

Badriprasad Institute of Technology, Sambalpur

Lesson plan for Theory -4, Engineering Mechanics

Semester & Branch : 1st Sem Mechanical Engineering

Name of the faculty : Mr Siddharth Purohit

Total Periods- 60

No of periods /week- 4

Week	Day	Topic
1st	1st	Fundamental: Definition of mechanics, Statics, Dynamics, Rigid body
	2nd	Force: Force system, Definition, classification, characteristics, principle of transmissibility
	3rd	Principle of super position, action and reaction force, free body diagram
	4th	Resolution of a force, Definition, method of resolution, type of component force
2nd	5th	Composition of forces, Definition resultant force, parallelogram law of forces
	6th	Proof of Parallelogram law of forces
	7th	Polygon law of forces, triangle law of forces
	8th	Concurrent, non-concurrent forces
3rd	9th	Moment of force, unit, classification of moment
	10th	Varignon's theorem with proof
	11th	couple: Definition, unit and property
	12th	Problem related resolution and resultant of forces
4th	13th	Problem related to triangle and parallelogram law of forces
	14th	Problem related to moment and couple
	15th	EQUILIBRIUM: Definition and Lami's theorem
	16th	Proof of Lami's theorem
5th	17th	Numerical Problem related to Lami's theorem
	18th	Continue
	19th	Continue
	20th	Continue
6th	21st	FRICTION: Definition, frictional forces, limiting friction
	22nd	Co-efficient of friction, angle of friction
	23rd	Angle of repose and law of friction
	24th	Advantages and disadvantages of friction
7th	25th	problem related to friction
	26th	Problem continue
	27th	Equilibrium of body on level plane, force applied on horizontal plan
	28th	Force applied on inclined plan
8th	29th	Problem related to Level plane (Up an Down)
	30th	Ladder friction Problem
	31st	Problem continue
	32nd	CENTROID: Definition, centred of Different geometrical figure
9th	33rd	Centurion of Different geometrical figure continue
	34th	Problem of various section such as L-section, T-section, C-Section, I-section
	35th	Problem continue

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	36th	Problem continue
10th	37th	Problem related to different composite section
	38th	Continue
	39th	MOMENT OF INERTIA: Definition
	40th	Parallel axis theorem
	41st	Perpendicular axis theorem
11th	42nd	MI of different section
	43rd	Problem related to MI
	44th	Problem continue
	45th	SIMPLE MACHINE: Definition, velocity ratio of simple and compound gear train
12th	46th	Simple and compound lifting machine
	47th	Definition of M.A., V.R. and efficiency & relation between them
	48th	Law of Machine: reversibility of machine
	49th	Self locking machine
13th	50th	problem
	51st	Problem continue
	52nd	DYNAMICS: Kinematics and Kinetic, Newton Law of motion
	53rd	Equation motion, Dealembert principle
14th	54th	Problem
	55th	Work, Power, Energy
	56th	Kinetic and Potential energy with problem
	57th	Problem continue
15th	58th	Momentum and Impulse, conservation of energy
	59th	Linear momentum, collision of elastic body and coefficient of restitution
	60th	Various Problem

Sign of Faculty

Sign of HOD