

II Year I Semester

COURSE OUTCOMES – MECHANICAL ENGINEERING

Mathematics-IV

CO 1:- analyze the complex functions with reference to their analyticity, integration using Cauchy's integral theorem

CO 2:- find the Taylor's and Laurent's series expansion of complex functions

CO 3:- express any periodic function in term of sines and cosines

CO 4:- express a non-periodic function as integral representation

Thermodynamics

CO 1:- To be able to state the First Law and to define heat, work, thermal efficiency and the difference between various forms of energy.

CO 2:- To be able to identify and describe energy exchange processes (in terms of various forms of energy, heat and work) in aerospace systems.

CO 3:- To be able to apply the steady-flow energy equation or the First Law of Thermodynamics to a system of thermodynamic components (heaters, coolers, pumps, turbines, pistons, etc.) to estimate required balances of heat, work and energy flow.

CO 4:- To be able to apply ideal cycle analysis to simple heat engine cycles to estimate thermal efficiency and work as a function of pressures and temperatures at various points in the cycle.

Kinematics of Machinery

CO 1:- Distinguish kinematic and kinetic motion

CO 2:- Identify the basic relations between distance, time, velocity, and acceleration

CO 3:- Apply vector mechanics as a tool for solving kinematic problems.

CO 4:- Create a schematic drawing of a real-world mechanism

Metallurgy and Material Science

CO 1:- Analyze the Structure of materials at different levels, basic concepts of crystalline materials like unit cell, FCC, BCC, HCP, APF (Atomic Packing Factor), Co-ordination Number etc.

CO 2:- Explain the concept of phase & phase diagram & understand the basic terminologies associated with metallurgy. Construction and identification of phase diagrams and reactions

CO 3:- Explain features, classification, applications of newer class materials like smart materials, piezoelectric materials, biomaterials, composite materials etc.

CO 4:- Understand concept of mechanical behavior of materials and calculations of same using appropriate equations

Mechanics of solids

CO 1:- Analyze the behavior of the solid bodies subjected to various types of loading;

CO 2:- Apply knowledge of materials and structural elements to the analysis of simple structures;

CO 3:- Undertake problem identification, formulation and solution using a range of analytical

methods;

CO 4:- Analyze and interpret laboratory data relating to behavior of structures and the materials they are made of, and undertake the associated laboratory work individually and teams

Mechanics of solids lab

CO 1:- Analyze the behavior of the solid bodies subjected to various types of loading.

CO 2:- Apply knowledge of materials and structural elements to the analysis of simple

CO 3:- Undertake problem identification, formulation and solution using a range of analytical methods

CO 4:- Analyze and interpret laboratory data relating to behavior of structures and the materials they are made of, and undertake associated laboratory work individually and in teams.

Metallurgy and Material Science lab

CO 1:- develop the necessary background and skills for successful careers in the materials-related Industries

CO 2:- well prepared for management positions in industry or continued education towards a graduate degree

Gender Sensitization lab

CO 1:- Students will have developed a better understanding of important issues related to gender in contemporary India.

CO 2:- Students will be sensitized to basic dimensions of the biological, sociological, psychological and legal aspects of gender. This will be achieved through discussion of materials derived from research, facts, everyday life, literature and film

CO 3:- Students will attain a finer grasp of how gender discrimination works in our society and how to counter it.

CO 4:- Students will acquire insight into the gendered division of labour and its relation to politics and economics

Thermodynamics lab

CO 1:- Students will determine flash and fire points

CO 2:- Students will analyze the importance of carbon residue

CO 3:- Students can state the viscosity of the fluid