

कार्यालय प्राचार्य, छत्तीसगढ़ इंस्टीट्यूट ऑफ टेक्नोलॉजी जशपुर (छ.ग.)

ग्राम-झरगोंव, पोस्ट- घोलेंग, तह. जशपुर, जिला- जशपुर (छ.ग.) पिन कोड - 496338
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LESSON PLAN SESSION April-May 2025-26

SUBJECT: **Industrial Maintenance and Safety** SEMESTER: **6th**
 BRANCH: - **MECHANICAL ENGINEERING**

UNIT NUMBER	NAME OF THE TOPIC	NO OF CLASS REQUIRED	REMARK
Unit 1.0 Fundamentals of industrial maintenance	1.1 Definition and aim of maintenance engineering. 1.2 Primary and secondary functions and responsibility of Maintenance department	02	
	1.3 Types of maintenance –Preventive, Periodic, Predictive, Condition based monitoring 1.4 Types and applications of tools and equipments used for maintenance	03	
	1.5 Maintenance cost & its relation with replacement economy. 1.6 Service life of equipment.	02	
Unit 2.0 Preventive and Periodic Maintenance	2.1 Periodic maintenance –concept and need. 2.2 Degreasing, cleaning and repairing.	02	
	2.3 Preventive maintenance -concept, need, steps and advantages. 2.4 Maintenance and replacement schedules, Standard data for maintenance and replacement of parts	03	
	2.5 Steps/procedure for periodic and preventive maintenance of: i machine tools ii. Pumps. iii. Air compressors. iv. Diesel generating (DG) sets. 2.6 Repair cycle-concept and importance	02	
Unit 3.0 Wear and Corrosion	3.1 Basic fundamentals of friction and Wear 3.2 Wear Mechanism. 3.3 Wear- types, causes and their effects. 3.4 Wear reduction methods	02	
	3.5 Function, types and applications of Lubricants	02	
	3.6 General sketch, working and applications of Lubrication methods. Screw down grease cup a. Pressure grease gun. b. Splash lubrication. c. Gravity lubrication. d. Wick feed lubrication. e. Side feed lubrication. f. Ring lubrication	02	
	3.7 Definition, principle and factors affecting the corrosion. 3.8 Types of corrosion. 3.9 Corrosion prevention methods	02	
Unit 4.0 Fault tracing	4.1 Fault tracing-concept and importance. 4.2 Decision tree-concept, need and applications. 4.3 Sequence of fault finding activities, show as decision tree.	03	
	4.4 Draw decision tree for problems in machine tools, hydraulic, pneumatic, automotive, thermal and electrical equipment like: i. Pump ii. Air compressor. iii. Internal Combustion engine. iv. Boiler. v. Electrical motors.	02	
	4.5 Types of faults in machine tools and their general causes.	02	

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Unit 5.0 Recovery, Reconditioning and Retrofitting	5.1. Definition of recovery, reconditioning and retrofitting. 5.2. Methods of recovery and their applications.	02	
	5.3. Selection criteria of recovery methods. 5.4. Reconditioning -process, features and advantages. 5.5. Retrofitting - concept, need and applications	02	
	6.1 Need, Aim, Objective and Four E's of Industrial Safety. 6.2 Mechanical and electrical hazards-types, causes and preventive steps/procedure	03	
	6.3 Personal protective equipments, Survey the plant for locations and hazards 6.4 Education and training in safety, Prevention causes and cost of accident, Industrial psychology in accident prevention and Safety trials	02	
	6.5 Accident -causes, types, results and control, Accident reporting and Investigations. 6.6 Features of Factory Act, Introduction of Explosive Act, Boiler Act and ESI Act, Workman's compensation Act	02	
Unit 6.0 Industrial Safety and Safety Acts	6.7 Industrial hygiene and Occupational safety, Diseases prevention, Ergonomics, Occupational diseases, stress, fatigue, health Safety and the physical environment 6.8 Engineering methods of controlling chemical hazards, safety and the physical environment	02	
	6.9 Control of industrial noise and protection against it, Code and regulations for workersafety and health.	02	
	Total Class Required	45	

Subject I/C- PRANITA SORENG
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