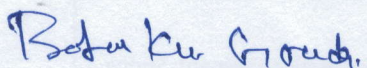
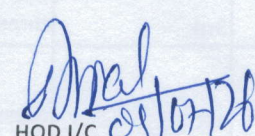
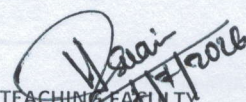
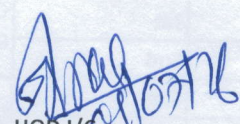


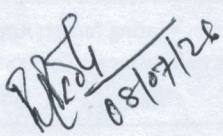
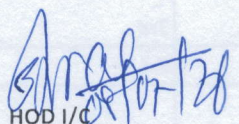
LESSON PLAN		
Discipline : Mechanical Engg.	Semester : 5th	Name of the Teachnig Faculty : Mr Balaram Gouda
Subject: Metrology & Measurement	No.of days/Per weeks Class Alloted Weeks :3	Semester from date : 01.07.2026 To Date : 05.11.2026 No.of Weeks : 15
Weeks	Class day	Theory
1st	1st	Introduction to measurements: Definition of measurement; Significance of measurement; Methods of measurements: Direct & Indirect
	2nd	
2nd	3rd	Generalized measuring system; Standards of measurements: Primary & Secondary; Factors influencing selection of measuring instruments
	1st	
	2nd	Terms applicable to measuring instruments: Precision and Accuracy, Sensitivity and Repeatability, Range, Threshold, Hysteresis, calibration; Errors in Measurements
	3rd	
3rd	1st	Classification of errors, Systematic and Random error.
	2nd	Measuring instruments: Introduction; Thread measurements: Thread gauge micrometer; Angle measurements: Bevel protractor, Sine Bar; Gauges: plain plug gauge, ring Gauge, snap gauge, limit gauge; Comparators
	3rd	
4th	3rd	Characteristics of comparators, Types of comparators; Surface finish: Definition, Terminology of surface finish, Talysurf surface roughness tester; Co-ordinate measuring machine
	1st	
5th	2nd	Transducers and Strain gauges: Introduction; Transducers: Characteristics, classification of transducers, two coil self-inductance transducer, Piezoelectric transducer
	3rd	
	1st	
	2nd	Strain Measurements:
	3rd	Strain gauge, Classification, mounting of strain gauges, Strain gauge rosettes- two and three elements
6th	1st	Measurement of force, torque, and pressure: Introduction; Force measurement: Spring Balance, Proving ring, Load cell; Torque measurement: Prony brake
	2nd	
	3rd	
7th	1st	Eddycurrent, Hydraulic dynamometer; Pressure measurement: Mcloed gauge
	2nd	
8th	3rd	Applied mechanical measurements: Speed measurement: Classification of tachometers, Revolution counters
	1st	
	2nd	Eddy current tachometers; Displacement measurement: Linear variable Differential transformers (LVDT)
	3rd	
9th	1st	Flow measurement: Rotometers, Turbine meter; Temperature measurement:

	2nd	Resistance thermometers, Optical Pyrometer
	3rd	Miscellaneous measurements: Humidity measurement: hair hygrometer;
10th	1st	Density measurement: hydrometer; Liquid level measurement: sight glass, Float gauge; Biomedical measurement: Sphygmo monometer
	2nd	Limits, Fits & Tolerances: Concept of Limits, Fits, and Tolerances; Selective Assembly;
	3rd	Interchangeability; Hole and Shaft Basis System
11th	1st	Taylor's Principle; Design of Plug; Ring Gauges; IS 919-1993 (Limits, Fits & Tolerances, Gauges) IS 3477-1973; concept of multi gauging and inspection
	2nd	
	3rd	Angular Measurement: Concept; Instruments for Angular Measurements; Working and Use of Universal Bevel Protractor, Sine Bar, Spirit Level; Principle of Working of Clinometers; Angle Gauges (With Numerical on Setting of Angle Gauges)
12th	1st	
	2nd	Screw thread Measurements: ISO grade and fits of thread; Errors in threads; Pitch errors; Measurement of different elements such as major diameter, minordiameter
	3rd	
13th	1st	effective diameter, pitch; Two wire method; Thread gauge
	2nd	micrometer; Working principle of floating carriage dial micrometer
	3rd	Gear Measurement and Testing: Analytical and functional inspection; Rolling test; Measurement of tooth thickness (constant chord method); Gear tooth vernier
14th	1st	
	2nd	
	3rd	Errors in gears such as backlash, runout, composite.
15th	1st	Machine tool testing: Parallelism; Straightness; Squareness
	2nd	Coaxiality; roundness; run out; alignment testing of machine tools as per IS standard procedure
	3rd	
 TEACHING FACULTY  HOD I/C		

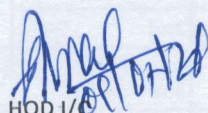
LESSON PLAN		
Discipline : Mechanical Engg.	Semester : 5th	Name of the Teachnig Faculty : Mrs Puja Swain
Subject: Design Of Machine Elements	No.of days/Per weeks Class Alloted Weeks :3	Semester from date : 01.07.2026 To Date : 05.11.2026 No.of Weeks : 15
Weeks	Class day	Theory
1st	1st	Machine Design philosophy and Procedures; General Considerations in Machine Design
	2nd	
	3rd	Fundamentals: Types of loads, concepts of stress, Strain, Stress – Strain Diagram for Ductile and Brittle Materials, Types of Stresses; Bearing pressure Intensity; Crushing; Bending and Torsion
2nd	1st	
	2nd	Principal Stresses; Simple Numericals; Creep strain and Creep Curve; Fatigue; S-N curve; Endurance Limit; Factor of Safety, Stress Concentration
	3rd	
3rd	1st	Properties of Engineering materials; Designation of materials as per IS and introduction to International standards & advantages of standardization
	2nd	
	3rd	Use of design data book; Use of standards in design and preferred numbers series
4th	1st	
	2nd	Theories of Elastic Failures; Principal normal stress theory; Maximum shear stress theory & Maximum distortion energy theory
	3rd	
5th	1st	Cotter Joint; Knuckle Joint; Turnbuckle; Design of Levers: Hand/Foot Lever & Bell Crank Lever
	2nd	
	3rd	Design of C–Clamp; Off-set links; Overhang Crank; Arm of Pulley
6th	1st	
	2nd	Antifriction Bearings: Classification of Bearings; Sliding contact & Rolling contact; Terminology of Ball bearings: Life Load relationship
	3rd	
7th	1st	Basic static load rating and Basic dynamic load rating, limiting speed; Selection of ball bearings using manufacturer's catalogue.
	2nd	
	3rd	Types of Shafts; Shaft materials; Standard Sizes; Design of Shafts (Hollow and Solid) using strength and rigidity criteria
8th	1st	
	2nd	ASME code of design for line shafts supported between bearings with one or two pulleys in between or one overhung pulley
	3rd	
9th	1st	Design of Sunk Keys; Effect of Key-ways on strength of shaft
	2nd	Design of Couplings – Muff Coupling, Protected type Flange Coupling, Bush-pin type flexible coupling
	3rd	Spur gear design considerations; Lewis equation for static beam strength of spur gear teeth; Power transmission capacity of spur gears in bending
10th	1st	

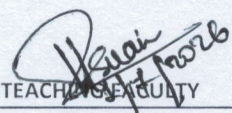
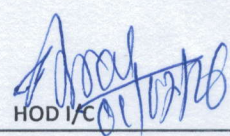
	2nd	Thread Profiles used for power Screws - Relative merits and demerits of each; Torque required to overcome thread friction
	3rd	
11th	1st	Self-locking and overhauling property; Efficiency of power screws; Types of stresses induced; Design of Screw Jack; Toggle Jack
	2nd	
	3rd	Design of springs: Classification and Applications of Springs; Spring terminology; Materials and Specifications; Stresses in springs; Wahl's correction factor
12th	1st	
	2nd	Deflection of springs; Energy stored in springs; Design of Helical, Tension and Compression springs subjected to uniform applied loads like I.C. engine valves
	3rd	
13th	1st	Weighing balance, Railway buffers and
	2nd	Governor springs; Leaf springs: Construction and Application
	3rd	Stresses in Screwed fasteners; Bolts of Uniform Strength; Design of Bolted Joints subjected to eccentric loading; Design of Parallel and Transverse fillet welds
14th	1st	
	2nd	
	3rd	Axially loaded symmetrical section; Merits and demerits of screwed and welded joints
15th	1st	
	2nd	Ergonomics of Design: Man-Machine relationship; Design of Equipment for control, environment & safety; Aesthetic considerations regarding shape, size, color & surface finish
	3rd	
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LESSON PLAN		
Discipline : Mechanical Engg.	Semester : 5th	Name of the Teachnig Faculty : Mr Pradeep Kumar Padhy
Subject: Industrial Engineering & Management	No.of days/Per weeks Class Alloted Weeks :3	Semester from date : 09.07.2026 To Date : 05.11.2026 No.of Weeks : 15
Weeks	Class day	Theory
1st	1st	Plant; Selection of site of industry; Plant layout; Principles of a good layout
	2nd	
	3rd	Types; Process; Product and Fixed position; Techniques to improve Layout; Principles of Material handling equipment
2nd	1st	Plant maintenance; Importance; Break down maintenance; Preventive maintenance and Scheduled maintenance
	2nd	
	3rd	Importance; Accident: Causes and Cost of an Accident, Accident Proneness, Prevention of Accidents; Industrial disputes; Settlement of Industrial disputes; Collective bargaining; Conciliation
3rd	1st	
	2nd	Mediation; Arbitration; Indian Factories Act 1948 and its provisions related to health, welfare and safety
	3rd	
4th	1st	Productivity; Standard of living; Method of improving Productivity
	2nd	Objectives; Importance of good working conditions.
	3rd	Definition; Objectives; Selection of a job for method study; Basic procedure for conduct of Method study
5th	1st	Tools used; Operation process chart; Flow process chart
	2nd	Two handed process chart; Man Machine chart; String diagram and flow diagram.
	3rd	Definition; Basic procedure in making a time study; Employees rating factor; Application of time allowances: Rest, Personal, Process, Special and Policy allowances; Calculation of standard time
6th	1st	
	2nd	Numerical Problems; Basic concept of production study; Techniques of Work Measurement; Ratio delay study; Synthesis from standard data; Analytical estimating and Predetermined Motion Time System (PMTS)
	3rd	
7th	1st	Introduction; Major functions of Production Planning and Control; Preplanning; Methods of forecasting; Routing and Scheduling; Dispatching and Controlling
	2nd	
	3rd	Concept of Critical Path Method (CPM); Types of Production: Mass Production, Batch Production and Job Order Production
8th	1st	
	2nd	Characteristics; Economic Batch Quantity (EBQ); Principles of Product and Process Planning; Make or Buy decision; Numerical problems
	3rd	
9th	1st	Definition; Objectives; Types of Inspection: First piece, Floor and Centralized Inspection; Advantages and Disadvantages
	2nd	Statistical Quality Control; Types of Measurements; Method of Variables; Method of Attributes; Uses of X, R, p and c charts; Operating Characteristics curve (O.C curve)
	3rd	

10th	1st	Sampling Inspection; Single and Double Sampling plan; Concept of ISO 9001:2008 Quality Management System Registration/Certification
	2nd	procedure; Benefits of ISO to the organization
	3rd	Definition of Management; Administration; Organization; F.W. Taylor's and Henry Fayol's Principles of Management; Functions of Manager
11th	1st	
	2nd	Types of Organization: Line, Staff, Taylor's Pure functional types; Line and staff and committee type; Directing; Leadership; Styles of Leadership; Qualities of a good leader
	3rd	
12th	1st	Motivation; Positive and Negative Motivation; Modern Management Techniques; Just In Time; Total Quality Management (TQM); Quality circle; Zero defect concept; 5S Concept;
	2nd	Management Information Systems
	3rd	Responsibility of Human Resource Management; Selection Procedure; Training of Workers; Apprentice Training; On the Job training and Vestibule School Training; Job Evaluation and Merit Rating
13th	1st	Objectives and Importance; Wages and Salary Administration; Components of Wages; Wage Fixation; Type of Wage Payment: Halsey's
	2nd	50% Plan, Rowan's Plan and Emerson's efficiency plan; Numerical Problems
	3rd	Fixed and Working Capital; Resources of Capital; Shares Preference and Equity Shares; Debentures; Type of debentures; Public Deposits
14th	1st	
	2nd	Factory Costing: Direct Cost; Indirect Cost; Factory Overhead; Selling Price of a product; Profit; Numerical Problems; Depreciation; Causes; Methods: Straight line, sinking fund and percentage on Diminishing Value Method; Numerical Problems.
	3rd	
15th	1st	Objectives of good stock control system; ABC analysis of Inventory; Procurement and
	2nd	Consumption cycle; Minimum Stock, Lead Time, Reorder Level-Economic Order Quantity
	3rd	problems; Supply Chain.
 TEACHING FACULTY  HOD I/C		

LESSON PLAN		
Discipline : Mechanical Engg.	Semester : 5th	Name of the Teachnig Faculty : Mr Sarat Kumar Biswal
Subject: Power Plant Engineering	No.of days/Per weeks Class Alloted Weeks :3	Semester from date : 01.07.2026 To Date : 05.11.2026 No.of Weeks : 15
Weeks	Class day	Theory
1st	1st	Introduction to power plant; Indian Energy scenario in India
	2nd	
	3rd	
2nd	1st	Location of power plant; Choice of Power plant
	2nd	Classification of power plants, layout of thermal powerplant
	3rd	
3rd	1st	Terminology used in power plant: Peak load, Base load, Load factor, Load curve
	2nd	Various factor affecting the operation of power plant; Methods of meeting the fluctuating load in power plant
	3rd	
4th	1st	
	2nd	Load sharing- cost of power-tariff methods
	3rd	
5th	1st	Performance and operating
	2nd	characteristics of power plant
	3rd	Introduction to Hydroelectric power plant; Rainfall, Runoff and its measurement
6th	1st	
	2nd	
	3rd	Hydrograph, flow duration curve; Selection of sites for hydroelectric power plant
7th	1st	General layout of Hydroelectric power plant and its working; Classification of the Plant- Run off river plant, storage river plant
	2nd	pumped storage plant; Advantages and
	3rd	
8th	1st	disadvantages of hydroelectric power plant
	2nd	The layout of diesel power plant; Components and the working of diesel power plant; Advantages and disadvantages of diesel power plant
	3rd	
9th	1st	Gas turbine power Plant- Schematic diagram, components and its working
	2nd	
	3rd	Combined cycle power generation- Combined gas and steam turbine power plant operation (only flow diagram)
10th	1st	Introduction; Nuclear Power-Radio activity-Radioactive charge- types of reactions
	2nd	
	3rd	
11th	1st	Working of a nuclear power plant; Thermal fission Reactors
	2nd	
	3rd	PWR, BWR and gas cooled reactors; Advantages and Disadvantages of Nuclear power plant.
12th	1st	

	2nd	Social and Economical issues of power plant; Green house effect; Acid precipitation- Acid rain, Acid snow, Dry deposition
	3rd	
13th	1st	Acid fog; Air, water, Thermal pollution from power plants; Radiations from nuclear power plant effluents
	2nd	
	3rd	
14th	1st	Plant safety concept; Safety policy to be observed in power plants
	2nd	
	3rd	Safety practices to be observed in boiler operation; Safety in oil handling system
15th	1st	
	2nd	Safety in Chemical handling system; Statutory provision related to boiler operation
	3rd	
TEACHING FACULTY  HOD I/C		

LESSON PLAN		
Discipline : Mechanical Engg.	Semester : 5th	Name of the Teachnig Faculty : Mrs Puja Swain
Subject: Professional Skills	No.of days/Per weeks Class Alloted Weeks :3	Semester from date : 01.07.2026 To Date : 05.11.2026 No.of Weeks : 15
Weeks	Class day	Theory
1st	1st	Active listening
	2nd	
	3rd	Verbal and non-verbal communication
2nd	1st	Written communication
	2nd	
	3rd	Presentation skills
3rd	1st	
	2nd	Conflict resolution
	3rd	
4th	1st	Building trust within a team
	2nd	
	3rd	Effective collaboration strategies
5th	1st	Role delegation and responsibility sharing
	2nd	
	3rd	
6th	1st	Conflict resolution within a team
	2nd	Identifying root causes of issues
	3rd	
7th	1st	Generating solutions and evaluating options
	2nd	
	3rd	Decision-making under pressure
8th	1st	
	2nd	Critical thinking skills
	3rd	Triple constraint issues
9th	1st	Prioritization and task management
	2nd	
	3rd	
10th	1st	Setting realistic deadlines
	2nd	
	3rd	Effective time planning and organization
11th	1st	Self-awareness and emotional regulation
	2nd	
	3rd	Empathy and understanding others' emotions
12th	1st	Managing interpersonal relationships
	2nd	Motivation
	3rd	Social skills
13th	1st	Emotional Intelligence (EQ)
	2nd	Stress management
	3rd	
14th	1st	Workplace ethics and code of conduct
	2nd	
	3rd	Confidentiality and data privacy
15th	1st	Professional accountability
	2nd	
	3rd	Important Considerations
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