DEPARTMENT OF MECHANICAL ENGINEERING
2.6.1. Programme Outcomes (POs) and Course Outcomes (COs) for all Programmes offered by the institution are stated and displayed on website and attainment of POs and COs are evaluated
(SEM – V – C – SCHEME)
2022 REGULATION-COURSE OUTCOMES

SEMESTER	COURSE CODE	COURSE NAME	COURSE ID	COURSE OUTCOME
V	MEC501	Mechanical Measurements and Controls	CO 1	Handle, operate and apply the precision measuring instruments / equipment's.
			CO 2	Analyze simple machined components for dimensional stability & functionality.
			CO 3	Classify various types of static characteristics and types of errors occurring in the system.
			CO 4	Classify and select proper measuring instrument for displacement, pressure, flow and temperature measurements.
			CO 5	Design mathematical model of system/process for standard input responses and analyse error and differentiate various types of control systems and time domain specifications
			CO 6	Analyse the problems associated with stability
V	MEC502	Thermal Engineering	CO 1	Analyze the three modes of heat transfer in engineering application.
			CO 2	Analyze the three modes of heat transfer in engineering application..
			CO 3	Analyze performance parameters of different types of heat exchangers.
			CO 4	Identify and analyze the Transient heat Transfer in engineering applications.
			CO 5	Explain construction and working of different components of internal combustion engines.
			CO 6	Explain construction and working of different components of internal combustion engines.
V	MEC503	Dynamics of Machinery	CO 1	Demonstrate working Principles of different types of governors and Gyroscopic effects on the mechanical systems.
			CO 2	Illustrate basic of static and dynamic forces
			CO 3	Determine natural frequency of element/system.

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			CO 4	Determine vibration response of mechanical elements / systems
			CO 5	Design vibration isolation system for a specific application
			CO 6	Demonstrate basic concepts of balancing of forces and couples
V	MEC504	Finite Element Analysis	CO 1	Solve differential equations using weighted residual methods..
			CO 2	Develop the finite element equations to model engineering problems governed by second order differential equations.
			CO 3	Apply the basic finite element formulation techniques to solve engineering problems by using one dimensional elements
			CO 4	Apply the basic finite element formulation techniques to solve engineering problems by using two dimensional elements.
			CO 5	Apply the basic finite element formulation techniques to find natural frequency of single degree of vibration system.
			CO 6	Use commercial FEA software, to solve problems related to mechanical engineering.
V	MEDLO5011	Optimization Techniques	CO 1	Identify the types of optimization problems and apply the calculus method to single variable problems.
			CO 2	Formulate the problem as Linear Programming problem and analyse the sensitivity of a decision variable.
			CO 3	Apply various linear and non-linear techniques for problem solving in various domain.
			CO 4	Apply multi-objective decision making methods for problem in manufacturing environment and other domain.
			CO 5	Apply multi criterion decision making methods for problem in manufacturing environment and other domain
			CO 6	Apply Design of Experiments method for Optimization.

SEMESTER	COURSE	COURSE NAME	COURSE	COURSE OUTCOME

Saraswati Education Society's
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2022 REGULATION-COURSE OUTCOMES

	CODE		ID	
VI	MEC601	Machine Design	CO 1	Use design data book/standard codes to standardise the designed dimensions
			CO 2	Design Knuckle Joint, cotter joint and Screw Jack.
			CO 3	Design shaft under various conditions and couplings
			CO 4	Select bearings for a given applications from the manufacturers catalogue.
			CO 5	Select and/or design belts and flywheel for given applications
			CO 6	Design springs, clutches and brakes
VI	MEC602	Turbo Machinery	CO 1	Define various parameters associated with steam generators and turbo machines.
			CO 2	Identify various components and mountings of steam generators with their significance.
			CO 3	Identify various turbo machines and explain their significance.
			CO 4	Apply principles of thermodynamics and fluid mechanics to estimate various parameters like mass flow rate power, torque, efficiency, temperature, etc.
			CO 5	Evaluate performance of SG and Turbo machines and apply various techniques to enhance performance
			CO 6	Evaluate various phenomena related to performance like cavitation, choking, surging.
VI	MEC603	Heating, Ventilation, Air Conditioning and Refrigeration	CO 1	Illustrate the fundamental principles and applications of refrigeration and air conditioning systems
			CO 2	Identify various HVAC&R components
			CO 3	Evaluate performance of various refrigeration system
			CO 4	Estimate cooling and heating loads for an air-conditioning system.
			CO 5	Select air handling unit & design air distribution system
			CO 6	Apply the knowledge of HVAC for the sustainable development of refrigeration and air-conditioning systems.
			CO 1	Demonstrate understanding of fundamentals of industrial automation and AI.
			CO 2	Design & develop pneumatic / hydraulic circuits.

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VI	MEC604	**Automation and Artificial Intelligence**	CO 3	Design and develop electropneumatic circuits and PLC ladder logics..
			CO 4	Demonstrate understanding of robotic control systems and their applications.
			CO 5	Demonstrate understanding of various AI and machine learning technologies.
VI	MEDLO6021	**Press Tool Design**	CO 1	Demonstrate various press working operations for mass production of sheet metal parts
			CO 2	Identify press tool requirements to build concepts pertaining to design of press tools
			CO 3	Prepare working drawings and setup for economic production of sheet metal components
			CO 4	Select suitable materials for different elements of press tools
			CO 5	Illustrate the principles and blank development in bent & drawn components
			CO 6	understand safety aspects and automation in press working.