

LESSON PLAN

JULY -2023 to DECEMBER-2023 (up to odd session)

Name of the Assistant/Associate Professor: Mrs. SURKSHIA

Class and Semester: B.A. 2nd year (3rd Semester)

Subject: Mathematics

Paper: Statics

JULY-2023

Topics- Composition and resolution of forces. Parallel forces

Learning Objective:- Students will able to find the resultant of any no. of forces acting at a point.

AUGUST-2023

Topics :- Moments and Couples, Analytical conditions of equilibrium of coplanar forces. Friction. Centre of Gravity. virtual work.

Learning Objective:- Students will able to learn about Centre of Gravity and virtual work.

SEPTEMBER-2023

Forces in three dimensions. Poinots central axis.

First Assignment on Forces in three dimensions

Test on Poinots central axis.

Learning Objective:- Students will able to find Forces in three dimensions

OCTOBER-2023

Topics :- Null lines and planes. Stable and unstable equilibrium.

Second Assignment on Null lines and Planes.

Learning Objective:- Students will be able to learn about Null lines and planes

NOVEMBER- 2023

Topics- Wrenches.

Learning Objective:- Students will able to learn about Wrenches.

DECEMBER-2023

Revision of Syllabus.

Chen
07/19/2023

LESSON PLAN

July- 2023 to December -2023 (up to odd session)

Name of the Assistant/Associate Professor: Mrs. SURKSHA
Class and Semester: B.A. 3 rd year (5 th Semester)
Subject: Mathematics
Paper: NUMERICAL ANALYSIS
JULY-2023 Topics:- Finite Differences operators and their relations. Finding the missing terms and effect of error in a difference tabular values. Interpolation with equal intervals: Newton's forward and Newton's backward interpolation formulae. Interpolation with unequal intervals. Learning Objective:- Students will be able to learn about Finite Differences operators and their relations.
AUGUST-2023 Topics:- Newton's divided difference, Lagrange's Interpolation formulae, Hermite Formula. First Assignment on the topic of Lagrange's Interpolation formulae. Central Differences: Gauss forward and Gauss's backward interpolation formulae, Sterling, Bessel Formula. Learning Objective:- Students will be able to solve problems based on Sterling, Bessel Formula.
SEPTEMBER-2023 Topics:- Probability distribution of random variables, Binomial distribution, Poisson's distribution, Normal distribution: Mean, Variance and Fitting. Second Assignment on the topic of Random variables. Learning Objective:- Students will be able to learn about Binomial distribution.
OCTOBER-2023 Topics:- Numerical Differentiation: Derivative of a function using interpolation formulae as studied in Sections-I & II. Eigen Value Problems: Power method, Jacobi's method, Given's method, House-Holder's method, QR method, Lanczos method. Numerical Integration: Newton-Cote's Quadrature formula, Trapezoidal rule, Simpson's one-third and three-eighth rule. Learning Objective:- Students will be able to learn about Numerical Differentiation.
NOVEMBER-2023 Topics:- Chebychev formula, Gauss Quadrature formula: Numerical solution of ordinary differential equations: Single step methods- Picard's method, Taylor's series method, Euler's method, Runge-Kutta Methods. Multiple step methods; Predictor-corrector method, Modified Euler's method, Milne-Simpson's method. Learning Objective:- Students will be able to learn about .
DECEMBER- 2023 Topics-Revision of syllabus

Shes
07/10/2023

LESSON PLAN

July- 2023 to December -2023 (up to odd session)

Name of the Assistant/Associate Professor: Mrs. SURKSHIA

Class and Semester: B.A. 3rd year (5th Semester)

Subject: Mathematics

Paper: Groups and Rings

JULY-2023

Topics- Definition of a group with example and simple properties of groups, Subgroups and Subgroup criteria, Generation of groups, cyclic groups, Cosets, Left and right cosets, Index of a subgroup Coset decomposition, Lagrange's theorem and its consequences, Normal subgroups, Quotient groups.

Learning Objective:- Students will able to learn about Groups and its properties.

AUGUST-2023

Topics:- Homomorphisms, Isomorphisms, Automorphisms and Inner Automorphisms of a group.

First Assignment on the topic of Homomorphisms.

Automorphisms of cyclic groups, Permutations groups, Even and odd permutations, Alternating groups, Cayley's theorem, Center of a group and derived group of a group.

Learning Objective:- Students will able to solve Homomorphisms, Isomorphisms, Automorphisms and Inner Automorphisms of a group.

SEPTEMBER-2023

Topics:-

Permutations groups, Even and odd permutations, Alternating groups, Cayley's theorem, Center of a group and derived group of a group

Second Assignment on the topic of Cayley's theorems.

Learning Objective:- Students will able to learn about Permutation.

OCTOBER-2023

Topics:-

Introduction to rings, subrings, integral domains and fields, Characteristics of a ring, Ring homomorphisms, ideals (prime, maximal) and Quotient rings, Field of quotients of an integral domain.

Learning Objective:- Students will be able to learn about rings and their characteristics.

NOVEMBER-2023

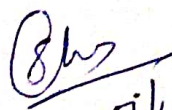
Topics:-

Euclidean rings, Polynomial rings, Polynomials over the rational field, The Eisenstein's criterion, Polynomial rings over commutative rings, Unique factorization domain, R unique factorization domain implies so is $R[X_1, X_2, \dots, X_n]$

Learning Objective:- Students will able to learn about Euclidean rings, Polynomial rings

DECEMBER- 2023

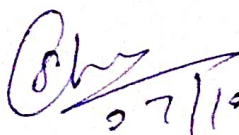
Topics-Revision of syllabus


07/10/23

LESSON PLAN

July- 2023 to December -2023 (up to odd session)

Name of the Assistant/Associate Professor: Mrs. SURKSHIA
Class and Semester: B.A. 2 nd year (3 rd Semester)
Subject: Mathematics
Paper: Partial Differential Equations
JULY-2023 Topics- Partial differential equations: Formation, order and degree, Linear and Non-Linear Partial differential equations of the first order: Complete solution, singular solution, General Solution. Cauchy's problem for second order partial differential equations, Characteristic equations and characteristic curves of second order partial differential equation Learning Objective:- Students will able to solve second order partial differential equations
AUGUST-2023 Topics Solution of Lagrange's linear equations First Assignment on the topic of Lagrange's linear equations Partial differential equation with variable co-efficient reducible to equations with constant coefficients, their complimentary functions and particular Integrals, Equations reducible to linear equations with constant co-efficient . Classification of linear partial differential equations of second order, Learning Objective:- Students will able to solve Hyperbolic, parabolic and elliptic type equations
SEPTEMBER-2023 Topics Solution of linear hyperbolic equations, Hyperbolic, parabolic and elliptic types, Reduction of second order linear partial differential equations to Canonical (Normal) forms and their solutions Second Assignment on the topic of Canonical (Normal) forms. Learning Objective:- Students will able to solve linear partial differential equations to Canonical (Normal) forms and their solutions
OCTOBER-2023 Topics:- Monge's method for partial differential equations of second order. Method of separation of variables: Solution of Laplace's equation, Wave equation (one and two dimensions) Charpit's general method of solution. Compatible systems of first order equations, Jacobi's method.. linear partial differential equations of second and higher orders, Linear and non-linear homogenous and non-homogenous equations with constant co-efficients, Learning Objective:- Students will be able to learn about Charpit's general method of solution and Jacobi's method..
NOVEMBER-2023 Topics:- Linear and non-linear homogenous and non-homogenous equations with constant co-efficients. Diffusion (Heat) equation (one and two dimension) in Cartesian Coordinate system. Compatible systems of first order equations, Jacobi's method.. linear partial differential equations of second and higher orders, Linear and non-linear homogenous and non-homogenous equations with constant co-efficients, Learning Objective:- Students will able to solve Heat equations and wave equations
DECEMBER- 2023 Topics-Revision of syllabus


27/10/2023