

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

M Tech in Stress and Vibration Analysis

SCHEME OF STUDY (wef July 2021)

First Semester:

Course No.	Subjects	Scheme of studies period per week			Total Credits
		L	T	P	
MTH 515	Advanced Engineering Mathematics	3	-	-	3
SV 511	Theory of Elasticity	3	-	-	3
SV 512	Theory of Vibrations-1	3	-	-	3
SV 513	Finite Element Methods	3	-	-	3
HUM 511	Communications Skills	2	-	-	2
	Elective-1 (A)	3	-	-	3
	Elective -2 (B)	3	-	-	3
SV 514	Vibration Analysis Lab.	-	-	2	1
SV 515	Seminar-1	-	-	2	1
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 521	Experimental Stress Analysis	3	-	-	3
SV 522	Theory of Plasticity	3	-	-	3
SV 523	Theory of Vibrations-II	3	-	-	3
	Elective -3 (A)	3	-	-	3
	Elective- 4 (A)	3	-	-	3
	Elective -5 (C)	3	-	-	3
ME 524	Research Methodology	1	1	-	2
SV 525	Experimental Stress Analysis Lab.	-	-	2	1
SV 526	Seminar-2	-	-	2	1
Total Hours: 30 Total Credits: 44		Total Semester Credits			22

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Third Semester:

Course No.	Subjects	Scheme of studies period per week			Total Credits
		L	T	P	
SV 611	Dissertation Phase - I	-	-	32	16
Total Hours: 32 Total Credits: 60		Total Semester Credits			16

Fourth Semester:

Course No.	Subjects	Scheme of studies period per week			Total Credits
		L	T	P	
SV 621	Dissertation Phase - II	-	-	40	20
Total Hours: 40 Total Credits: 80		Total Semester Credits			20

Mechanical Engineering Department**M Tech in Stress and Vibration Analysis**

List of Program Electives A		List of Open Electives C	
SV 551	Advanced Computational Methods	ARP - 581	Introduction to Urban Planning
SV 552	Vibrations of Plates	BSE – 581	Bioprocess Engineering
SV 553	Non-linear and Random Vibrations	BSE – 582	Biophysics Tools and Techniques
SV 554	Stress and Vibration Analysis in Turbo-machinery	CHE – 581	Analytical Techniques
SV 555	Rotor Dynamics and Balancing	CHE – 582	Green Technology & Processes
SV 556	Condition Monitoring	CE – 581	Solid Waste Management
SV 557	Advanced Optimization Techniques	CE – 582	Basic Concept of GIS
SV 558	Analysis of Composite Structure	CE – 583	Road Safety
SV 559	Mechanics of Composite Materials	CSE – 581	Machine Learning
SV 560	Non-linear Finite Element Methods	CSE – 582	Advanced Data Structures and Algorithms
SV 561	Engineering Fracture Mechanics	PHY – 581	Nanotechnology and Nanoscience
SV 562	Mechanics of Forming Process	EE – 581	Electric Machines & Applications
SV 563	Introduction of Crystal Elasticity and Crystal Plasticity	EE – 582	Control and Instrumentation
SV 564	Surface Engineering	ECE – 581	Introduction to Fuzzy Logic
SV 565	Theory of Elastic Stability	ECE – 582	Neural Networks and its Applications
SV 566	Computational Plasticity and Micromechanics	EC - 581	Energy Resource Technologies
SV 567	Product Design & Development	HUM – 581	Intellectual Property Rights for Engineers
		HUM – 582	Applied Psychology: Human Centered Design and Engineering
List of Departmental Electives B		MTH – 581	Advanced Operations Research
ID 512	Accelerated Product Design & Development	MTH – 582	Computing Technologies
ID 514	Advanced Computer Graphics	MME – 581	Advanced Instrumentation Methods for Material Analysis
ID 553	Detailed Design of Rotating Machines	MME – 582	Smart Materials and their Application
ID 556	Advanced Dynamics of Machine	MBA-581	Engineering Startup Management
ID 561	Additive Manufacturing		
TH 551	Renewable Energy		
AM 557	Product Design & Material Selection		