



**JEYPORE SCHOOL OF ENGINEERING AND TECHNOLOGY, RANDAPALLI
DEPARTMENT OF COMPUTER SCIENCE ENGINEERING**

LESSON PLAN FOR YEAR:-2025-26 **SUB:-THERMAL ENGINEERING-II**

DISCIPLINE: MECHANICAL ENGINEERING	SEM:- 4TH	NAME OF THE TEACHING FACULTY:- MR.AMULYA KUMAR PANDA
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NO.OFWEEK:- 15	NO.OF DAYS/PER WEEK CLASS ALLOTTED: 3	SEMESTER FROM DATE : 22/12/25 TO DATE:- 18/04/26
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COURSE OUTCOMES	<ul style="list-style-type: none"> • CO1: Understand the fundamentals of mechanisms and their inversions. • CO2: Analyze the effects of friction in clutches and bearings. • CO3: Evaluate power transmission systems like belts and gear trains. • CO4: Understand the function of governors, balancing, and vibration.
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WEEK	PERIOD	THEORY/PRACTICAL TOPICS
1ST	1ST	Introduction to Theory of Machines: Links, Kinematic Pairs
	2ND	Classification of Kinematic Pairs: Lower & Higher Pairs
	3rd	Kinematic Chains and Degrees of Freedom (Gruenler's Criterion)
2ND	1ST	Inversions of Four-Bar Chain: Beam Engine & Coupling Rod
	2ND	Inversions of Single Slider Crank Chain: Oscillating Cylinder
	3rd	Inversions of Double Slider Crank Chain: Elliptical Trammel
3RD	1ST	Friction: Friction between nut and screw for square thread
	2ND	Efficiency of Screw Jack and Numerical Problems
	3rd	Friction in Pivot and Collar Bearings
4TH	1ST	Friction Clutches: Single Plate Clutch (Uniform Wear/Pressure)
	2ND	Multi-Plate Clutch and Centrifugal Clutch
	3rd	QUIZ & ASSIGNMENT-I
5TH	1ST	Power Transmission: Types of Belt Drives & Velocity Ratio
	2ND	Length of Open and Cross Belt Drives
	3rd	Centrifugal Tension and Initial Tension in Belts

WEEK	PERIOD	THEORY/PRACTICAL TOPICS
6TH	1ST	Gear Trains: Types (Simple, Compound, Reverted)
	2ND	Epicyclic Gear Trains: Tabular Method for Speed Ratio
	3rd	Numerical Problems on Epicyclic Gear Trains
7TH	1ST	Governors: Functions and types of Centrifugal Governors
	2ND	Watt Governor: Working Principle and Height Equation
	3rd	Porter Governor: Sensitivity and Stability
8TH	1ST	Hartnell Governor: Spring loaded governor analysis
	2ND	Terms used in Governors: Hunting, Isochronism, Effort
	3rd	QUIZ & ASSIGNMENT-II
9TH	1ST	Balancing: Concept of Static and Dynamic Balancing
	2ND	Balancing of Single Rotating Mass by another in same plane
	3rd	Balancing of several masses rotating in different planes
10TH	1ST	Introduction to Vibration: Types (Longitudinal, Transverse, Torsional)
	2ND	Causes of Vibration and Remedial measures
	3rd	Numerical Problems on Natural Frequency
11TH	1ST	Brakes and Dynamometers: Types of Brakes
	2ND	Simple Block Brake and Band Brake Analysis
	3rd	Dynamometers: Absorption and Transmission types
12TH	1ST	Cams and Followers: Terminology and Types
	2ND	Motion of Follower: Uniform Velocity and S.H.M.
	3rd	QUIZ & ASSIGNMENT-III
13TH	1ST	Revision: Unit 1 (Mechanisms & Inversions)
	2ND	Revision: Unit 2 & 3 (Friction & Power Transmission)
	3rd	Revision: Unit 4 & 5 (Governors & Balancing)
14TH	1ST	Discussion on Previous Year Question Papers
	2ND	Doubt Clearing Session

PERIOD	THEORY/PRACTICAL TOPICS
3rd	Internal Assessment / Class Test
1ST	Final Syllabus Review
2ND	Lab Record Verification (if applicable)
3rd	Final Semester Preparation Tips

LEARNING RESOURCES

- *Theory of Machines* by R.S. Khurmi and J.K. Gupta.
- *Theory of Machines* by S.S. Rattan.
- *Mechanism and Machine Theory* by J.S. Rao.


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