

YEAR: 2017

SEM: II

S. NO	SUBJECT NAME/ CODE	COURSE CREDIT	COURSE CODE	COURSE OUTCOMES	PROGRAMME OUTCOME (PO)												P O 1	P O 2				
					1	2	3	4	5	6	7	8	9	10	11	12						
1	HS8251 / TECHNICAL ENGLISH	4	HS8251	Read technical texts and write area-specific texts effortlessly								√										
				Listen and comprehend lectures and talks in their area of specialisation successfully.							√											
				Speak appropriately and effectively in varied formal and informal contexts.							√											
				Write reports and winning job applications.							√											
2	MA8251/ ENGINEERING MATHEMATICS – II	4	MA8251	Eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices.	√	√	√					√		√								
				Gradient, divergence and curl of a vector point function and related identities.	√	√	√					√		√								
				Evaluation of line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification.	√	√	√						√		√							
				Analytic functions, conformal mapping and complex integration.	√	√	√							√		√						
				Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.	√	√	√								√		√					
3	PH8251/ MATERIALS SCIENCE	3	PH8251	the students will have knowledge on the various phase diagrams and their applications				√					√									
				the students will acquire knowledge on Fe-Fe ₃ C phase diagram, various microstructures and alloys				√						√								
				the students will get knowledge on mechanical properties of materials and their measurement				√						√								
				the students will gain knowledge on magnetic, dielectric and superconducting properties of materials				√						√								
				the students will understand the basics of ceramics, composites and nanomaterials.				√						√								
4	BE8253 / BASIC ELECTRICAL, ELECTRONICS AND INSTRUMENTATION ENGINEERING	3	BE8253	Understand electric circuits and working principles of electrical machines				√					√									
				Understand the concepts of various electronic devices				√					√									
				Choose appropriate instruments for electrical measurement for a specific application				√						√								

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1	MA8353 / TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS	4	MA8353	Understand how to solve the given standard partial differential equations.	√	√	√						√	√								
				Solve differential equations using Fourier series analysis which plays a vital role in engineering applications.	√	√	√									√	√					
				Appreciate the physical significance of Fourier series techniques in solving one and two dimensional heat flow problems and one dimensional wave equations.	√	√	√										√	√				
				Understand the mathematical principles on transforms and partial differential equations would provide them the ability to formulate and solve some of the physical problems of engineering.	√	√	√										√	√				
				Use the effective mathematical tools for the solutions of partial differential equations by using Z transform techniques for discrete time systems.	√	√	√										√	√				
2	ME8391 / ENGINEERING THERMODYNAMICS	4	ME8391	Apply the first law of thermodynamics for simple open and closed systems under steady and unsteady conditions.	√	√	√						√	√								
				Apply second law of thermodynamics to open and closed systems and calculate entropy and availability.	√	√	√									√	√					
				Apply Rankine cycle to steam power plant and compare few cycle improvement methods	√	√	√										√	√				
				Derive simple thermodynamic relations of ideal and real gases	√	√	√										√	√				
				Calculate the properties of gas mixtures and moist air and its use in psychometric processes	√	√	√										√	√				
3	CE8394 / FLUID MECHANICS AND MACHINERY	4	CE8394	Apply mathematical knowledge to predict the properties and characteristics of a fluid.	√	√	√															
				Can analyse and calculate major and minor losses associated with pipe flow in piping networks.	√	√	√															
				Can mathematically predict the nature of physical quantities	√	√	√															
				Can critically analyse the performance of pumps	√	√	√															
				Can critically analyse the performance of turbines.	√	√	√															
4	ME8351 / MANUFACTURING TECHNOLOGY – I	3	ME8351	Explain different metal casting processes, associated defects, merits and demerits			√	√	√	√			√	√								
				Compare different metal joining processes.			√	√	√	√					√	√						
				Summarize various hot working and cold working methods of metals.			√	√	√	√					√	√						
				Explain various sheet metal making processes.			√	√	√	√					√	√						
				Distinguish various methods of manufacturing plastic components.			√	√	√	√					√	√						

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1	MA8452 / STATISTICS AND NUMERICAL METHODS	4	MA8452	Apply the concept of testing of hypothesis for small and large samples in real life problems	√	√															
				Apply the basic concepts of classifications of design of experiments in the field of agriculture	√	√															
				Appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems.	√	√															
				Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations.	√	√															
				Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications	√	√															
2	ME8492 / KINEMATICS OF MACHINERY	3	ME8492	Discuss the basics of mechanism	√	√	√		√												
				Calculate velocity and acceleration in simple mechanisms	√	√	√		√												
				Develop CAM profiles	√	√	√		√												
				Solve problems on gears and gear trains	√	√	√		√												
				Examine friction in machine elements	√	√	√		√												
3	ME8451 / MANUFACTURING TECHNOLOGY – II	3	ME8451	Explain the mechanism of material removal processes.	√		√	√	√				√	√							
				Describe the constructional and operational features of centre lathe and other special purpose lathes.	√		√	√	√				√	√							
				Describe the constructional and operational features of shaper, planner, milling, drilling, sawing and broaching machines.	√		√	√	√				√	√							
				Explain the types of grinding and other super finishing processes apart from gear manufacturing processes.	√		√	√	√				√	√							
				Summarize numerical control of machine tools and write a part program.	√		√	√	√				√	√							
4	ME8491 / ENGINEERING METALLURGY	3	ME8491	Explain alloys and phase diagram, Iron-Iron carbon diagram and steel classification.									√								
				Explain isothermal transformation, continuous cooling diagrams and different heat treatment processes.								√									
				Clarify the effect of alloying elements on ferrous and non-ferrous metals									√								
				Summarize the properties and applications of non metallic materials.									√								
				Explain the testing of mechanical properties. .									√								

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5	ME8511 / KINEMATICS AND DYNAMICS LABORATORY	2	ME8511	Explain gear parameters, kinematics of mechanisms, gyroscopic effect and working of lab equipments.	√	√	√	√													
				Determine mass moment of inertia of mechanical element, governor effort and range sensitivity, natural frequency and damping coefficient, torsional frequency, critical speeds of shafts, balancing mass of rotating and reciprocating masses, and transmissibility ratio.	√	√	√	√													
6	ME8512 / THERMAL ENGINEERING LABORATORY	2	ME8512	conduct tests on heat conduction apparatus and evaluate thermal conductivity of materials.	√	√	√														
				conduct tests on natural and forced convective heat transfer apparatus and evaluate heat transfer coefficient.	√	√	√														
				conduct tests on radiative heat transfer apparatus and evaluate Stefan Boltzmann constant and emissivity.	√	√	√														
				conduct tests to evaluate the performance of parallel/counter flow heat exchanger apparatus and reciprocating air compressor.	√	√	√														
				conduct tests to evaluate the performance of refrigeration and airconditioning test rigs.	√	√	√														
7	ME8513 / METROLOGY AND MEASUREMENTS LABORATORY	2	ME8513	Measure the gear tooth dimensions, angle using sine bar, straightness and flatness, thread parameters, temperature using thermocouple, force, displacement, torque and vibration.	√	√	√	√													
				Calibrate the vernier, micrometer and slip gauges and setting up the comparator for the inspection.																	

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5	ME8694 / HYDRAULICS AND PNEUMATICS	3	ME8694	Explain the Fluid power and operation of different types of pumps.	√	√		√				√									
				Summarize the features and functions of Hydraulic motors, actuators and Flow control valves	√	√		√				√									
				Explain the different types of Hydraulic circuits and systems	√	√		√				√									
				Explain the working of different pneumatic circuits and systems	√	√		√				√									
				Summarize the various trouble shooting methods and applications of hydraulic and pneumatic systems.	√	√		√				√									
6	ME8681 / CAD / CAM LABORATORY	2	ME8681	Draw 3D and Assembly drawing using CAD software		√	√			√											
				Demonstrate manual part programming with G and M codes using CAM		√	√			√											
7	ME8682 / DESIGN AND FABRICATION PROJECT	2	ME8682	design and Fabricate the machine element or the mechanical product.						√	√		√								
				demonstrate the working model of the machine element or the mechanical product.							√	√		√							
8	HS8581 / PROFESSIONAL COMMUNICATION	1	HS8581	Make effective presentations				√	√	√	√		√								
				Participate confidently in Group Discussions.				√	√	√	√		√								
				Attend job interviews and be successful in them.				√	√	√	√		√								
				Develop adequate Soft Skills required for the workplace				√	√	√	√		√								

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5	ME8781 / MECHATRONICS LABORATORY	2	ME8781	Demonstrate the functioning of mechatronics system with various pneumatic, hydraulic and electrical systems.	√	√	√		√				√	√					
				Demonstrate the functioning of control systems with the help of PLC and microcontrollers.	√	√	√		√				√	√					

YEAR: 2017

SEM: VIII

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1	MG8591 / PRINCIPLES OF MANAGEMENT	2	MG8591	Upon completion of the course, students will be able to have clear understanding of managerial functions like planning, organizing, staffing, leading & controlling and have same basic knowledge on international aspect of management							√			√					
2	ME8811 / PROJECT WORK	10	ME8811	On Completion of the project work students will be in a position to take up any challenging practical problems and find solution by formulating proper methodology.	√	√	√				√	√							