

SHRI VISHNU ENGINEERING COLLEGE FOR WOMEN:: BHIMAVARAM
(AUTONOMOUS) DEPARTMENT OF MECHANICAL ENGINEERING

MECHANICS OF MACHINES LAB

Laboratory In-charge : **Mr. M. Rajesh**
Laboratory Technician : **Mr. KVSSSNRL Varma**

OBJECTIVE:

The Mechanics of Machines lab aims to provide students with practical insights into essential concepts of machine dynamics and vibrations. Through hands-on experimentation, students will grasp the operational principles of centrifugal governors, mastering their role in regulating speed and stability in rotating machinery. They'll also develop proficiency in balancing techniques for both rotating and reciprocating masses, crucial for minimizing vibrations and ensuring smooth machine operation. Cam analysis exercises will deepen their understanding of cam mechanisms, converting rotary motion into reciprocating or oscillating motion. Furthermore, students will explore vibration damping methods to mitigate unwanted oscillations and ensure mechanical system reliability. Torsional vibrations in shafts and whirling phenomena analysis will elucidate the dynamic behavior of machinery under various loading conditions. Ultimately, these practical experiences will equip students with invaluable skills in experimental techniques, data analysis, and problem-solving, enhancing their comprehension of machine dynamics and vibrations in real-world applications.



Lab Equipment:

S.No	Item Discription	Stock	Cost
1	Balancing of Rotating Masses	1	17482.5
2	Balancing of reciprocating masses	1	54112.5
3	Cam Analysis Machine	1	25599.375
4	Double Slider Crank Mechanism	1	5411.25
5	Double Crank Rocker Mechanism	1	5411.25
6	Equipment Spring Mass System	1	40376.25
7	Four Bar Link Mechanism	1	2081.25
8	Field Balancing	1	70762.5
9	Free Vibration of Spring Mass System	1	14062.59
10	Motorised Gyroscope	1	21228.75
11	Oscillating Cylinder Mechanism	1	4370.625
12	Reciprocating Engine Mechanism	1	3954.375
13	Single Rotor Viscous Damping System	1	15401.25
14	Single/Two Rotor System	1	17482.5
15	Universal Governor (Watt)	1	23934.375
16	Universal Governor (Portor)	1	23934.375
17	Universal Governor (Proell)	1	23934.375
18	Whirling of Shaft Apparatus	1	25391.25
19	Whitworth Quick Return Mechanism	1	4370.625
Total			399301.965

List of Experiments:

S.No.	Name of the Experiment	
1	Watt Governor	
2	Portor Governor	
3	Proell Governor	
4	Hartnell Governor	
5	CAM Analysis	
6	Motorized Gyroscope	
7	Balancing of Thin Rotors Set-Up	
8	Static & Dynamic Balancing Machine	
9	Balancing Of Reciprocating Masses Apparatus	
10	Spring Mass System (Un-Damped & Damped Conditions)	
11	Single Rotor System with Viscous Damping	
12	A	Single Rotor System (Undamped)
	B	Two Rotor System (Undamped)
13	A	Equivalent Spring Mass System (Free Vibration)
	B	Equivalent Spring Mass System (Forced Vibrations)
14	Whirling Of Shafts	