LESSON PLAN OF B. SC. 4ᵀᴴ SEMESTER

FROM 01 JAN TO 31 JAN

Series solution of differential equation: power series method, Definition of Beta and Gamma functions, Bessel's equations and its solution: Bessel's functions and their properties- convergence, Recurrence, relation and generating functions, orthogonality of Bessel's functions. Legendre and Hermite's differential equations and their solutions: Legendre and Hermite's functions and their properties, Recurrence relation and generating functions. Orthogonality of Legendre and Hermite's polynomials, Rodrigue's formula for Legendre and Hermite's polynomials, Laplace integral representation of Legendre polynomial.

FROM 01 FEB TO 29 FEB

Laplace Transforms: Existence theorem for Laplace Transform, linearity of the Laplace Transform, shifting theorem, Laplace transform of derivative and integrals, differentiation and integration of Laplace transform, convolution theorem, inverse Laplace transforms of derivatives and integrals, solution of ordinary Differential equations using Laplace Transform. Fourier Transform: linear property, shifting, modulation, convolution theorem, Fourier transforms of derivatives, relation between Fourier and Laplace transform, Parseval's identity for Fourier transform.

FROM 01 MARCH TO 31 MARCH

Programmer's model of a computer, Algorithms, Flowchart, Data types, Operators and expressions, input / output functions. Decision control structure: decision statements, logical and conditional statements, implementation of Loops, switch statement and case control structure. Functions, processors and Arrays.

FROM 01 APRIL TO 25 APRIL

Solution of algebraic and Transcendental equations: Bisection method, Regula – Falsi method, Secant method, Newton- Raphson's method. Newton's iterative method for finding pth root of a number, Order of convergence of above methods. Simultaneous linear algebraic equations: Gauss – elimination method, Gauss – Jordan method, Triangularization method (LU decomposition method). Crout's method, Cholesky decomposition method, Iterative method, Jacobi's method, Gauss–Seidel's method, Relaxation method.

(Mr. Manish)
Incharge