



“Mechanized Design Application”
Department of Mechanical Engineering

Course Name: AC-III
Class: SE Mechanical Engineering
Course Code: 203156 (2019 Pattern)

Course Objectives:

1. To make the students familiarize with concepts and techniques in Ordinary & Partial differential equations, Laplace transform & Fourier transform, Statistical methods, Probability theory and Vector calculus.
2. The aim is to equip them with the techniques to understand advanced level mathematics and its applications that would enhance analytical thinking power, useful in their disciplines.

Course Outcomes:

On completion of the course, learner will be able to

- CO1. SOLVE higher order linear differential equations and its applications to model and analyze mass spring systems.
- CO2. APPLY Integral transform techniques such as Laplace transform and Fourier transform to solve differential equations involved in vibration theory, heat transfer and related mechanical engineering applications.
- CO3. APPLY Statistical methods like correlation, regression in analyzing and interpreting experimental data applicable to reliability engineering and probability theory in testing and quality control.
- CO4. PERFORM Vector differentiation & integration, analyze the vector fields and APPLY to fluid flow problems.
- CO5. SOLVE Partial differential equations such as wave equation, one and two dimensional heat flow equations.