Dr. Vasantraodada Patil Shetkari Shikshan Mandal's																
Padmabhooshan Vasantraodada Patil Institute of Technology, Budhgaon																
Department of Mechanical Engineering																
	Course Outcomes(COs) CO_PO Manning															
SV B Tech Part I Semester III																
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Name:	Engineering Mathematics-III	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Solve higher order linear differential equation using appropriate techniques for modeling and analyzing electrical circuits.	3	3	2										2		
CO2	Solve problems related to Fourier transform, Laplace transform and applications to Communication systems and Signal processing.	3	3	2										2		
CO3	Obtain Interpolating polynomials, numerically differentiate and integrate functions, numerical solutions of differential equations using single step and multi-step iterative methods used in modern scientific computing	3	3	2										3		
CO4	Perform vector differentiation and integration, analyze the vector fields and apply to Electromagnetic fields.	3	3	2										2		
CO5	Analyze conformal mappings, transformations and perform contour integration of complex functions in the study of electrostatics and signal processing	3	3	2										2		
Course Name:	Fluid Mechanics	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Explain basic properties of fluid, fluid statics, kinematics and dynamics	3														
CO2	Identify various types of flow, flow patterns and their significance	3														
CO3	Explain concepts of flow through pipes, boundary layer theory, forces on Understanding immersed bodies and dimensionless parameters	3	2	2	2									1		
CO4	Derive various equations in fluid mechanics such as Euler's, Bernoulli's,Momentum, Continuity etc.	2	3	2	3									1	3	
CO5	Solve the problems related to properties of fluid, fluid kinematics, fluid dynamics, laminar flow, pipe flow, dimensional analysis, boundary layer theory, and forces on immersed bodies.	3	3	2			1							1	2	

Course Name:	Thermodynamics	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Define the terms like system, boundary, properties, equilibrium, work, heat, ideal gas, entropy etc. used in thermodynamics.	2	1											1		
CO2	Study different laws of thermodynamics and apply these to simple thermal systems to study energy balance.	2	2	1										1		1
CO3	Study Entropy, application and disorder		2	1												1
CO4	Study various types of processes like isothermal, adiabatic, etc. considering system with ideal gas and represent them on p-v and T-s planes.	2													2	
CO5	Represent phase diagram of pure substance (steam) on different thermodynamic planes like p-v, T-s, h-s, etc. Show various constant property lines on them.	2	2												2	
Course Name:	Materials Science and Metallurgy	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Study various crystal structures of materials	2	2	1												1
CO2	Understand mechanical properties of materials and calculations of same using appropriate equations	3	2	2	3	2									2	
CO3	Evaluate phase diagrams of various materials	2	1	2	1	1									2	
CO4	Suggest appropriate heat treatment process for a given application	1	2	2	1	2	1	2	1	1	1				2	1
CO5	Prepare samples of different materials for metallography	1	1	1	3	2		1		1					2	
CO6	Recommend appropriate NDT technique for a given application	1	1	2	2	2	1	2		1	1					1
Course Name:	Machine Drawing and CAD Lab	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Interpret the object with the help of given sectional and orthographic views.	2				2				3	2		1	1		2
CO2	Construct the curve of intersection of two solids	2	1			2				2	1		1	1		2
CO3	Draw machine element using keys, cotter, knuckle, bolted and welded joint	2				2				2	1		1	1		2
CO4	Assemble details of any given part. i. e. valve, pump, machine tool part etc.	2	2			2				2	1		1	1		2
C05	Represent tolerances and level of surface finish on production drawings	1	1			3				2	1		1	1		2

	SY B.Tech Part II Semester IV															
Course Name:	Manufacturing Processes-I	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Identify castings processes, working principles and applications and list various defects in metal casting	3	1	1				1					1			1
CO2	Understand the various metal forming processes, working principles and applications	3	2	1				1					1			1
CO3	Classify the basic joining processes and demonstrate principles of welding, brazing and soldering.	2	2	1				1					1			
CO4	Study center lathe and its operations including plain, taper turning, work holding devices and cutting tool	2		1				2					1			1
CO5	Understand milling machines and operations, cutters and indexing for gear cutting.	2		1				2							2	
CO6	Study shaping, planning and drilling, their types and related tooling's	2				1		1								1
Course Name:	Theory of Machines- I	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Define basic terminology of kinematics of mechanisms	3	3													
CO2	Classify planar mechanisms and calculate its degree of freedom	2	2											2		
CO3	Perform kinematic analysis of a given mechanism using ICR and RV methods	1	3		2										3	
CO4	Introduction of different types of lubrication system	2														
CO5	Perform kinematic analysis of slider crank mechanism using Klein's construction and analytical approach	1	3		2										3	
CO6	Perform balancing of unbalance forces in rotating masses, different types of single/multi cylinder reciprocating engines in different positions.	2	3	2	2										3	
Course Name:	Basic Human Rights	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Understand the history of human rights.						2	2	2							
CO2	Learn to respect others caste, religion, region and culture						3	3	3	2						
CO3	Be aware of their rights as Indian citizen.						3	3	3	2						
CO4	Understand the importance of groups and communities in the society.						2	2	2	3						
CO5	Realize the philosophical and cultural basis and historical perspectives of human rights.						3	3	3	2						
CO6	Make them aware of their responsibilities towards the nation.						3	3	3	3	2					

Course Name:	Strength of Materials	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	State the basic definitions of fundamental terms such as axial load, eccentric load, stress, strain, E, μ , principle stresses, etc	3														3
CO2	Analyze the stresses and strain energy in different load cases	2	3	2	2									3	3	
CO3	Design the columns based on deflection	2	3	3	2								1	3	3	
CO4	Design a beam based on bending and shafts based on torsion	2	3	3	2								1	3	3	
CO5	Analyze given beam for calculations of SF and BM	2	3	2	2								1	3	3	
CO6	Calculate slope and deflection at a point on cantilever /simply supported beam using double integration, Macaulay's, Area- moment and superposition methods	2	3	2	2								1	3	3	
Course Name:	Fluid Machinery	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	Understand and apply momentum equation	3	2	1											2	
CO2	Understand and explain Hydrodynamic Machines	3		3				2								
CO3	Explain difference between impulse and reaction turbines	3	2													
CO4	Find efficiencies, draw velocity triangles	3	3	2											2	
CO5	Explain governing mechanisms for hydraulic turbines			3												
CO6	Explain working of various types of pumps, draw velocity diagrams, do simple Calculations	3	3	3	1	1										
CO7	Design simple pumping systems	3	3		3								2	3	2	