COURSE OUTCOMES - 2022 SCHEME (PG)

1st SEMESTER

Subject:	Mathematical Methods In Engineering		
Subject Code:	22MMD11	NBA Code:	MMD101
CO1	Model and find the solutions for First Order and Second Order ODEs		
CO2	Solve the system of Linear Equations using Gauss Elimination and Cramer's rule		
CO3	Apply the concepts of complex number theory		
CO4	Generate and find solutions to Functional.		

Subject:	Computer Simulation Of Machines		
Subject Code:	22MMD12	NBA Code:	MMD102
CO1	Apply path curvature characteristics in analysis of mechanisms.		
CO2	Apply analytical and synthesis techniques in design of mechanisms.		
CO3	Apply forward and reverse kinematic analysis techniques in performance evaluation of manipulators.		

Subject:	Vibration And Condition Monitoring		
Subject Code:	22MMD13	NBA Code:	MMD103
CO1	Discuss the basics of vibrations and determine the equations of motion for free & forced vibrations of single degree of freedom systems and to find their solution.		
CO2	Determine the response of a single degree of freedom system subjected to various types of input forces.		
CO3	Students should be able to design, synthesize and analyse a physical engineering systems using modern tools and techniques		
CO4	Students should be able to conduct analytical and experimental investigations on Industrial and societal problems to provide sustainable solutions.		

Subject:	Signal Analysis And Condition Monitoring		
Subject Code:	22MMD14	NBA Code:	MMD104
CO1	Discuss different types of signals generated		
CO2	Apply the various techniques for signal conditioning.		
CO3	Apply various condition monitoring techniques.		

Subject:	Advanced Mechanics Of Solids		
Subject Code:	22MMD15	NBA Code:	MMD105
CO1	Apply the theory of elasticity including strain/displacement and Hooke's Law relationships		
CO2	Solve for stresses and deflection beam under unsymmetrical loading		
CO3	Solve torsion problems in bars and thin walled methods.		

Subject:	Research Methodology And IPR		
Subject Code:	22RMI16	NBA Code:	MMD106
CO1	Discuss research methodology and the technique of defining a research problem		
CO2	Explain the functions of the literature review in research, carrying out a literature search, developing theoretical and conceptual frameworks and writing a review		
CO3	Explain various research designs, sampling designs, measurement and scaling techniques and also different methods of data collections.		
CO4	Explain several parametric tests of hypotheses, Chi-square test, art of interpretation and writing research reports		
CO5	Discuss various forms of the intellectual property, its relevance and business impact in the changing global business environment and leading		

Subject:	Numerical Simulations Laboratory		
Subject Code:	22MMDL17	NBA Code:	MMD107
CO1	Model simple to complicated kinematic systems independently		
CO2	Analyse and interpret the commonly occurring kinematic systems in a commercial software		
CO3	Verify the results of simulations of a commercial software with Analytical Methods		

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2nd SEMESTER

Subject:	Advanced Machine Design		
Subject Code:	22MMD21	NBA Code:	MMD108
CO1	Define basic philosophies used in Machine Design		
CO2	Design and Analyse any geometrically well-defined component subjected to static loading		

Subject:	Advanced Finite Element Methods & Application		
Subject Code:	22MMD22	NBA Code:	MMD109
CO1	Understand the Basis of formulation of Finite Element Methods		
CO2	Formulate the complete FE Formulation for 1D, 2D, and 3D Elements		
CO3	Evaluate various boundary conditions in the FE Application		
CO4	Write a computer program to analyse a simple Truss structure		

Subject:	Fracture Mechanics		
Subject Code:	22MMD232	NBA Code:	MMD110
CO1	Correctly predict Fatigue life of metal components using Stress and Strain life Methods.		
CO2	Analyse the situation to apply appropriate fatigue failure method		
CO3	Identify and describe the basic fatigue mechanisms		
CO4	Demonstrate the application of the methods for fatigue life of spot Weld		

Subject:	Mechatronics System Design		
Subject Code:	22MMD241	NBA Code:	MMD111
CO1	Determine stress distribution along a component under different loading conditions.		
CO2	Solve real time problems subjected under bending.		
CO3	Compute stresses developed in a member subjected to Torque		
CO4	Apply some of basic energy methods to solve elasticity problems		

Subject:	Mini Project With Seminar		
Subject Code:	22MMD25	NBA Code:	MMD112
CO1	Present the mini-project and be able to defend it, Make links across different areas of knowledge and to generate, develop and evaluate ideas and information to apply these skills to the project task.		
CO2	Habituated to critical thinking and use problem solving skills.		
CO3	Communicate effectively and to present ideas clearly and coherently in both the written and oral forms.		
CO4	Work in a team to achieve common goal.		
CO5	Learn on their own, reflect on their learning and take appropriate actions to improve it.		

Subject:	**Finite Element Methods Laboratory**		
Subject Code:	**22MMDL26**	**NBA Code:**	**MMD113**
CO1	Run a Linear Static, Dynamic and Non- Linear Analysis for simple components		
CO2	Find the stress and displacement in a commercial software		
CO3	Demonstrate the validity of FE results against a set standard.		