Maulana Azad National Institute of Technology, Bhopal – 462003
Mechanical Engineering Department

M Tech in Stress and Vibration Analysis

SCHEME OF STUDY (January 2021)

First Semester:

Course No.	Subjects	Scheme of studies period per week			Total Credits
		L	T	P	
MTH 101 SV	Advanced Engineering Mathematics	3	-	-	3
SV 102	Theory of Elasticity	3	-	-	3
SV 103	Theory of Vibrations-1	3	-	-	3
SV 104	Finite Element Methods	3	-	-	3
	Elective-1 (A)	3	-	-	3
	Elective -2 (B)	3	-	-	3
SV 105	Vibration Analysis Lab.	-	-	2	1
SV 106	Seminar-1	-	-	2	1
SV 107	Communications Skill NPTEL/ MOOC/ Humanities Deptt.	2	-	-	2
Total Hours: 30 Total Credits: 22		Total Semester Credits			22

Second Semester:

Course No.	Subjects	Scheme of studies period per week			Total Credits
		L	T	P	
SV 201	Experimental Stress Analysis	3	-	-	3
SV 202	Theory of Plasticity	3	-	-	3
SV 203	Theory of Vibrations-II	3	-	-	3
	Elective -3 (A)	3	-	-	3
	Elective- 4 (A)	3	-	-	3
	Elective -5 (C)	3	-	-	3
SV 204	Experimental Stress Analysis Lab.	-	-	2	1
SV 205	Research Methodology, Technical Report and Paper Writing	-	2	-	2
SV 206	Seminar-2	-	-	2	1
Total Hours: 30 Total Credits: 44		Total Semester Credits			22

Third Semester:

Course No.	Subjects	Scheme of studies period per week			Total Credits
		L	T	P	
SV 301	Project Phase-I	-	-	32	16
Total Hours: 32 Total Credits: 60		Total Semester Credits			16

Fourth Semester:

Course No.	Subjects	Scheme of studiesperiod per week			Total Credits
		L	T	P	
SV 401	Project Phase-II	-	-	40	20
Total Hours: 40 Total Credits: 80		Total Semester Credits			20

List of Electives A		List of Electives B	
SV501	Advanced Computational Methods	ID104	Advanced Computer Graphics
SV502	Vibrations of Plates	ID102	Accelerated Product Design & Development
SV503	Non-linear and Random Vibrations	IT102	Fundamentals of Tribology
SV504	Stress and Vibration Analysis in Turbo-machinery	ID506	Advanced Dynamics of Machine
SV505	Rotor Dynamics and Balancing	ID503	Detailed Design of Rotating Machines
SV506	Condition Monitoring	TH501	Renewable Energy
SV507	Advanced Optimization Techniques	AM507	Product Design & Material Selection
SV508	Analysis of Composite Structure	ID511	Additive Manufacturing
SV509	Mechanics of Composite Materials	IT505	Industrial Maintenance & Management
SV510	Non-linear Finite Element Methods	**List of Electives C**	
SV511	Engineering Fracture Mechanics	EN202	Solid Waste Management
SV512	Mechanics of Forming Process	GE203	Reinforced Soil Structures
SV513	Introduction of Crystal Elasticity and Crystal Plasticity	GI201	Basic Concepts of GIS
SV514	Surface Engineering	HY201	Characteristics of Hydraulic Machines
SV515	Theory of Elastic Stability	ST203	Theory of Plates & Shells
SV516	Computational Plasticity and Micromechanics	TR201	Highway Construction & Maintenance
SV517	Product Design & Development	WR203	Ground Water Engineering
		PS201	Modern Control Systems
		ED202	Advanced Control Systems
		VE202	VLSI Technology
		DC203	Digital Image Processing
		AC203	Optimization Techniques
		AI202	Deep Learning
		CN203	Graph Theory & Network Algorithm
		IS201	Applied Cryptography
		MS202	Deformation Behavior of Materials
		CH203	Industrial Safety & Hazard Management
		HS1204	Housing Finance
		UP1203	Infrastructure Planning
		NT201	Nano Structures Characterization Techniques
		BI203	Optimization Techniques & Graph
		CSB201	Mathematical Modeling & Simulation of Biological Systems
		RE202	Solar Energy Systems
		ES202	Energy Management in Buildings
		BIO201	Cheminformatics & Drug Designing

Group A: Program Electives.

Group B: Departmental Electives.

Group C: Open Electives.
{It may also be opted as NPTEL Course after approval from Chairman Senate}