



Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058-India
(Autonomous Institute Affiliated to University of Mumbai)

Course Code	Course Name	Teaching Scheme (Hrs/week)			Credits Assigned				
		L	T	P	L	T	P	Total	
ESL12/ESL22	Engineering Mechanics Laboratory	--	--	2	--	--	1	1	
		Examination Scheme							Total
		ISE		ESE			Total		
		40		Practical	Oral			20	60

Course Outcomes:

ESL12/ESL22 Engineering Mechanics Laboratory	Learners will be able to...
CO1	Draw force polygon for a coplanar force system and also determine resultant force using principle of moment
CO2	Determine reactive forces using conditions of equilibrium and Lami's theorem
CO3	Determine coefficient of friction for various contact surfaces
CO4	Obtain the various parameters for motion of a particle
CO5	Determine coefficient of restitution for collision
CO6	Design and conduct an experiment to demonstrate principles of statics and dynamics

Experiment No.	Experiment Details	Marks.
1	Draw the force polygon and determine the resultant of forces for concurrent coplanar force system.	05
2	Use the conditions of equilibrium for parallel force system and determine the support reactions.	05
3	Apply the principle of moment for equilibrium of levers.	05
4	Determine the coefficient of friction for glass slab and a metal plate on an inclined plane.	05
5	Determine the axial forces using Lami's theorem for Jib crane apparatus.	05
6	Use the conditions of equilibrium for non-concurrent non-parallel force system and draw the force polygon.	05
7	Measure the acceleration due to gravity with the help of simple pendulum apparatus.	05
8	Determine the range of projectile and the time of flight for the projectile motion.	05
9	Using the timing car apparatus 1. Plot the motion curves for linear motion under low friction; plot time vs distance, velocity	05



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	<ol style="list-style-type: none">2. Demonstrate linear motion on an inclined plane3. Verify the law of conservation of momentum4. Determine the coefficient of restitution for collision	
10	Plot the motion of projectile using air-cushion table apparatus.	05

Note: Students should perform minimum eight experiments under ISE component for successful completion of course.