

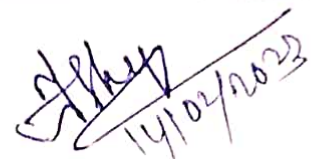
LESSON PLAN

Discipline : Mechanical Engg.	Semester : 6th	Name of the Teachnig Faculty : Mr. Pradeep Kumar Padhy		
Subject : INDUSTRIAL ENGINEERING & MANAGEMENT	No.of days/Per weeks Class Alloted Weeks :4	Semester from date : 14.02.2023 To Date : 23.05.2023	No.of Weeks : 15	
Weeks	Class day	Theory		
3rd (Feb-2023)	1st	Selection of Site of Industry		
	2nd	Concept of Plant Layout		
	3rd	objective and principles of plant layout		
	4th			
4th (Feb-2023)	1st	Process Layout, Product Layout and Combination Layout		
	2nd			
	3rd			Techniques to improve layout
	4th	Principles of material handling equipment		
1st (Mar-2023)	1st	Concept of Plant maintenance		
	2nd	Importance of plant maintenance.		
	3rd	Break down maintenance.		
	4th	Preventive maintenance.		
2nd (Mar-2023)	1st	Scheduled maintenance		
	2nd	Introduction to Operations Research and its applications		
	3rd	Linear Programming Problem,		
	4th	Solution of L.P.P. by graphical method		
3rd(Mar-2023)	1st	Problems sloved on L.P.P		
	2nd			
	3rd			
	4th	Evaluation of Project completion time by Critical Path Method and PERT		
4th (Mar-2023)	1st	Distinct features of PERT with respect to CPM		
	2nd			Simple Problems Discussed
	3rd			
	4th			
5th (Mar-2023)	1st	Classification of inventory		
	2nd	Objective of inventory control.		
	3rd	Describe the functions of inventories.		
	4th	Benefits of inventory control.		
1st (April)-2023)	1st	Costs associated with inventory.		
	2nd	Terminology in inventory control		
	3rd	Derivation on economic order quantity for Basic model		
	4th			
2nd April)-2023)	1st	Cocept and explanation of ABC Analysis		
	2nd			Simple Problems Discussed
	3rd			
	4th			
3rd (April)-2023)	1st	Inspection and Quality control		
	2nd	planning of inspection		
	3rd			
	4th			
4th (April)-2023)	1st	Types of Inspection		
	2nd			

	3rd	Advantages and disadvantages of quality control
	4th	Factors influencing the quality of manufacture
1st (May-2023)	1st	Concept of statistical quality control, Control charts (X, R, P and C - charts)
	2nd	Methods of attributes
	3rd	Problems on X,P,R & C Charts
	4th	
2nd (May-2023)	1st	Concept of ISO 9001-2008
	2nd	Quality management system, Registration /certification procedure
	3rd	Benefits of ISO to the organization
	4th	JIT, Six sigma, 7S, Lean manufacturing
3rd (May-2023)	1st	Introduction to Production Planning and Control
	2nd	Major functions of production planning and control
	3rd	Methods of forecasting, Routing, Scheduling
	4th	Dispatching, Controlling
4th (May-2023)	1st	Types of production
	2nd	Mass Production, Batch Production, Job order Production
	3rd	Principles of product and process planning
	4th	Revision & Previous Year Question Paper Discussion



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Discipline : Mechanical Engg.	Semester : 6th	Name of the Teachnig Faculty : Mr. Piyush Bhusan Dash
Subject : AUTOMOBILE ENGINEERING & HYBRID VEHICLES	No.of days/Per weeks Class Alloted Weeks :4	Semester from date : 14.02.2023 To Date : 23.05.2023 No.of Weeks : 15
Weeks	Class day	Theory
3rd (Feb-2023)	1st	INTRODUCTION & TRANSMISSION SYSTEM:
	2nd	Automobiles: Definition, need and classification
	3rd	Clutch System: Need, Types (Single & Multiple) and Working principle with sketch
	4th	
4th (Feb-2023)	1st	Gear Box: Purpose of gear box, Construction and working of a 4 speed gear box
	2nd	
	3rd	Concept of automatic gear changing mechanisms
	4th	Propeller shaft: Constructional features
1st (Mar-2023)	1st	Differential: Need, Types and Working principle
	2nd	
	3rd	Layout of automobile chassis with major components (Line diagram)
	4th	BRAKING SYSTEM:
2nd (Mar-2023)	1st	Braking systems in automobiles: Need and types
	2nd	Mechanical Brake in detail
	3rd	
	4th	Hydraulic Brake
3rd(Mar-2023)	1st	Air Brake and Air assisted Hydraulic brake
	2nd	
	3rd	
	4th	Vacuum Brake
4th (Mar-2023)	1st	IGNITION & SUSPENSION SYSTEM:
	2nd	Describe the Battery ignition and Magnet ignition system
	3rd	
	4th	
5th (Mar-2023)	1st	Spark plugs: Purpose, construction and specifications
	2nd	State the common ignition troubles and its remedies
	3rd	Description of the conventional suspension system for Rear and Front axle
	4th	
1st (April)-2023)	1st	Description of independent suspension system used in cars (coil spring and tension bars)
	2nd	
	3rd	
	4th	
2nd April)-2023)	1st	Constructional features and working of a telescopic shock absorber
	2nd	COOLING AND LUBRICATION:
	3rd	Engine cooling: Need and classification
	4th	Describe defects of cooling and their remedial measures
3rd (April)-2023)	1st	
	2nd	Describe the Function of lubrication
	3rd	Describe the lubrication System of I.C. engine
	4th	
4th (April)-2023)	1st	FUEL SYSTEM:

	2nd	Describe Air fuel ratio
	3rd	
	4th	Describe Carburetion process for Petrol Engine
1st (May-2023)	1st	Describe Multipoint fuel Injection system for Petrol Engine
	2nd	Describe the working principle of fuel injection system for multi cylinder Engine 5.5 Filter for Diesel engine
	3rd	
	4th	
2nd (May-2023)	1st	Describe the working principle of Fuel feed pump and Fuel Injector for Diesel engine
	2nd	
	3rd	ELECTRIC AND HYBRID VEHICLES:
	4th	Introduction, Social and Environmental importance of Hybrid and
3rd (May-2023)	1st	Description of Electric Vehicles, operational advantages, present performance and applications of Electric Vehicles
	2nd	
	3rd	Battery for Electric Vehicles, Battery types and fuel cells
	4th	Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series, Parallel and Series configurations
4th (May-2023)	1st	Series Configurations
	2nd	Drive train
	3rd	Solar powered vehicles
	4th	Revision Classes

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Discipline : Mechanical Engg.	Semester : 6th	Name of the Teachnig Faculty : Miss. Tapati Panigrahy
Subject : POWER STATION ENGINEERING	No.of days/Per weeks Class Alloted Weeks :4	Semester from date : 14.02.2023 To Date : 23.05.2023 No.of Weeks : 15
Weeks	Class day	Theory
3rd (Feb-2023)	1st	INTRODUCTION:
	2nd	Describe sources of energy.
	3rd	Explain concept of Central and Captive power station.
	4th	Classify power plants.
4th (Feb-2023)	1st	Importance of electrical power in day today life.
	2nd	Overview of method of electrical power generation.
	3rd	THERMAL POWER STATIONS:
	4th	Layout of steam power stations.
1st (Mar-2023)	1st	Steam power cycle.
	2nd	Explain Carnot vapour power cycle with P-V
	3rd	, T-s diagram and determine thermal efficiency.
	4th	
2nd (Mar-2023)	1st	Explain Rankine cycle with P-V, T-S & H-s diagram
	2nd	Explaining the processes from the P-V, T-s Diagram
	3rd	, T-s diagram and determine thermal efficiency.
	4th	
3rd(Mar-2023)	1st	Plotting various processes on PV, TS diagram
	2nd	determine thermal efficiency, Work done ,work ratio, and specific
	3rd	
	4th	Solve Simple Problems.
4th (Mar-2023)	1st	List of thermal power stations in the state with their capacities.
	2nd	Boiler Accessories: Operation of Air pre heater, Operation of Economiser
	3rd	Operation Electrostatic precipitator and Operation of super heater
	4th	Need of boiler mountings and operation of boiler
5th (Mar-2023)	1st	Draught systems (Natural draught, Forced draught & balanced draught) with their advantages & disadvantages.
	2nd	Steam prime movers: Advantages & disadvantages of steam turbine.
	3rd	Elements of steam turbine, governing of steam turbine. Performance of steam turbine
	4th	Explain Thermal efficiency, Stage efficiency and Gross efficiency
1st (April)-2023)	1st	Steam condenser: Function of condenser, Classification of condenser.
	2nd	function of condenser auxiliaries such as hot well
	3rd	condenser extraction pump, air extraction pump, and circulating pump.
	4th	Cooling Tower: Function and types of cooling tower, and spray ponds
2nd April)-2023)	1st	Selection of site for thermal power stations.
	2nd	NUCLEAR POWER STATIONS:
	3rd	Classify nuclear fuel (Fissile & fertile material)
	4th	Explain fusion and fission reaction.

3rd (April)-2023	1st	Explain working of nuclear power plants with block diagram .
	2nd	Explain the working and construction of nuclear reactor .
	3rd	Compare the nuclear and thermal plants.
	4th	Explain the disposal of nuclear waste.
4th (April)-2023	1st	Selection of site for nuclear power stations.
	2nd	List of nuclear power stations.
	3rd	DIESEL ELECTRIC POWER STATIONS:
	4th	State the advantages and disadvantages of diesel electric power stations.
1st (May-2023)	1st	Explain briefly different systems of diesel electric power stations: Fuel storage and fuel supply system system.
	2nd	DIESEL ELECTRIC POWER STATIONS contd.
	3rd	Fuel injection system, Air supply system, cooling system
	4th	Lubrication system, Exhaust system
2nd (May-2023)	1st	starting system, governing and selection of site
	2nd	Selection of site for diesel electric power stations.
	3rd	Performance and thermal efficiency of diesel electric power stations
	4th	HYDEL POWER STATIONS:
3rd (May-2023)	1st	State advantages and disadvantages of hydroelectric power plant.
	2nd	Classify and explain the general arrangement of storage type hydroelectric project and explain its operation.
	3rd	Operation of hydroelectric project
	4th	Selection of site of hydel power plant in the state
4th (May-2023)	1st	Types of turbines and generation used.
	2nd	Simple problems.
	3rd	GAS TURBINE POWER STATIONS: Selection of site for gas turbine stations.
	4th	Fuels for gas turbine, Elements of simple gas turbine power plants, Merits, demerits and application of gas turbine power plants


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Discipline : Mechanical Engg.	Semester : 6th	Name of the Teachnig Faculty : Mr. Nilamadhaba Sabat
Subject : Advance Manufacturing Process	No.of days/Per weeks Class Alloted Weeks : 4	Semester from date : 14.02.2023 To Date : 23.05.2023 No.of Weeks : 15
Weeks	Class day	Theory
3rd (Feb-2023)	1st	Modern Machining Processes Introduction and comparison with traditional machining.
	2nd	Ultrasonic Machining: principle
	3rd	Description of equipment,working procedure of USM.
	4th	applications and advantages ,disadvantages
4th (Feb-2023)	1st	Electric Discharge Machining: Principle, Description of equipment
	2nd	tools (electrodes), Process parameters. Output characteristics
	3rd	working procedure of EDM
	4th	applications and advantages ,disadvantages
1st (Mar-2023)	1st	Wire cut EDM: Principle, Description of equipment,
	2nd	controlling parameters;applications, advantages ,disadvantages
	3rd	Abrasive Jet Machining: principle, description of equipment,
	4th	working procedure of AJM
2nd (Mar-2023)	1st	Material removal rate,applications and advantages ,disadvantages
	2nd	Laser Beam Machining: principle, description of equipment
	3rd	working procedure of LBM
	4th	Material removal rate,applications and advantages ,disadvantages
3rd(Mar-2023)	1st	Electro Chemical Machining: principle, description of equipment
	2nd	working procedure of ECM
	3rd	Material removal rate
	4th	applications and advantages ,disadvantages
4th (Mar-2023)	1st	Plasma Arc Machining – principle, description of equipment
	2nd	working procedure of PAM
	3rd	Material removal rate,Process parameters
	4th	performance characterization,applications and advantages ,disadvantages
5th (Mar-2023)	1st	Electron Beam Machining - principle, description of equipment
	2nd	working procedure of EBM
	3rd	Material removal rate,Process parameters
	4th	performance characterization,applications and advantages ,disadvantages
1st (April)-2023)	1st	Processing of plastics
	2nd	Moulding processes:
	3rd	Injection moulding
	4th	Compression moulding
2nd April)-2023)	1st	Transfer moulding
	2nd	Extruding;

	3rd	Casting
	4th	Calendering.
3rd (April)-2023)	1st	Fabrication methods
	2nd	Sheet forming
	3rd	Blow moulding,
	4th	Laminating plastics (sheets, rod& tubes)
4th (April)-2023)	1st	Reinforcing.
	2nd	Applications of Plastics.
	3rd	Additive Manufacturing Process:Introduction, Need for Additive Manufacturing
	4th	Fundamentals of Additive Manufacturing, AM Process Chain
1st (May-2023)	1st	Advantages and Limitations of AM, Commonly used Terms
	2nd	Classification of AM process, Fundamental Automated Processes
	3rd	Fundamental Automated Processes
	4th	Distinction between AM and CNC.other related technologies.
2nd (May-2023)	1st	Application –Application in Design, Aerospace Industry, Automotive Industry,
	2nd	Jewelry Industry, Arts and Architecture. RP Medical and Bioengineering Applications.
	3rd	Web Based Rapid Prototyping Systems, Concept of Flexible manufacturing process
	4th	concurrent engineering, production tools like capstan and turret lathes
3rd (May-2023)	1st	production tools like capstan and turret lathes, capstan and turret lathes difference
	2nd	rapid prototyping processes., Special Purpose Machines (SPM):concepts
	3rd	General elements of SPM, Productivity improvement by SPM
	4th	Productivity improvement by SPM, Principles of SPM design.
4th (May-2023)	1st	Maintenance of Machine Tools-types, Repair cycle analysis, Repair complexity
	2nd	Maintenance manual, Maintenance records,
	3rd	Introduction to Total Productive Maintenance (TPM).
	4th	Housekeeping


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