Name of the Assistant/Associate Professor:Mrs. SURKSHA
Class and Semester: B.A. 3rd year (6th Semester)
Subject: Mathematics
PAPER: Dynamics
February -2024 **Topics** I Velocity and acceleration along radial, transverse, tangential and normal directions. Relative velocity and acceleration. Simple harmonic motion. Elastic strings. **Learning Objective:- Students will acquire knowledge about velocity, acceleration and simple harmonic motion.**
March -2024 **Topics** - Mass, Momentum and Force. Newton's laws of motion. Work, Power and Energy. Definitions of Conservative forces and Impulsive forces **First Assignment Simple Harmonic Motion** **Learning Objective:- Students will acquire knowledge about Force, Work, and Power.**
April -2024 **Topics** - Motion on smooth and rough plane curves. Projectile motion of a particle in a plane. Vector angular velocity. **Second Assignment** - Projectile motion of a particle in a plane. **Learning Objective:- Students will acquire knowledge regarding Projectile motion and vector angular velocity**
May -2024 **Topics-** General motion of a rigid body. Central Orbits, Kepler laws of motion. Motion of a particle in three dimensions. Acceleration in terms of different co-ordinate systems Revision of the syllabus. **Learning Objective:- Students will acquire knowledge regarding Central Orbits, Kepler laws of motion.**

22/02/2024

Name of the Assistant/Associate Professor:Mrs. SURKSHA
Class and Semester: B.A. 2nd year (4th Semester)
Subject: Mathematics
Paper: Special Functions And Integral Transforms
February -2024 **Topics-** Series solution of differential equations – Power series method,Definitions of Beta and Gamma functions. Bessel equation and its solution: Bessel functions and their properties Convergence, recurrence, Relations and generating functions **Learning Objective:- Students will solve problems on Power Series.**
March- 2024 **Topics** - Orthogonality of Bessel functions,Legendre and Hermite differentials equations and their solutions: Legendre and Hermite functions and their properties-Recurrence Relations and generating functions. Orhogonality of Legendre and Hermite polynomials. Rodrigues' Formula for Legendre & Hermite Polynomials, Laplace Integral Representation of Legendre polynomial. **First Assignment - Legendre and Hermite functions** **Learning Objective:- Students will acquire knowledge about Legendre and Hermite functions**
April - 2024 **Topics** - Laplace Transforms – Existence theorem for Laplace transforms, Linearity of the Laplace transforms, Shifting theorems, Laplace transforms of derivatives and integrals, Differentiation and integration of Laplace transforms, Convolution theorem, Inverse Laplace transforms, convolution theorem, Inverse Laplace transforms of derivatives and integrals, solution of ordinary differential equations using Laplace transform. **Second Assignment – Laplace and inverse Laplace Transformation.** **Test on Convolution theorem** **Learning Objective:- Students will solve ordinary differential equations using Laplace transform.**
May-2024 **Topics-** Fourier transforms: Linearity property, Shifting, Modulation, Convolution Theorem, Fourier Transform of Derivatives, Relations between Fourier transform and Laplace transform, Parseval's identity for Fourier transforms, solution of differential Equations using Fourier Transforms. **Revision of the syllabus** **Learning Objective:- Students will able to solve problems on Fourier transforms.**

28/02/2024

Name of the Assistant/Associate Professor:Mrs. SURKSHA
Class and Semester: B.A.3rd year (6th Semester)
Subject: Mathematics
Paper: Real and Complex Analysis
February -2024 **Topics-** Jacobians, Beta and Gama functions, Double and Triple integrals, Dirichlets integrals, change of order of integration in double integrals. **Learning Objective:- Students will learn about Beta and Gama functions, Double and Triple integrals.**
March- 2024 **Topics** Fourier's series: Fourier expansion of piecewise monotonic functions, Properties of Fourier Co-efficients, Dirichlet's conditions, Parseval's identity for Fourier series, Fourier series for even and odd functions, Half range series, Change of Intervals.. **First Assignment - Double and Triple integrals.** **Learning Objective:- Students will acquire knowledge about Fourier's series.**
April - 2024 **Topics** Extended Complex Plane, Stereographic projection of complex numbers, continuity and differentiability of complex functions, Analytic functions, Cauchy-Riemann equations. Harmonic functions. **Second Assignment - Continuity and Differentiability of complex functions.** **Test on Cauchy-Riemann equations.** **Learning Objective:- Students will learn about Extended Complex Plane**
May-2024 **Topics-** Mappings by elementary functions: Translation, rotation, Magnification and Inversion. Conformal Mappings, Mobius transformations. Fixed pints, Cross ratio, Inverse Points and critical mappings. **Revision of the syllabus** **Learning Objective:- Students will learn about Translation, rotation, Magnification and Inversion.**

22/02/2024

Name of the Assistant/Associate Professor:Mrs. SURKSHA

Class and Semester: B.A. 2nd year (4th Semester)

Subject: Mathematics

PAPER: PROGRAMMING IN C AND NUMERICAL METHODS

February -2024

Topics I Programmer's model of a computer, Algorithms, Flow charts, Data types,Operators and expressions, Input / outputs function Decisions control structure: Decision statements, Logical and conditional statements

Learning Objective:- Students will acquire knowledge about Algorithms, Flow charts,Input / outputs function .

March -2024

Topics - Implementation of Loops , Switch Statement & Case control structures. Functions, Preprocessors and Arrays. Strings: Character Data Type, Standard String handling Functions, Arithmetic Operations on Characters. Structures: Definition, using Structures, use of Structures in Arrays and Arrays in Structures. Pointers: Pointers Data type, Pointers and Arrays

First Assignment - Switch Statement & Case control structures

Learning Objective:- Students will acquire knowledge about , Decisions control structure and Implementation of Loops .

April -2024

Topics - Pointers and Functions. 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.

Second Assignment - Solution of Algebraic and Transcendental equations.

Learning Objective:- Students will acquire knowledge regarding Solutions of Algebraic and Transcendental equations.

May -2024

Topics- 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-Seidal's method, Relaxation methods.

Revision of the syllabus.

Learning Objective:- Students will acquire knowledge regarding various methods to solve simultaneous linear algebraic equations.

22/02/2024