TH2

GOVT. POLYTECHNC, DHENKANAL

LESSON PLAN: DME, 5TH SEMESTER, WINTER –(2024-2025)

Discipline: **Mechanical Engineering**	Semester: **5TH**	Name of the teaching faculty: **PRADEEP KUMAR JENA**
Subject: **DME**	No of days/per week class allotted: **04**	Semester From Date:**16.08.2024** To Date: **16.12.2024** No of weeks:**15**
Week:	Class day:	**Theory/practical topics:**
1ST	1ST	INTRODUCTION TO MACHINE DESIGN AND ITS CLASSIFICATION
	2ND	DIFFERENT MECHANICAL ENGINEERING MATERIALS USED IN DESIGN WITH THEIR USES
	3RD	PHYSICAL AND MECHANICAL PROPERTIES OF ENGINEERING MATERIALS
	4TH	WORKING STRESS, YIELD STRESS, ULTIMATE STRESS & FACTOR OF SAFETY
2ND	1ST	NUMERICALS ON WORKING, YIELD AND ULTIMATE STRESS.
	2ND	STRESS–STRAIN CURVE FOR M.S & C.I AND SALIENT POINTS
	3RD	MODES OF FAILURE BY ELASTIC DEFLECTION
	4TH	MODES OF FAILURE BY GENERAL YIELDING
3RD	1ST	MODES OF FAILURE BY FRACTURE
	2ND	FAILURE OF MACHINE ELEMENTS DUE TO FATIGUE AND CREEP.
	3RD	FACTORS GOVERNING THE DESIGN OF MACHINE ELEMENTS.
	4TH	DESIGN PROCEDURE
4TH	1ST	JOINTS AND THEIR CLASSIFICATION & TYPES OF WELDED JOINTS.
	2ND	ADVANTAGES OFWELDED JOINTS OVER OTHER JOINTS

	3RD	DESIGN OF WELDED JOINTS FOR NORMAL LOADS.
	4TH	PERFORMANCE TEST.
5TH	1ST	DESIGN OF WELDED JOINTS FOR ECCENTRIC LOADS.
	2ND	NUMERICALS ON DESIGN OF WELDED JOINTS
	3RD	TYPES OF RIVETED JOINTS AND TYPES OF RIVETS.
	4TH	FAILURE OF RIVETED JOINTS
6TH	1ST	STRENGTH & EFFICIENCY OF RIVETED JOINTS.
	2ND	NUMERICALS ON DESIGN OF RIVETED JOINTS
	3RD	DESIGN OF RIVETED JOINTS FOR PRESSURE VESSEL.
	4TH	NUMERICALS ON DESIGN OF PRESSURE VESSEL
7TH	1ST	FUNCTION OF SHAFTS.
	2ND	MATERIALS OF SHAFTS
	3RD	DESIGN SOLID & HOLLOW SHAFTS TO TRANSMIT A GIVEN POWER AT GIVEN RPM BASED ON STRENGTH
	4TH	NUMERICALS ON DESIGN OF SOLID SHAFTS AND HOLLOW SHAFTS BASED ON STRENGTH
8TH	1ST	DESIGN SOLID & HOLLOW SHAFTS TO TRANSMIT A GIVEN POWER AT GIVEN RPM BASED ON RIGIDITY
	2ND	NUMERICAL SONDESIGN OF SOLID SHAFTS AND HOLLOW
	3RD	SHAFTS BASED ONRIGIDITY, STANDARDSIZE OF SHAFTAS PERIS.
	4TH	FUNCTION OF KEYS, TYPES OF KEYS & MATERIAL OF KEY& FAILURE OF KEY, EFFECT OF KEY WAY

9TH	1ST	DESIGN OF RECTANGULAR SUNK KEY CONSIDERING ITS FAILURE AGAINST SHEAR & CRUSHING AND NUMERICALS
	2ND	DESIGN RECTANGULAR SUNK KEY BY USING EMPIRICAL RELATION FOR GIVEN DIAMETER OF SHAFT AND NUMERICALS
	3RD	SPECIFICATION OF PARALLEL KEY, GIB-HEAD KEY, TAPER KEY AS PER I.S.
	4TH	DISCUSSION OF IMPORTANT QUESTIONS
10TH	1ST	DISCUSSION OF IMPORTANT QUESTIONS
	2ND	SHAFT COUPLING, DIFFERENCE BETWEEN CLUTCH AND COUPLING
	3RD	REQUIREMENTS OF A GOOD SHAFT COUPLING
	4TH	ADVANTAGES OF USING SHAFT COUPLINGS
11TH	1ST	TYPES OF COUPLING.
	2ND	DESIGN OF SLEEVE OR MUFF-COUPLING.
	3RD	NUMERICALS ON DESIGN OF SLEEVE COUPLING
	4TH	DESIGN OF CLAMP OR COMPRESSION COUPLING
12TH	1ST	NUMERICALS ON CLAMP COUPLING
	2ND	DISCUSSION OF IMPORTANT QUESTIONS
	3RD	DISCUSSION OF IMPORTANT QUESTIONS
	4TH	PREVIOUS SEMESTER QUESTION DISCUSSION
13TH	1ST	MATERIALS USED FOR HELICAL SPRING.

	2ND	STANDARD SIZE SPRING WIRE (SWG)
	3RD	TERMS USED IN COMPRESSION SPRING
	4TH	STRESS IN HELICAL SPRING OF A CIRCULAR WIRE.
14TH	1ST	NUMERICALS OF STRESS ON HELICAL SPRINGS OF CIRCULARWIRE.
	2ND	DEFLECTION OF HELICAL SPRING OF CIRCULAR WIRE.
	3RD	NUMERICALS ON DEFLECTION OF SPRINGS & SURGE IN SPRING.
	4TH	NUMERICAL ON DESIGN OF HELICAL SPRING
15TH	1ST	NUMERICAL ON DESIGN OF HELICAL SPRING
	2ND	DISCUSSION OF IMPORTANT QUESTIONS
	3RD	DISCUSSION OF IMPORTANT QUESTIONS
	4TH	PREVIOUS SEMESTER QUESTION DISCUSSION

Sign. Of Faculty Concerned

Sign. of HOD