Seth Jai Parkash Mukand Lal Institute of Engineering & Technology
Department of Mechanical Engineering

Vth Sem

I.C Engine & Gas Turbine	
Subject Code: ME-301N	
COURSE OUTCOMES	
CO1	Understand the basic concept of I C engine and terminology.
CO2	Understand various types of fuel supply and injection system with its component.
CO3	Knowledge of lubrication system of engine and ability to calculate its performance parameters.
CO4	To teach students the environmental, social and technological issues related to the future wide-spread use of internal combustion engines.
CO5	Knowledge of various phenomenon in combustion engine
CO6	Knowledge of gas turbines working and applications.

FLUID MACHINES	
ME-303N	
COURSE OUTCOMES	
CO1	Knowledge of momentum equation and its application in various fluid machines.
CO2	Knowledge of hydraulic turbine working principle and design analysis ability.
CO3	Knowledge of hydraulic centrifugal and reciprocating pump working principle and design analysis ability.
CO4	Ability to design the hydraulic system prototype on the basis of dimensional analysis.
CO5	Ability to analyze various fluid machines for design.
CO6	Knowledge of various types of Hydraulic Machines.

HEAT TRANSFER	
ME-305N	
COURSE OUTCOMES	
CO1	Conceptual knowledge of different modes of heat transfer.
CO2	Ability to formulate and analyze one dimension conduction problems.
CO3	Knowledge of extended surfaces for heat transfer and design analysis.
CO4	Ability to apply forced and free convection correlation for different engineering problems.
CO5	Knowledge of principles of radiation and ability to calculate black/ non-black body radiations.
CO6	Ability to design heat exchanger by application of knowledge of heat exchange principles.

INDUSTRIAL ENGINEERING	
SUBJECT CODE ME-	
COURSE OUTCOMES	
CO 1	Ability to apply various techniques of method study and work measurement.
CO 2	Conceptual knowledge of industrial organization & production planning & control.
CO 3	Ability to apply sales forecasting and materials management techniques.
CO 4	Knowledge of inventory management techniques and their application.
CO5	Knowledge of wages and incentive schemes and product life cycle.
CO6	Knowledge of supply chain management, JIT manufacturing and impact on Indian industries.

MACHINE DESIGN - I	
ME-309N	
COURSE OUTCOME	
CO1	Ability to apply laws of mathematics, physics and engineering to design problems.
CO2	Ability to apply design principles for the fulfillment of human needs in terms of aesthetics, comfort and economy.
CO3	Ability to select different engineering materials for design of mechanical components.
CO4	Ability to design and analyze mechanical components under different load conditions.
CO5	Knowledge of possible modes of failure of mechanical components.
CO6	Ability to improve the design process cycle undergone by a daily use product.

PRODUCTION TECHNOLOGY-II	
SUBJECT CODE ME-311 N	
COURSE OUTCOMES	
CO 1	Knowledge of machine tool power drives, their kinematics and classification.
CO 2	Ability to design speed gearbox for machine tool.
CO 3	To understand about thread manufacturing, gear production, generation and various process on gears including gear finishing etc.
CO 4	Knowledge of working of unconventional machining processes, application and advantages.
CO5	Knowledge of machine tool vibrations and their effects, causes and control.
CO6	Knowledge of design principles of jigs and fixtures.

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I.C ENGINE LAB	
Subject Code: ME-313N	
COURSE OUTCOMES	
CO1	Knowledge of principle, construction and working of S.I. and C.I. engine.
CO2	Ability to calculate performance parameters of reciprocating air compressor, petrol and diesel engine experimentally.
CO3	Knowledge of lubrication, cooling systems of I C engine and ability to demonstrate.
CO4	Ability to prepare heat balance sheet of IC engine and analyze.
CO5	Knowledge of gas turbine working principle and working and ability to demonstrate.
CO6	Ability to calculate performance parameters of air compressor experimentally.

FLUID MACHINES LAB	
ME-315N	
COURSE OUTCOMES	
CO1	Knowledge of the principle of working of various hydraulic machines and ability to demonstrate.
CO2	Knowledge of the practical working of various hydraulic turbines with ability to calculate parameters.
CO3	Knowledge of the practical working of various hydraulic pumps with ability to calculate parameters.
CO4	Knowledge of the practical working of various hydraulic machines with ability to calculate parameters.
CO5	Ability to calculate impact of jets.
CO6	Ability to work efficiently as an individual or in a group, integrating skills and knowledge to make decisions in the performance of fluid mechanics tasks

HEAT TRANSFER LAB	
ME-317N	
COURSE OUTCOMES	
CO1	Ability to design and conduct experiments, acquire data, analyze and interpret data.
CO2	Ability to measure the thermal conductivity of metal rod, insulating material and liquids experimentally.
CO3	Conceptual knowledge of composite wall and ability to measure parameters.
CO4	Ability to calculate free and forced convection heat transfer experimentally.
CO5	Ability to measure the performance of a heat exchanger.
CO6	Conceptual knowledge of solar heating and importance to the society and environment.

VIth Sem.

REFRIGERATION AND AIR CONDITIONING	
ME-302N	
COURSE OUTCOMES	
CO1	Knowledge of fundamentals of refrigeration and their terminology.
CO2	Ability to formulate and analyze vapor compression and air refrigeration problems.
CO3	Ability to formulate and analyze vapor absorption refrigeration problems.
CO4	Knowledge of refrigerants, application and impact on environment.
CO5	Knowledge of psychometric properties and construction and use of psychometric chart.
CO6	Ability to calculate cooling and heating load and design of HVAC system.

TRIBOLOGY AND MECHANICAL VIBRATION	
ME-304N	
COURSE OUTCOMES	
CO1	Knowledge of fundamentals of vibration phenomenon and ability to construct the equations of motion for free-body diagrams.
CO2	Ability to model and analyze single- and multi-degree of freedom systems for free vibrations.
CO3	Ability to model and analyze single- and multi-degree of freedom systems for forced vibrations.
CO4	Ability to solve problems on multi degree freedom systems using numerical methods.
CO5	Ability to apply knowledge of vibration isolation and measurement to mechanical system.
CO6	Knowledge of fundamentals of tribology and application in mechanical system.

OPERATIONAL RESEARCH	
ME-306N	
COURSE OUTCOMES	
CO1	Knowledge of basic concepts, models and statements of the operations research theory and application in industry.
CO2	Ability to formulate and solve linear programming problems using appropriate techniques and optimization solvers.
CO3	Ability to solve problems of transporting the products from origins to destinations with least transportation cost.

CO4	Develop mathematical skills to analyze and solve network model analysis and interpret and communicate the reports.
CO5	Knowledge of simulation, its applications to solve engineering problems along with its merits and demerits.
CO6	Ability to apply decision making process to solve the real world situations.

COMPUTER AIDED DESIGN AND MANUFACTURING	
ME-308N	
COURSE OUTCOMES	
CO1	Knowledge of application of computers in design and manufacturing process.
CO2	Ability to model different types of curves, surface and solid.
CO3	To learn 2D transformations of the basic entities.
CO4	Ability to prepare part programs for CNC machines
CO5	Knowledge of group technology, computer aided process planning, computer aided quality control.
CO6	Knowledge of FMS system and ability to plan layout for industrial application.

MACHINE DESIGN-II	
ME-310N	
COURSE OUTCOMES	
CO1	Ability to apply industrial approach to design mechanical components.
CO2	Ability to analyze the force components acting on the gears and solve design problems of different types of gears.
CO3	Ability to solve design problems of belts, chains, pulleys and friction clutches and brakes.
CO4	Able to make selection of bearings from manufacturer's catalogue and solve spring design problems.
CO5	Ability to design and solve the problems of IC engine components and flywheels.
CO6	Ability to interpret analyzed results to find optimal solution to engineering problems.

REFRIGERATION AND AIR CONDITIONING LAB	
ME-312N	
COURSE OUTCOMES	
CO1	Ability to conduct experiments on different refrigeration systems for analysis.
CO2	Ability to apply the knowledge of cooling load estimation in designing HVAC
CO3	Ability to analyze the humidity measurement and its importance in air-conditioning.

CO4	Ability to utilize psychometric chart to calculate performance performance of refrigeration system.
CO5	Ability to use different expansion device ad their effect on performance of refrigeration system.
CO6	Knowledge of different control devices used in refrigeration system.

Tribology and Mechanical Vibration Lab	
ME-314N	
COURSE OUTCOMES	
CO1	Ability to analyze mathematical and actual un-damped vibrating models for free vibration
CO2	Ability to analyze damped vibrating system.
CO3	Ability to analyze multi degree of freedom system and interpret the results.
CO4	Ability to analyze torsional vibration system and interpreting the results for system design.
CO5	Ability to use vibrating system to measure moment of inertia.
CO6	Ability to analyze pressure distribution of lubricating oil in bearings

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COMPUTER AIDED DESIGN AND MANUFACTURING LAB	
ME-316N	
COURSE OUTCOMES	
CO1	Knowledge of use of computers in manufacturing and designing with use of latest softwares.
CO2	Ability to read orthographic views.
CO3	Knowledge about the 2D drawing and modeling.
CO4	Knowledge to use 3D software in part designing.
CO5	Knowledge of the G codes and M codes used in CNC machines.
CO6	Ability to prepare part programs for different components to be manufactured by CNC.