## GATEWAY INSTITUTE OF ENGINEERING AND TECHNOLOGY, SONIPAT LECTURE PLAN

Name of the Faculty : Mr. Jeetendra Kumar Discipline : Mechanical Engineering Semester : 8th Subject : FLEXIBLE MANUFACTURING SYSTEM (ME 438B) Lesson Plan Duration : 15 Weeks ( January 2018 to April 2018) Work Load (Lectures) per week in hours: Lectures – 03, Tutorial – 01

		Theory
Week	Lecture Day	Topic (including assignment/ test)
	1	Automation and types, reasons for automation
1st	2	Basic elements of an Automated System: Sensors, Actuators, Analog-to-Digital and Digital-to-Analog
	3	Definition of Manufacturing Flexibility, Need of Manufacturing flexibility, Types of Manufacturing
	4	Classification of Manufacturing systems on Flexibility types, Resources and Processes to increase
2nd	5	GT and its benefits
	6	Parts classification and coding systems
	7	GT based Machine cell design through Cluster Analysis and Hollier's Algorithm
3rd	8	Numerical problems
	9	GT and its benefits
	10	Parts classification and coding systems
4th	11	Fundamentals of NC Technology and advantages in Manufacturing
	12	NC Machines and types
	13	Computer Numerical Control
5th	14	Distributed Numerical Control
	15	brief introduction of NC Part Programming
	16	Components of an FMS, FMS work stations
6th	17	Material handling and storage system: Functions of material handling system
	18	FMS layout configurations
	19	Computer control system: Computer function
7th	20	FMS data file, system reports
	21	Planning the FMS
	22	FMS applications and benefits
8th	23	Common robot configurations, Joints and links
	24	work volume
	25	types of robot control
9th	26	accuracy and repeatability, interlocks, advantages and disadvantages
	27	Brief review of Robot programming and languages: Motion programming, simulation
	28	offline programming
10th	29	Automated flow lines, methods of work part transport
	30	Transfer Mechanisms, buffer storage
	31	automation for machining operations
11th	32	part feeding devices
	33	Brief review of Automated assembly systems and types
	34	Elements of CIM
$12^{th}$	35	Brief Review of Computer aided process Planning
	36	Computer Integrated Production Management Systems,
	37	MRP
13th	38	Capacity Planning,
	39	MRPII
	40	Shop floor Control systems
14th	41	Computer Process Monitoring
	42	Computer aided quality control,
15th	43	Adaptive Control of Manufacturing
1500	44	Class test
	45	Class test

Name of Faculty: Mr. Vivek Garg

Discipline:- B. Tech. (ME) Semester: 8th Subjects: Computer Aided Design (ME 402 B) Lession Plan Duration: 15 Weeks (from January,2018 to April,2018 Workload(Lecture/Practical) per week (in hours) : Lecture-04, Practicals -02 hours

Week	Theory		Pra	Practical	
week	Lecture Day	Topic (including assignment/test)	Practical D	Topic	
	1st	INTRODUCTION:- Introduction to CAD/ CAM, Historical developments		Basic of	
1st	2nd	Assignment:-Industrial look at CAD/ CAM	1st	Autocad	
	3rd	Basics of geometric and solid modelling, explicit, Implicit		like	
	4th	intrinsic and parametric equations coordinate systems.		Practice	
2nd	5th	2-D TRANSFORMATIONS: Introduction, transformation of points and line	2nd	on Draw	
	6th	2-D translation and its numerical		toolbar	
	7th	2-D rotation and its numerical		Practice	
3rd	8th	2-D scaling and its numerical	3rd	on	
Jiu	9th	Numerical on combined transformation	510	isometri	
	10th	Numerical on homogeneous coordinates		Practice	
4th	11th	Numerical on homogeneous coordinates	4th	on	
401	12th	Numerical on homogeneous coordinates contt.	401	Creating	
	-	ů.		Practice	
	13th	3- D Transformation:- 3-D scaling and its numerical		on	
5th	14th	3-D scaling and its numerical	5th	Providir	
	15th	3-D scaling and its numerical		D:	
	16th	3-D scaling and its numerical		3	
6th	17th	combined transformations numerical	6th	Dimensi nal	
	18th	combined transformations contt.			
	19th	Assignment:-reconstruction of 3-D objects.		3D Solic	
7th	20th	orthographic and perspective projections	7th	Models contt.	
	21st	CURVES:- Algebraic and geometric forms			
	22nd	tangents and normal, blending functions		3D Solid Models contt.	
8th	23rd	re- parametrization,straight lines, conics,	8th		
ľ	24th	cubic splines			
	25th	Numerical on Cubic spline			
9th	26th	Derivation of Bezier curves	9th		
	27th	Numerical on Bezier spline			
	28th	Numerical on Bezier spline			
	29th	B-spline curves.	10th		
1000	30th	Numerical on B-spline curve	1000		
	31st	Numerical on B-spline curve			
11th	32nd	SURFACES:- Algebraic and geometric forms, tangents and normal	11th		
1 Iui	33rd	blending functions, tabulated cylinder	1101		
	34th	reparametrization, sixteen point form, four curve form			
12th	35th	plane surface, ruled surface Surface of revolution,	12th		
1201	36th		1201		
		Assignment:-Sweep representation			
12.3	37th	bi-cubic surface			
13th	38th	bezier surface	13th		
	39th	B-spline Surface.			
	40th	SOLIDS:- Solid models and representation scheme, boundary representation			
14th	41st	Assignment:-constructive Solid geometry	14th		
	42nd	cell decomposition, spatial occupancy Enumeration			
	43rd	FINITE ELEMENT MODELLING- Type of FE analysis; Degree of freedom			
15th	44th	Influence coefficient, Element and stiffness equations	15th		
	45th	Assignment:- General structure of FE analysis procedure.			

Name of Faculty: Mr. Nikhil Rohilla Discipline:- B. Tech. (ME) Semester: 8th Subjects: Modern Manufacturing Process (ME 446B) Lession Plan Duration: 15 Weeks (from January,2018 to April,2018 Workload(Lecture/Practical) per week (in hours) : Lecture-04, Practicals -02 hours

Week	Theory		
	Lecture Day Topic (including assignment/test)		

	1st	Limitations of conventional manufacturing processes
1st	2nd	Need of unconventional manufacturing processes
F	3rd	Classification of modern manufacturing processes
	4th	Future possibilities
2nd	5th	Introduction, basic principle of USM
	6th	Elements of process, tool feed mechanism
3rd	7th	Cutting tool system design
	8th	Effect of parameters on MRR
	9th	Economic consideration
	10th	Applications and limitations, advantages and disadvantages
4th	10th	Basic techniques of chemical machining
	12th	Mechanism of metal removal process variables, advantages and applications
	12th	Electrochemical machining, principle of ECM process, ECM process details
5th	13th	Chemical reactions in ECM, tool work gap
500	15th	Process variables and characteristics of ECM
	15th	Advantages, disadvantages and applications of ECM
6th	17th	Electrochemical grinding
oui	17th	Material removal, surface finish
	19th	Accuracy, advantages, applications
F	20th	
7th	2011	Process description, features of AJM, parameters in AJM
	21st	Metal removal rate (MRR) in AJM, advantages, limitations and practical applications of AJM
	22nd	Water jet machining – jet cutting equipment, process details
8th	23rd	Electric discharge machining (EDM) or spark erosion machining process, practical aspect
our	2510	of spark erosion machining
	24th	Mechanism of metal removal, spark erosion generators, electrode feed control
	25th	Dielectric fluids, flushing, electrodes for spark erosion, selection of electrode material, too
9th	250	electrode design
) th	26th	Surface finish, machining accuracy, machine tool selection, applications
	27th	Wire cut EDM, advantages and disadvantages of spark erosion machining
	28th	Introduction, lasing process
10th	29th	Laser machining system, thermal effect on workpiece
	30th	Calculation of MRR
	31st	Description of laser drilling machine
11th	32nd	Cutting speed and accuracy of cut
	33rd	Advantages and limitations
	34th	Introduction, non-thermal generation of plasma
12th	35th	Types of plasma arc, the stabilized arc
Γ	36th	Mechanism of plasma torch, mechanism of metal removal
	37th	PAM parameters, equipments for DC
13th	38th	Plasma torch unit, safety precautions
	39th	Economics, other applications of plasma jets
	40th	Description of the process
	41st	Need for high vacuum in EBM
14th		
14th	42nd	Process parameters in EBM
14th	42nd 43rd	
14th 15th		Advantages and disadvantages of EBM Electron beam welding

Name of faculty:- Mr. Vikram Kapoor (Theory) Discipline:-Mechanical Semester:- 8th Subject:-Mechanical Vibration (ME404B) Lesson Plan Duration:-15 week (January 2018 to April 2018) Work Load (Lecture/Practical) per week (in hours):- Lectures -03, Tutorial – 01

Week	]	Theory
	Lecture (Da	Topic (including assignment /test)
1 <sup>st</sup>	1 <sup>st</sup>	Classifications of Vibrations
	$2^{nd}$	Free and Forced
	3 <sup>rd</sup>	Undamped and Damped, Linear and Non-linear

2 <sup>nd</sup> Harmonic Motion, numerical        3 <sup>rd</sup> Vector and Complex Number Representations, Assignment: Numerical, Classifications of Vibrations        3 <sup>rd</sup> 1 <sup>rd</sup> Governing equations using D'Alemberts Principal        2 <sup>rd1</sup> Concept of viscous damping.        3 <sup>rd4</sup> Response of Free Damped Vibrations (Under Damping, Critical and Over Damping).        4 <sup>rd</sup> Logarithmic Decrement        2 <sup>rd1</sup> Determination of Structural damping. Determination of natural frequency of vibratory systems using Energy Method        3 <sup>rd1</sup> Equivalent systems      Assignment: Numerical, Under Damping, Critical and Over Damping        4 <sup>rd1</sup> Forced vibrations      Concerning equation under harmonic excitation        3 <sup>rd1</sup> Forced vibrations      Assignment: Submirication factor        4 <sup>rd1</sup> Active and passive vibration isolation      Transmissibility        3 <sup>rd1</sup> Rotating and Reciprocating unbalance, Critical Speeds      Transmissibility        3 <sup>rd1</sup> Rotating and Reciprocating unbalance, Critical Speeds      Transmissibility        3 <sup>rd1</sup> Rosponse to Step Excitations      Step Excitation        3 <sup>rd1</sup> Rosponse to Step Excitations      Step Excitation        3 <sup>rd1</sup> Principle Condinates      Step Ex	2 <sup>nd</sup>	1 <sup>st</sup>	Deterministic and Random	
3 <sup>rd</sup> Vector and Complex Number Representations, Assignment: Numerical , Classifications of Vibrations      3 <sup>rd</sup> 1 <sup>rd</sup> Governing equations using D'Alemberts Principal      2 <sup>rd</sup> Concept of viscous damping    Encept of viscous damping      3 <sup>rd</sup> Response of Free Damped Vibrations (Under Damping, Critical and Over Damping)      4 <sup>rd</sup> I deguivations of Streuchard damping. Determination of natural frequency of vibratory systems using Energy Method      3 <sup>rd</sup> Equivation systems    Assignment: Numerical, Under Damping, Critical and Over Damping      4 <sup>rd</sup> I deguivation systems    Assignment: Numerical, Under Damping, Critical and Over Damping      4 <sup>rd</sup> Forced vibrations    diagram, Magnification factor      3 <sup>rd</sup> Response oving techniques of calculus and phasor    diagram, Magnification factor      3 <sup>rd</sup> Active and passive vibration isolation    Transmisbility      3 <sup>rd</sup> Rotating and Reciprocating unbalance, Critical Speeds    Transmisbility      3 <sup>rd</sup> Response to Step Excitations    diagram. Numerical      3 <sup>rd</sup> Assignment: Numerical    diagram.    diagram.      3 <sup>rd</sup> Response to Step Excitations    diagram.    diagram.      3 <sup>rd</sup> Response to Step Excitations    diagram.    diagram. <td>4</td> <td></td> <td></td> <td></td>	4			
Vibrations      Vibrations        2 <sup>rd</sup> Concept of viscous damping        3 <sup>rd</sup> 2 <sup>rd</sup> Concept of viscous damping        3 <sup>rd</sup> Logarithmic Decrement        2 <sup>rd</sup> Determination of Structural damping. Determination of natural frequency of vibratory systems using Energy Method        3 <sup>rd</sup> Equivalent systems        Assignment: Numerical, Under Damping, Critical and Over Damping      Assignment: Numerical, Under Damping, Critical and Over Damping        4 <sup>rd</sup> Forced vibrations      Calculus and phasor        diagram, Magnification factor      Governing equation under harmonic excitation        7 <sup>rd</sup> Response using techniques of calculus and phasor        diagram, Magnification factor      Governing and Reciprocating unbalance, Critical Speeds        n      1 <sup>rd</sup> Active and passive vibration isolation        7 <sup>rd</sup> Response to Step Excitations      7 <sup>rd</sup> 2 <sup>rd</sup> Impulse Excitations      7 <sup>rd</sup> 3 <sup>rd</sup> Response to Step Excitations      7 <sup>rd</sup> 3 <sup>rd</sup> Response to Step Excitations      7 <sup>rd</sup> 3 <sup>rd</sup> Response to Step Excitations      7 <sup>rd</sup> 3 <sup>rd</sup> Coordinate Coupling,      7 <sup>rd</sup>	-			
2 <sup>nd</sup> Concept of viscous damping      3 <sup>nd</sup> Response of Free Damped Vibrations (Under Damping, Critical and Over Damping)      4 <sup>nd</sup> 1 <sup>nd</sup> Logarithmic Decrement      2 <sup>nd</sup> Determination of Structural damping, Determination of natural frequency of vibratory systems using Energy Method      3 <sup>nd</sup> Equivalent systems    Assignment: Numerical, Under Damping, Critical and Over Damping      4 <sup>nd</sup> 1 <sup>nd</sup> Forced vibrations    Coverning equation under harmonic excitation      3 <sup>nd</sup> Response using techniques of calculus and phasor    diagram, Magnification factor      an    1 <sup>nd</sup> Forced and Motion    Transmissibility      3 <sup>nd</sup> Rotating and Reciprocating unbalance, Critical Speeds    n      a    1 <sup>nd</sup> Rotating and Reciprocating unbalance, Critical Speeds      an    1 <sup>nd</sup> Rotating of Rotating Shafts Vibration isolation materials      2 <sup>nd</sup> Impulse Excitation    3 <sup>nd</sup> 3 <sup>nd</sup> Response to Step Excitations    3 <sup>nd</sup> 3 <sup>nd</sup> Coordinate Coupling,    1 <sup>nd</sup> 2 <sup>nd</sup> Impulse Excitations in Terms of Initial Conditions    3 <sup>nd</sup> 3 <sup>nd</sup> Coordinate Coupling,    1 <sup>nd</sup> 2 <sup>nd</sup> Freee Vibrations in Terms of I		3		
grid      Response of Free Damped Vibrations (Under Damping, Critical and Over Damping)        q <sup>th</sup> 1 <sup>st</sup> Logarithmic Decrement        2 <sup>std</sup> Determination of Structural damping, Determination of natural frequency of vibratory systems using Energy Method        3 <sup>rd</sup> Equivalent systems      Assignment: Numerical, Under Damping, Critical and Over Damping        inf      Forced Vibrations      Forced Vibrations        2 <sup>rdd</sup> Governing equation under harmonic excitation        3 <sup>rd</sup> Response using techniques of calculus and phasor        diagram, Magnification factor      Transmissibility        3 <sup>rdd</sup> Active and passive vibration isolation        2 <sup>rdd</sup> Impulse Excitation        3 <sup>rdd</sup> Response using techniques of calculus and phasor        1 <sup>rdt</sup> Active and passive vibration isolation        2 <sup>rdd</sup> Impulse Excitation        3 <sup>rdt</sup> Rotaring and Reciprocating unbalance, Critical Speeds        1 <sup>rdt</sup> Matring of Rotating Shafts Vibration isolation materials        2 <sup>rdd</sup> Impulse Excitations        2 <sup>rdd</sup> Normal Mode Vibrations        3 <sup>rdt</sup> Coordinate Coupling,        9 <sup>rdt</sup> 1 <sup>rdt</sup> Principal Coordinates	3 <sup>rd</sup>	1 <sup>st</sup>	Governing equations using D'Alemberts Principal	
grid      Response of Free Damped Vibrations (Under Damping, Critical and Over Damping)        q <sup>th</sup> 1 <sup>st</sup> Logarithmic Decrement        2 <sup>std</sup> Determination of Structural damping, Determination of natural frequency of vibratory systems using Energy Method        3 <sup>rd</sup> Equivalent systems      Assignment: Numerical, Under Damping, Critical and Over Damping        inf      Forced Vibrations      Forced Vibrations        2 <sup>rdd</sup> Governing equation under harmonic excitation        3 <sup>rd</sup> Response using techniques of calculus and phasor        diagram, Magnification factor      Transmissibility        3 <sup>rdd</sup> Active and passive vibration isolation        2 <sup>rdd</sup> Impulse Excitation        3 <sup>rdd</sup> Response using techniques of calculus and phasor        1 <sup>rdt</sup> Active and passive vibration isolation        2 <sup>rdd</sup> Impulse Excitation        3 <sup>rdt</sup> Rotaring and Reciprocating unbalance, Critical Speeds        1 <sup>rdt</sup> Matring of Rotating Shafts Vibration isolation materials        2 <sup>rdd</sup> Impulse Excitations        2 <sup>rdd</sup> Normal Mode Vibrations        3 <sup>rdt</sup> Coordinate Coupling,        9 <sup>rdt</sup> 1 <sup>rdt</sup> Principal Coordinates	, in the second se	2 <sup>nd</sup>		
4 <sup>th</sup> 1 <sup>st</sup> Logarithmic Decrement        2 <sup>rd1</sup> Determination of Structural damping. Determination of natural frequency of vibratory systems using Equivalent systems      Energy Method        3 <sup>rd1</sup> Equivalent systems      Assignment: Numerical, Under Damping, Critical and Over Damping        1 <sup>rd1</sup> Forced vibrations      Interview of the systems        3 <sup>rd1</sup> Response using techniques of calculus and phasor diagram, Magnification factor      Interview of the systems        n      1 <sup>rd1</sup> Active and passive vibration isolation        1 <sup>rd1</sup> Active and passive vibration isolation        1 <sup>rd1</sup> Rotating and Reciprocating unbalance, Critical Speeds        n      1 <sup>rd1</sup> Rotating and Reciprocating unbalance, Critical Speeds        3 <sup>rd1</sup> Response to Step Excitations        3 <sup>rd1</sup>	-		· · · ·	
2 <sup>nd</sup> Determination of Structural damping. Determination of natural frequency of vibratory systems using Energy Method        3 <sup>nd</sup> Equivalent systems        Assignment: Numerical, Under Damping. Critical and Over Damping        3 <sup>nd</sup> 1 <sup>st</sup> 2 <sup>nd</sup> Governing equation under harmonic excitation        3 <sup>nd</sup> Response using techniques of calculus and phasor        diagram, Magnification factor      diagram, Magnification factor        1 <sup>nd</sup> Active and passive vibration isolation        7 <sup>nd</sup> Forced and Motion        Transmissibility      a <sup>nd</sup> 3 <sup>nd</sup> Rotating and Reciprocating unbalance, Critical Speeds        1 <sup>nd</sup> Matting and Reciprocating unbalance, Critical Speeds        1 <sup>nd</sup> Matting and Reciprocating unbalance, Critical Speeds        2 <sup>nd</sup> Inpulse Excitation        2 <sup>nd</sup> Assignment: Numerical        2 <sup>nd</sup> Normal Mode Vibrations        3 <sup>nd</sup> Coordinate Coupling,        9 <sup>nd</sup> 1 <sup>st</sup> 1 <sup>st</sup> Principal Coordinates        2 <sup>nd</sup> Force Harmonic Vibrations, Simple Vibration Absorber        1 <sup>st</sup> I <sup>st</sup> 1 <sup>st</sup> Natural Frequencies and Norm	4 <sup>th</sup>			
3 <sup>rd</sup> Equivalent systems Assignment: Numerical, Under Damping, Critical and Over Damping        1 <sup>st</sup> Forced tribrations        2 <sup>nd</sup> Governing equation under harmonic excitation        3 <sup>rd</sup> Response using techniques of calculus and phasor diagram, Magnification factor        n      2 <sup>nd</sup> 2 <sup>nd</sup> Forced and Motion        Transmissibility      Transmissibility        3 <sup>rd</sup> Response to Step Excitation        2 <sup>nd</sup> Impuse Excitation        3 <sup>rd</sup> Response to Step Excitations        3 <sup>rd</sup> Response to Step Excitations        3 <sup>rd</sup> Coordinates        3 <sup>rd</sup> Coordinates        3 <sup>rd</sup> Coordinates        3 <sup>rd</sup> Forced Harmonic Vibrations, Simple Vibration Absorber        3 <sup>rd</sup> Response true problems        3 <sup>rd</sup> Close coupled system and far coupled systems using influence coefficient        3 <sup>rd</sup> Natural Frequencies and Normal Modes, Orthogonality of Normal Modes        2 <sup>nd</sup> Interview of Matrix Iteration, Introduction to vibration of continuous system with the help of lateral vibration Measurement        2 <sup>nd</sup> Mucher of Assignment: Numerical, Dunkerley's method.        3 <sup>rd</sup> Assignment	· ·		Determination of Structural damping. Determination of natural frequency of vibratory systems using	g Energy Method
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ph    14    Forced vibrations      2 <sup>nd</sup> Governing equation under harmonic excitation      3 <sup>rd</sup> Response using techniques of calculus and phasor      diagram, Magnification factor    diagram, Magnification factor      n    1 <sup>eff</sup> Active and passive vibration isolation      2 <sup>rds</sup> Forced and Motion    Transmissibility      3 <sup>rdf</sup> Rotating and Reciprocating unbalance, Critical Speeds    main statistical speeds      1 <sup>rdf</sup> Wirling of Rotating Shafts Vibration isolation materials    main speed sp		5		
2 <sup>nd</sup> Governing equation under harmonic excitation      3 <sup>rd</sup> Response using techniques of calculus and phasor diagram. Magnification factor      n    1 <sup>rd</sup> Active and passive vibration isolation      2 <sup>rd</sup> Forced and Motion Transmissibility      3 <sup>rd</sup> Rotating and Reciprocating unbalance, Critical Speeds      n    1 <sup>rd</sup> Whirling of Rotating Shafts Vibration isolation materials      2 <sup>rd</sup> Impulse Excitation      3 <sup>rd</sup> Response to Step Excitations      3 <sup>rd</sup> Response to Step Excitations      3 <sup>rd</sup> Coordinate Coupling,      3 <sup>rd</sup> Ocordinate Coupling,      3 <sup>rd</sup> Free Vibrations in Terms of Initial Conditions      3 <sup>rd</sup> Foreed Harmonic Vibrations, Simple Vibration Absorber      2 <sup>rdd</sup> Close coupled system and far coupled systems using influence coefficient      3 <sup>rd</sup> Close coupled system and far coupled systems using influence coefficient      3 <sup>rd</sup> Natural Frequencies and Normal Modes, Orthogonality of Normal Modes      1 <sup>rd</sup> If theod of Matrix Iteration, Introduction to vibration of continuous system with the help of lateral vibration of Beam      2 <sup>rdd</sup> If theod of Matrix Iteration, Introduction to vibration of continuous system with the help of lateral vibration of Beam      1 <sup>rdd</sup>	5 <sup>th</sup>	1 <sup>st</sup>		
3 <sup>rd</sup> Response using techniques of calculus and phasor diagram, Magnification factor      h    1 <sup>rd</sup> Active and passive vibration isolation      2 <sup>rd</sup> Forced and Motion Transmissibility      3 <sup>rd</sup> Rotating and Reciprocating unbalance, Critical Speeds      n    1 <sup>rd</sup> Whirling of Rotating Shafts Vibration isolation materials      2 <sup>rd</sup> Impulse Excitation      3 <sup>rd</sup> Response to Step Excitations      3 <sup>rd</sup> Assignment: Numerical      2 <sup>rd</sup> Normal Mode Vibrations      3 <sup>rd</sup> Coordinate Coupling.      9 <sup>rd</sup> 1 <sup>rd</sup> 9 <sup>rd</sup> Force Ubrations in Terms of Initial Conditions      3 <sup>rd</sup> Force Vibrations, Simple Vibration Absorber      1 <sup>rd</sup> If <sup>rd</sup> 2 <sup>rdd</sup> Retue problems      2 <sup>rdd</sup> Close coupled system and far coupled systems using influence coefficient      3 <sup>rd</sup> Natural Frequencies and Normal Modes, Orthogonality of Normal Modes      1 <sup>rd</sup> I <sup>rd</sup> Method of Matrix Iteration, Introduction to vibration of continuous system with the help of lateral vibration of Beam      2 <sup>rdd</sup> Natural Frequencies and Normal Modes, Orthogonality of Normal Modes      1 <sup>rd</sup> I <sup>rd</sup> Method of Matrix Iteration, Introduction to v	2		Governing equation under harmonic excitation	
Image: Magnification factor    1  4 ctive and passive vibration isolation    2 <sup>ndl</sup> Forced and Motion    Transmissibility	-			
m    1 <sup>st</sup> Active and passive vibration isolation      2 <sup>nd</sup> Forced and Motion      Transmissibility		U		
2 <sup>nd</sup> Forced and Motion Transmissibility      3 <sup>rd</sup> Rotating and Reciprocating unbalance, Critical Speeds      n    1 <sup>rd</sup> Whifting of Rotating Shafts Vibration isolation materials      2 <sup>rd</sup> Impulse Excitation      3 <sup>rd</sup> Response to Step Excitations      3 <sup>rd</sup> Assignment: Numerical      2 <sup>rd</sup> Normal Mode Vibrations      3 <sup>rd</sup> Coordinate Coupling,      9 <sup>rd</sup> 1 <sup>rd</sup> 2 <sup>rd</sup> Forced Harmonic Vibrations      3 <sup>rd</sup> Forced Harmonic Vibrations, Simple Vibration Absorber      9 <sup>rd</sup> 1 <sup>rd</sup> 2 <sup>rdd</sup> Forced Harmonic Vibrations, Simple Vibration Absorber      9 <sup>rd</sup> 1 <sup>rd</sup> 2 <sup>rdd</sup> Forced Harmonic Vibration, Simple Vibration Absorber      9 <sup>rd</sup> 1 <sup>rd</sup> 2 <sup>rdd</sup> Close coupled system and far coupled systems using influence coefficient      3 <sup>rd</sup> Natural Frequencies and Normal Modes, Orthogonality of Normal Modes      1 <sup>rd</sup> Method of Matrix Iteration, Introduction to vibration of continuous system with the help of lateral vibration of Beam      2 <sup>rdd</sup> 1 <sup>rd</sup> Numerical, Dunkerley's method,      3 <sup>rd</sup> Assignment: Numerical, Dunkerley's method,      3 <sup>rd</sup>	6 <sup>th</sup>	1 <sup>st</sup>		
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