GOVERNMENT POLYTECHNIC, KORAPUT

DEPARTMENT OF MECHANICAL ENGINEERING

Discipline: **MECHANICAL ENGG**	Semester: 1ST	Name of the Teaching Faculty: Satish Kumar Sahu.
Subject: ENGG MECHANICS	No. of days/per week class allotted:	Semester From date: To Date: No. of Weeks:15

COURSE OUTCOMES	On completion of the subject, the student will be able to do: 1. Compute the force, moment & their application through solving of simple problems on coplanar forces. 2. Understand the concept of equilibrium of rigid bodies. 3. Know the existence of friction & its applications through solution of problems on above. 4. Locate the C.G. & find M.I. of different geometrical figures. 5. Know the application of simple lifting machines. 6. Understand the principles of dynamics.

Week	Class Day	Theory/Practical Topics
1ST	1ST	Fundamentals of mechanics, force
	2ND	Force system
	3RD	Resolution of forces perpendicular component
	4TH	Resolution of forces non perpendicular component
2ND	1ST	Numericals
	2ND	Numericals
	3RD	Composition of forces, resultant force
	4TH	Paralleogram law
3RD	1ST	Paralleogram law
	2ND	Graphical method
	3RD	Graphical method
	4TH	Free body diagram, action & reaction force
4TH	1ST	Moment of force, varignons theorm
	2ND	Couple
	3RD	Numericals
	4TH	Numericals
5TH	1ST	Equilibrium, types of equilibrium
	2ND	Equilibrium for concurrent & non concurrent force system, free body diagram
	3RD	Numericals
	4TH	Numericals
6TH	1ST	Numericals
	2ND	Numericals
	3RD	Lamis theorm
	4TH	Numericals
7TH	1ST	Friction, Force of limiting ,types of friction
	2ND	Cofficieant of friction, angle of friction, angle of repose

		3RD	Laws of static & dynamic friction, advantage & disadvantages of friction
		4TH	Equilibrium of bodies on rough inclined plane subjected to force
8TH		1ST	Continued
		2ND	Ladder
		3RD	Numericals
		4TH	Wedge friction
9TH		1ST	Numericals
		2ND	Numericals
		3RD	Simple machines, terms related to simple machines
		4TH	Continued..
10TH		1ST	Laws of machine
		2ND	Reversible & irreversible machine
		3RD	Numericals
		4TH	Numericals
11TH		1ST	Study of simple machines, screw jack
		2ND	Types of hoisting machines
		3RD	Dynamic, laws of motion
		4TH	De almbrats principle, equation of motion
12TH		1ST	Work, power, energy
		2ND	Momentum, impulse
		3RD	Cillision
		4TH	Collision
13TH		1ST	Centroid, center of gravity, centre of gravity of square, rectangle, circle, semicircle, quartercircle
		2ND	Continued
		3RD	Continued
		4TH	Numericals
14TH		1ST	Centoids of composite figures
		2ND	Numericals
		3RD	Moment of inertia
		4TH	Parallel axis theorm, perpendicular axis theorm
15TH		1ST	Moment of inertia of plane lamina
		2ND	Numericals
		3RD	Numericals
		4TH	Numericals

LEARNING RESOURCES:

1. Engineering Mechanics – by A.R. Basu (TMH Publication Delhi)

2. Engineering Machines – Basudev Bhattacharya (Oxford University Press).

3. Text Book of Engineering Mechanics – R.S Khurmi (S. Chand).

4. Applied Mechanics & Strength of Material – By I.B. Prasad.

5. Engineering Mechanics – By Timosheenko, Young & Rao.

6. Engineering Mechanics – Beer & Johnson (TMH Publication)

Sign Of Faculty
concerned

Principal

Signature:
HOD