



GOVERNMENT POLYTECHNIC, NABARANGPUR
DEPARTMENT OF MECHANICAL ENGINEERING

Discipline: MECHANICAL & AUTO.ENGG.	Semester: 2ND	Name of the Teaching Faculty: LAXMAN GOLARI
Subject: ENGINEERING MECHANICS LAB	No. of days/per week class allotted: 2 +2	Semester From date: 04.02.2025 To Date: 17.05.2025 No. of Weeks: 15
COURSE OUTCOMES	CO1: Analyze different simple machines to find out different influencing parameters Mechanical Advantage, Velocity Ratio and Efficiency CO2 : Understand the phenomena of friction in different condition and make analysis through experiment to find out coefficient of friction CO3: Determine resultant of various force systems and analyse the equilibrium of a rigid body by Lamis theorem. CO4 : Analyse and find out the value of support reactions of different types of beam. CO5: Determine Centroid of geometrical plane figures.	
Week	Class Day	Theory/Practical Topics
1ST	1ST	To study various equipments related to Engineering Mechanics.
	2ND	To study various equipments related to Engineering Mechanics.
2ND	1ST	To find the M.A., V.R., Efficiency and law of machine for Simple Screw Jack.
	2ND	To find the M.A., V.R., Efficiency and law of machine for Simple Screw Jack.
3RD	1ST	Derive Law of machine using Worm and worm wheel.
	2ND	Derive Law of machine using Single purchase crab.
4TH	1ST	Derive Law of machine using double purchase crab.
	2ND	Derive Law of machine using double purchase crab.
5TH	1ST	Derive Law of machine using Weston's differential or wormed geared pulley block. D
	2ND	Derive Law of machine using Weston's differential or wormed geared pulley block. D
6TH	1ST	Determine resultant of concurrent force system applying Law of Polygon of forces using force table
	2ND	Determine resultant of concurrent force system applying Law of Polygon of forces using force table
7TH	1ST	Determine resultant of concurrent force system graphically
	2ND	Determine resultant of concurrent force system graphically
8TH	1ST	Determine resultant of parallel force system graphically
	2ND	Determine resultant of parallel force system graphically
9TH	1ST	Study forces in various members of Jib crane
	2ND	Study forces in various members of Jib crane
10TH	1ST	Determine support reactions for simply supported beam.
	2ND	Determine support reactions for simply supported beam.

11 TH	1 ST	Obtain support reactions of beam using graphical method
	2 ND	Study forces in various members of Jib crane.
12 TH	1 ST	Verify Lami's theorem
	2 ND	Verify Lami's theorem
	2 ND	Determine coefficient of friction for motion on horizontal and inclined plane.
13 TH	1 ST	Determine coefficient of friction for motion on horizontal and inclined plane.
	2 ND	Determine centroid of geometrical plane figures
14 TH	1 ST	Determine centroid of geometrical plane figures.
	2 ND	RECORD SUBMISSION
15 TH	1 ST	RECORD SUBMISSION
	2 ND	VIVA VOCE

SUGGESTED LEARNING RESOURCES:

1. Engineering Mechanics by Prof. Bhankhar Bharat Gokaldas (Download from <https://ekumbh.aicte-india.org/dbook.php>) Bedi D.S.,
2. Engineering Mechanics, Khanna Publishing House
3. Khurmi, R.S., Applied Mechanics, S.Chand & Co. New Delhi.
4. Bansal R K, A text book of Engineering Mechanics, Laxmi Publications.
5. Ramamrutham, Engineering Mechanics, S., S Chand & Co. New Delhi. Dhade,
6. Jamadar & Walawelkar, Fundamental of Applied Mechanics, Pune Vidhyarthi Gruh.
7. Ram, H. D.; Chauhan, A. K. Foundations and Applications of Applied Mechanics, Cambridge University Press.
8. Meriam, J. L., Kraige, L.G. , Engineering Mechanics- Statics, Vol. I, Wiley Publication, New Delhi.

Laxman Golani
24.01.2025

Sign. Of Faculty
concerned


Academic coordinator


Sign. Of Faculty


Principal
7.2.25