

**Ch. Ranbir Singh State Institute of Engineering & Technology, Jhajjar**  
**Department of Mechanical Engineering**  
 III Yr. VI Semester (Mechanical Engineering)

**LESSON PLAN**

Program : **B. Tech**  
 Year & Sem. : **III / VI**  
 Course No : **PCC-ME-308 G**  
 Course Title : **DOM**  
 Max Marks : **75**  
 No. of Total Lecture : **42**  
 Schedule : **3L+0T=3**  
 Lecturer : **Dr. Vinay Singh**

**Recommended Books:**

1. Theory of Mechanisms and Machines: Amitabha Ghosh and Ashok kumar Malik, Third Edition Affiliated East-West Press.
2. Theory of Machines and Mechanisms: Joseph Edward Shigley and John Joseph Uicker, Jr. Second Edition, MGH, New York.
3. Theory of Mechanisms and Machines by R S Khurmi.

**Lesson Plan:**

<b>Theory</b>		<b>Practical</b>	
<b>Lecture Day</b>	<b>Topics to be covered</b>	<b>Practical day</b>	<b>Topics to be covered</b>
1.	Static and dynamic force analysis	1.	To perform experiment on Watt and Porter Governors to prepare performance characteristic Curves, and to find stability & sensitivity.
2.	Static force analysis of planer mechanisms		
3.	Dynamic force analysis of planer mechanisms including inertia forces		
4.	Dynamic force analysis of planer mechanisms including frictional forces	2.	To perform experiment on Proell Governor to prepare performance characteristic curves, and to find stability & sensitivity.
5.	Engine types		
6.	Indicator diagrams		
7.	Gas forces	3.	To perform experiment on Hartnell Governor to

8.	Equivalent masses, inertia forces		prepare performance characteristic Curves, and to find stability & sensitivity.
9.	Bearings loads in a single cylinder engine		
10.	Engine shaking forces	4.	To study gyroscopic effects through models.
11.	Static balance		
12.	Dynamic balance		
13.	Balancing of rotating masses	5.	To determine gyroscopic couple on Motorized Gyroscope.
14.	Graphical methods.		
15.	Analytic methods		
16.	Balancing of reciprocating masses	6.	To perform the experiment for static balancing on static balancing machine.
17.	Balancing of single cylinder engine		
18.	Balancing of multi cylinder engine		
19.	Radial and V type engine	7.	To perform the experiment for dynamic balancing on dynamic balancing machine.
20.	Governors		
21.	Types of governors		
22.	Characteristics of centrifugal governors	8.	Determine the moment of inertial of connecting rod by compound pendulum method and triflair suspension pendulum.
23.	Gravity controlled governors		
24.	Spring controlled governors		
25.	Hunting of centrifugal governors		

26.	Dynamometres		
27.	Types of Dynamometres		
28.	Prony brake		
29.	Rope brake		
30.	Belt transmission		
31.	Hydraulic dynamometer		
32.	Numerical problems		
33.	Numerical problems		
34.	Numerical problems		
35.	Gyroscope		
36.	Gyroscopic stabilization		
37.	Ship stabilization		
38.	Stability of four wheeler moving on curved path		
39.	Stability of two wheeler moving on curved path		
40.	Revision		
41.	Revision		
42.	Revision		