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DEPARTMENT OF MECHANICAL ENGINEERING

COURSE OUTCOMES

II YEAR-I SEM(NECR23)

Course Name: THERMODYNAMICS

23A03301	THERMODYNAMICS
CO1	Explain the importance of thermodynamic properties related to conversion of heat energy into work. (L3)
CO2	Apply the Zeroeth and First Law of Thermodynamics. (L3)
CO3	Understand Second Law of Thermodynamics. (L2)
CO4	Analyze the Mollier charts, T-S and h-s diagrams, Steam calorimetry, Phase Transformations(L4)
CO5	Evaluate the COP of refrigerating systems and properties, processes of psychrometry and sensible and latent heat loads. (L5)

Course Name: MECHANICS OF SOLIDS

23A03302	MECHANICS OF SOLIDS
CO1	Learn all the methods to analyze beams, columns, frames for normal ,shear ,and Torsion stresses and to solve deflection problems in preparation for the design of such structural components
CO2	Apply the Zeroeth and First Law of Thermodynamics. (L3)
CO3	Understand Second Law of Thermodynamics. (L2)
CO4	Analyze the Mollier charts, T-S and h-s diagrams, Steam calorimetry, Phase Transformations(L4)
CO5	Evaluate the COP of refrigerating systems and properties, processes of psychrometry and sensible and latent heat loads. (L5)

Course Name: MATERIAL SCIENCE AND METALLURGY

23A03303	MATERIAL SCIENCE AND METALLURGY
CO1	Understand the crystalline structure of different metals and study the stability of phases in different alloy systems.(L2)
CO2	Study the behavior of ferrous and non-ferrous metals and alloys and their application in different domains. .(L1)
CO3	Understand the effect of heat treatment, addition of alloying elements on properties of ferrous metals. .(L2)
CO4	Grasp the methods of making of metal powders and applications of powder metallurgy.(L3)
CO5	Comprehend the properties and applications of ceramic, composites and other advanced methods. .(L4)

Course Name: MECHANICS OF SOLIDS AND MATERIALS SCIENCE LAB

23A03304	MECHANICS OF SOLIDS AND MATERIALS SCIENCE LAB
CO1	Understand the stress strain behavior of different materials(L2)
CO2	Evaluate the hardness of different materials(L4)
CO3	Explain the relation between elastic constants and hardness of materials. (L1)
CO4	Identify various microstructures of steels and cast irons. (L3)
CO5	Evaluate hardness of treated and untreated steels. (L4)

Course Name: COMPUTER-AIDED MACHINE DRAWING

23A03305	COMPUTER-AIDED MACHINE DRAWING
CO1	Demonstrate the conventional representations of materials and machine components. (L3)
CO2	Model riveted, welded and key joints using CAD system. (L6)
CO3	Create solid models and sectional views of machine components. (L6)
CO4	Generate solid models of machine parts and assemble them. (L5)
CO5	Translate 3D assemblies into 2D drawings. (L6)



DEPARTMENT OF MECHANICAL ENGINEERING

COURSE OUTCOMES

II YEAR-II SEM(NECR23)

Course Name: INDUSTRIAL MANAGEMENT

23A52402d	INDUSTRIAL MANAGEMENT
CO1	Learn about how to design the optimal layout. (L1)
CO2	Demonstrate work study methods. (L3)
CO3	Explain Quality Control techniques. (L2)
CO4	Discuss the financial management aspects (L3)
CO5	Understand the human resource management methods.. (L2)

Course Name: MANUFACTURING PROCESSES

23A03401T	MANUFACTURING PROCESSES
CO1	Design the patterns and core boxes for metal casting processes. (L6)
CO2	Understand the different welding processes. (L2)
CO3	Demonstrate the different types of bulk forming processes. (L3)
CO4	Understand sheet metal forming processes (L2)
CO5	Learn about the different types of additive manufacturing processes. (L2)

Course Name: FLUID MECHANICS & HYDRAULIC MACHINES

23A03402T	FLUID MECHANICS & HYDRAULIC MACHINES
CO1	Understand the basic concepts of fluid properties.. (L2)
CO2	Estimate the mechanics of fluids in static and dynamic conditions.. (L5)
CO3	Apply the Boundary layer theory, flow separation and dimensional analysis. (L3)
CO4	Estimate the hydrodynamic forces of jet on vanes in different positions. (L5)
CO5	Understand the working Principles and performance evaluation of hydraulic pump and turbines. (L2)

Course Name: THEORY OF MACHINES

23A03403	THEORY OF MACHINES
CO1	Understand different mechanisms and their inversions. (L2)
CO2	Calculate velocity and acceleration of different links in a mechanism.(L4)
CO3	Apply the effects of gyroscopic couple in ships, aero planes and road vehicles. (L3)
CO4	Evaluate unbalance mass in rotating machines. (L5)
CO5	Analyze free and forced vibrations of single degree freedom systems. (L4)

Course Name: FLUID MECHANICS & HYDRAULIC MACHINES LAB

23A03402P	FLUID MECHANICS & HYDRAULIC MACHINES LAB
CO1	Demonstrate the devices used for measuring flow (L3)
CO2	Compute major losses in pipes. (L5)
CO3	Illustrate the operating parameters of turbines.. (L2)
CO4	Explain the working of different types of pumps. (L2)
CO5	Explain the devices used for measuring flow (L2)

Course Name: MANUFACTURING PROCESSES LAB

23A03401P	MANUFACTURING PROCESSES LAB
CO1	Make moulds for sand casting. (L2)
CO2	Fabricate different types of components using various manufacturing techniques. (L5)
CO3	Adapt unconventional manufacturing methods. (L3)
CO4	Develop Different Weld joints. (L6)
CO5	Explain different types of 3d Printing techniques. (L2)

Course Name: DESIGN THINKING & INNOVATION

23A99401	DESIGN THINKING & INNOVATION
CO1	Define the concepts related to design thinking. (L1,L2)
CO2	Explain the fundamentals of Design Thinking and innovation (L1,L2)
CO3	Apply the design thinking techniques for solving problems in various sectors. (L3)
CO4	Analyse to work in a multidisciplinary environment (L4)
CO5	Evaluate the value of creativity (L5)
CO6	Formulate specific problem statements of real time issues(L3,L6)