B.Tech 5th Semester (Mechanical Engineering)

Lesson Plan: Dynamics of Machine (PCC-ME-502/21)

S.N.	Content to be Covered	Lect. No.
	UNIT-1	
1	Static force analysis of planer mechanisms,	1
2	Dynamic force analysis including inertia and frictional forces of planer mechanisms.	2
3	D-Alembert's Principle	3
4	Forces on the reciprocating parts of an engine considering friction and inertia of moving parts,	4
5	Dynamically equivalent system,	5
6	Torque exerted on the crank shaft	6
7	Numericals	7
	UNIT-2	
8	Balancing rotating mass in single planes	8
9	Balancing rotating mass in several planes	9
10	Balancing of reciprocating engine	10
11	Concept of Partial balancing	11
12	Primary and secondary balancing of multi-cylinder inline engine and radial engine	12
13	Method of direct and reverse cranks.	13
14	Numericals	14
	UNIT-3	
15	Types of Governor	15
16	Watt Governor	16
17	Porter governor	17
18	Proell Governor	18
19	Hartnell Governor	19
20	Wilson-Hartnell governor	20
21	Sensitivity, Stability, Isochronisms, Hunting	21
22	Governor Effort and Power, controlling force.	22
	UNIT-4	
23	Spinning and precession	23
24	Gyroscopic couple	24
25	Effect of Gyroscopic couple on the stability of automotive vehicles	25
26	Stability of four wheelers.	26

Name of Teacher: Dr Vikas Kumar

27	Stability of four two wheelers.	27
28	Numericals	28
	UNIT-5	
29	Causes of Vibrations	29
30	Harmful and useful effects of vibrations	30
31	methods of reducing undesirable vibrations	31
32	Basic Definitions, Types of Vibrations, Elements of vibrating system, Equivalent stiffness of springs	32
33	Equivalent damping coefficient of dampers, methods of vibration analysis	33
34	Damped Vibrations, Vibration Isolation	34
35	Forced damped vibrations, Whirling's of shafts	35
36	Longitudinal vibrations, Transverse Vibrations, Torsional Vibrations.	36

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