

LESSON PLAN

DEPARTMENT OF ELECTRICAL ENGG. ITT, CHOUDWAR

SUBJECT: ENGG. MATH-III

Periods: 4 per week

SEMESTER:3rd

NAME OF FACULTY: Sk. S. Ali

No. of weeks: 15

| Week | Class Day | Theory / Practical Topics |
|-----------------|-----------------|---|
| 1 st | 1 st | Complex Numbers Real and Imaginary numbers , Complex numbers, conjugate complex numbers, Modulus and Amplitude of a complex number. |
| | 2 nd | Geometrical Representation of Complex Numbers, Properties of Complex Numbers, Determination of three cube roots of unity and their properties 3 rd Semester Electrical, De Moivre's theorem , Solve problems on |
| 2 nd | 1 st | Matrices Define rank of a matrix. Perform elementary row transformations to determine the rank of a matrix. State Rouche's theorem for consistency of a system of linear equations in unknowns |
| | 2 nd | Solve equations in three unknowns testing consistency, Solve problems |
| 3 rd | 1 st | Linear Differential Equations , Define Homogeneous and Non Homogeneous Linear Differential Equations with constant coefficients with examples. , Find general solution of linear Differential Equations in terms of C.F. and P.I. |
| | 2 nd | Derive rules for finding C.F. And P.I. in terms of operator D, excluding . Define partial differential equation (P.D.E) , Form partial differential equations by eliminating arbitrary constants and arbitrary functions |
| 4 th | 1 st | Solve partial differential equations of the form $Pp + Qq = R$ Solve problems |
| | 2 nd | Laplace Transforms , Define Gamma function and and find , Define Laplace Transform of a function and Inverse Laplace Transform , Derive L.T. of standard functions and explain existence conditions of L.T. |
| 5 th | 1 st | Explain linear, shifting property of L.T, Formulate L.T. of derivatives, integrals, multiplication by and division by t |
| | 2 nd | Derive formulae of inverse L.T. and explain method of partial fractions solve problem |
| 6 th | 1 st | Fourier Series Define periodic functions, State Dirichlet's condition for the Fourier expansion of a function and it's convergence |
| | 2 nd | Express periodic function satisfying Dirichlet's conditions as a Fourier series. |
| 7 th | 1 st | State Euler's formulae |

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| | 2 nd | Define Even and Odd functions and find Fourier Series |
| 8 th | 1 st | Obtain F.S of continuous functions and functions having points of discontinuity |
| | 2 nd | Solving problems |
| 9 th | 1 st | Numerical Methods |
| | 2 nd | Appraise limitation of analytical methods of solution of Algebraic Equations |
| 10 th | 1 st | Derive Iterative formula for finding the solutions of Algebraic Equations by |
| | 2 nd | Bisection method |
| 11 th | 1 st | Newton- Raphson method |
| | 2 nd | solve problems on (Bisection method, Newton- Raphson method) |
| 12 th | 1 st | Finite difference and interpolation |
| | 2 nd | Explain finite difference and form |
| 13 th | 1 st | table of forward and backward difference |
| | 2 nd | Define shift Operator and establish relation between & difference operator |
| 14 th | 1 st | Derive Newton's forward and backward interpolation formula for equal intervals. |
| | 2 nd | State Lagrange's interpretation formula for unequal intervals |
| 15 th | 1 st | Explain numerical integration |
| | 2 nd | Newton's Cote's formula. ,Trapezoidal rule, Simpson's 1/3rd rule Solve problems |