BMEE207P	Kinematics & Dynamics of Machines Lab	L	T	P	C
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Pre-requisite	**BMEE201L**	**Syllabus version**			
		1.0			

Course Objective

1. To impart practical skills in analyzing different mechanism.
2. To familiarize the use of cams and gears.
3. To demonstrate the importance of governors and gyroscopes.

Course Outcomes

At the end of the course, the student will be able to

1. Determine the kinematic behaviour of various planar mechanisms.
2. Analyse the free, forced, and damped vibration of different systems.
3. Investigate the performance of various governors and the gyroscope.

Indicative Experiments	
1.	Study of different planar mechanisms
2.	Determination of the Coriolis component of acceleration
3.	Kinematic analysis of gear and gear train
4.	Cam synthesis and jump phenomenon
5.	Determination of the natural vibration of the spring mass system
6.	Determination of the free torsional vibration of two rotor system
7.	Determination of the radius of gyration of bifilar & trifilar system
8.	Determination of the critical speed of the whirling shafts with different fixings
9.	Determination of equilibrium speeds of Watt governor
10	Determination of equilibrium speeds of Porter governor
11	Determination of equilibrium speeds of Hartnell governor
12	Determination of gyroscopic couple acting on a rotating disc
	Total Laboratory Hours **30 hours**

Text Book(s)

1.	Rattan S. S, Theory of Machines, Tata McGraw Hill, 2019.
2.	Lab Manual prepared by course faculty members.

Reference Books

1.	Joseph Edward Shigley and John Joseph Uicker Jr., Theory of Machines and Mechanisms SI Edition, 2014, Oxford University Press
2	Norton R. L, Kinematics and Dynamics of Machinery, 2017, McGraw-Hill Education
3	Norton R. L, Design of Machinery, An Introduction to the Synthesis and Analysis of Mechanisms and Machines, 2019, McGraw-Hill Higher Education

Mode of assessment: Viva-voce examination, Lab performance & FAT

Recommended by Board of Studies	09-03-2022		
Approved by Academic Council	No. 65	Date	17-03-2022