2021-22. (Even Semester)

Subject Name with code and semester:--- Mathematical Foundations of Computer Science (BCA-Paper 108

Teacher Name:--- Dr. Harjeet

MONTH	TOPIC
March 2022	Preparing frequency distribution table, Measure of Central Tendency, Mean, Mode, Median
April 2022	Measure of Dispersion: Range, Variance and Standard Deviations, Correlation and Regression, Algorithms, merits and demerits, Exponentiation, Fast computation of exponentiation, Linear Search, Binary Search, "Big Oh" notation, Worst case, Advantage of logarithmic algorithm over linear, Complexity. Graphs & its types and degree subgraph, Isomorphic and homomorphic graphs. Adjacent and incidence matrices.
May 2022.	Path Circuit: Eulerian, Hamiltonian. Trees: Minimum distance trees, Minimum weight and Minimum distance spanning trees. Recursion: Recursively defined function, Merge sort, Insertion sort, Bubble sort and Decimal to Binary. LHRR, LHRRHCCs, DCRR. Recursive procedures
June 2022	Principal of Mathematical Induction, GCD, Euclidean Algorithm, Fibnacci Numbers, Congruence and equivalence relations. Public Key encryption schemes.

Harjeet

Signature

LESSON PLAN FOR SESSION 2021-22. (Even Semester)

Subject Name with code and semester:--- Linear Algebra, BM 362 (Sem - 6th)

Teacher Name:--- Dr Harvam

MONTH	TOPIC
March 2022	Vector spaces, subspaces, Sum and Direct Sum of subspaces, Linear Span, Linearly Independent and dependent subsets, Finitely Generated vector space.
April 2022	Finite Dimensional vector spaces, Basis, Dimensions, Quotient Space, Homorphism (Linear Transformation) of vectorspace, Vector space of all linear transformations, Dual Spaces, Bidual spaces, annihilator of subspaces, Null space, Range space of a linear transformation, Rank Nullity Theorem
May 2022.	Algebra of Linear transformation, Minimal poly, Singular and non-singular transformation, Matrix of linear transformation, Change of basis, Eigen values and Eigen vectors of linear transform, Inner product spaces, Cauchy-Schwarz inequality, Orthogonal vectors, Orthogonal Complements, sets and bases
June 2022	Bessel's inequality for finite dimensional vector spaces, Gram-Schmidt Orthogonalization process, Adjoint of a linear transformation and its properties, Unitary linear transformation

Dharvam

Signature

SHAHEED SMARAK GOVT. P.G. COLLEGE TIGAON (FARIDABAD)

LESSON PLAN FOR SESSION 2021-22.

Subject Name with code and semester:--- Dynamics (12BSM353) B.Sc 6th Semester

Teacher Name:--- Dr. Rajbir Singh

MONTH	TOPIC
March, 2022	1. Velocity and acceleration along radial, transverse, tangential and normal directions. 2. Relative velocity and acceleration 3. Simple Harmonic Motion 4. Elastic String.
April; 2022	(i) Mass; Momentum and force. (ii) Newton's laws of motion. (iii) Work; power and energy (iv) Definition of conservative forces and impulsive forces.
May 2022	(i) Motion on smooth and rough plane curves (ii) projectile motion of a particle in a plane (iii) Vector angular velocity.
June 2022	(i) General motion of a rigid body (ii) central orbits (iii) Kepler's laws of motion (iv) Motion of a particle in three dimensions. (v) Acceleration in terms of different coordinate systems.

SHAHEED SMARAK GOVT. P.G. COLLEGE TIGAON (FARIDABAD)

LESSON PLAN FOR SESSION 2021-22.

Subject Name with code and semester:--- Mathematics; paper: 12- BSM 122 (O.D.E.)

Teacher Name:--- Dr. Rajbir Singh

MONTH	TOPIC
March, 2022	Section - I 1. Geometrical meaning of Differential equation. 2. Exact differential eqs. 3. Integrating factors. 4. First order higher degree equations solvable for x, y, p Lagrange's equations 5. Clairaut's equations. 6 Equations reducible to clairaut's form. 7. Singular solutions
April, 2022.	Section - II: 1. orthogonal trajectories in cartesian co-ordinates and Polar co-ordinates. 2. Self orthogonal family of curves. 3 Linear differential equations with constant coefficients 4. Homogeneous Linear differential equations. 5. Equations reducible to homogeneous linear ordinary differential equations.
May 2022.	Section - III 1. Linear differential equations of second order. 2. Reduction to normal form 3. Transformation of the equation by changing the dependent variable/independent variable. 4. Solution by operators of non-homogeneous L.D. equations. 5. Reduction of order of the differential eqn. 6. Method of variation of Parameters 7. Method of Undetermined coeff.
June; 2022.	Section - IV 1. ordinary simultaneous differential equations. 2. Solution of simultaneous differential eqs involving operators $x\left(\frac{d}{dx}\right)$ or $t\left(\frac{d}{dt}\right)$ etc 3. Simultaneous eqns of the form $\frac{dx}{P} = \frac{dy}{Q} = \frac{dz}{R}$ 4. Total differential equations. 5. Conditions for $Pdx + Qdy + Rdz = 0$ to be exact 6. Method of solving $Pdx + Qdy + Rdz = 0$ by taking one variable const. 7. Method of Auxiliary eq

SHAHEED SMARAK GOVT. P.G. COLLEGE TIGAON (FARIDABAD)

LESSON PLAN FOR SESSION 2021-22.

Subject Name with code and semester:--- Business Mathematics - II Code :- 2.02 ; 2nd Sem B.Com

Teacher Name:--- Dr. Rajbir Singh

MONTH	TOPIC
	Section (i) Differentiation (ii) Applications of differentiation.
	(i) Matrices and determinants. Definition of matrices, Types of matrices. 2. Algebra of matrices 3. Calculation of values of determinants upto third order 4. Adjoint of a matrix 5. Elementary row and column operations 6. Finding inverse matrix through adjoint and elementary row or column operations. 7. Solution of systems of linear equations (upto three variables) and involving not more than three unknowns
	Section - (i) Compound interest and annuities (ii) Certain different types of interest rate (iii) Concept of present value and amount of sum (iv) Types of Annuities (v) Present value and amount of an annuity including ordinary and Compound
	Section (i) Ratio (ii) Proportion and percentage (iii) Profit and Loss.

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LESSON PLAN FOR SESSION 2021-22.

Subject Name with code and semester:--- Programming in C and Numerical Methods (21BSC243) B.Sc. IIIrd Sem (Maths).

Teacher Name:--- Dr Raghubir Singh

MONTH	TOPIC
	Section - I (i) Programmer's Model of a computer (ii) Algorithms (iii) Flow chart and data types (iv) operators and expressions (v) Input/output functions.
	Section - II (i) Decision Control Structure (ii) Decision Statements (iii) Logical and conditional Statements (iv) Implementation of Loops (v) Switch Statement & Case Control Structure (vi) Functions, preprocessors and arrays.
	Section - III (i) Strings, Character data type (ii) Standard String handling fns (iii) Arithmetic operations on character, Structures: definition, use of Structures, use of Structures in Arrays and Arrays in Structures, Pointers, Pointer data type etc. (v) Bisection method, Regula falsi method, Newton's Raphson's method etc.
	Section - IV (i) Simultaneous linear algebraic equations (ii) Gauss elimination method (iii) Triangularization Method (iv) Crout's Method (v) Cholesky decomposition method (vi) Iterative Method, Jacobi Method (vii) Gauss-Seidel's Method, Relaxation Method