DISCIPLINE	SEMESTER	NAME OF THE TEACHING FACULTY
MECHANICAL ENGG.	6th	SRI. SAGAR KUMAR BEHERA,LECT.,MECH.

SUBJECT:INDUSTRIAL ENGG AND MANAGEMENT.	NO. OF DAYS PER WEEK CLASS ALLOTED:	SEMESTER FROM 16/01/2024 NO. OF WEEKS : 16 NOS.

WEEKS	CLASS DAYS	THEORY TOPICS
1ST WEEK	1ST	Selection of Site of Industry
	2ND	Define plant layout.
	3RD	Describe the objective and principles of plant layout
	4TH	Explain Process Layout, Product Layout
2NDWEEK	1ST	Explain Combination Layout
	2ND	Techniques to improve layout.
	3RD	Principles of material handling equipment,Plant Maintenance
	4TH	Importance of plant maintenance
3RDWEEK	1ST	Break down maintenance, Preventive maintenance
	2ND	Scheduled maintenance
	3RD	Introduction to Operations Research and its applications
	4TH	Define Linear Programming Problem
4THWEEK	1ST	DO
	2ND	Solution of L.P.P. by graphical method.
	3RD	DO
	4TH	Evaluation of Project completion time by Critical Path Method and PERT
5THWEEK	1ST	DO
	2ND	Simple Problems on Above
	3RD	Explain distinct features of PERT with respect to CPM.
	4TH	DO
6THWEEK	1ST	Classification of inventory
	2ND	Objective of inventory control
	3RD	Describe the functions of inventories.
	4TH	Benefits of inventory control
7THWEEK	1ST	Costs associated with inventory.
	2ND	Terminology in inventory control
	3RD	Explain and Derive economic order quantity for Basic model
	4TH	DO
8TH WEEK	1ST	Numericals on above
	2ND	Define and Explain ABC analysis.
	3RD	Define Inspection and Quality control
	4TH	Describe planning of inspection
9THWEEK	1ST	Describe types of inspection.
	2ND	Advantages and disadvantages of quality control.
	3RD	Study of factors influencing the quality of manufacture.
	4TH	Explain the Concept of statistical quality control, Control charts (X, R,P and C - charts).
10THWEEK	1ST	Methods of attributes
	2ND	Concept of ISO 9001-2008.
	3RD	Quality management system, Registration /certification procedure.
	4TH	Benefits of ISO to the organization.
11THWEEK	1ST	JIT, Six sigma,
	2ND	7S, Lean manufacturing
	3RD	Solve related problems
	4TH	DO
12THWEEK	1ST	DO
	2ND	INTRODUCTION ON PRODUCTION PLANNING AND CONTROL
	3RD	Major functions of production planning and control
	4TH	Methods of forecasting
13THWEEK	1ST	Routing
	2ND	Scheduling
	3RD	Dispatching
	4TH	Controlling
14THWEEK	1ST	Types of production
	2ND	Mass production
	3RD	Batch production
	4TH	Job order production
15THWEEK	1ST	Principles of product and process planning.
	2ND	DO
	3RD	DO
	4TH	DO

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DISCIPLINE	SEMESTER	NAME OF THE TEACHING FACULTY
MECHANICAL ENGG.	6th	SRI. PITABAS TRIPATHY,GF,MECH.
SUBJECT:AUTOMOBILE ENGG.	NO. OF DAYS PER WEEK CLASS ALLOTED:	SEMESTER FROM 16/01/2024 NO. OF WEEKS : 16 NOS.

WEEKS	CLASS DAYS	THEORY TOPICS
1ST WEEK	1ST	Automobiles: Definition, need and classification
	2ND	Layout of automobile chassiswith major components (Line diagram)
	3RD	Clutch System: Need, Types (Single & Multiple)
	4TH	Working principle Of Clutch with sketch
2NDWEEK	1ST	3 Gear Box: Purpose of gear box
	2ND	Construction and working of a 4 speed gear box
	3RD	Concept of automatic gear changing mechanisms
	4TH	Propeller shaft: Constructional features
3RDWEEK	1ST	DO
	2ND	Need of Differential
	3RD	Types of Differential
	4TH	Working Principle of Differential
4THWEEK	1ST	Braking systems in automobiles: Need and types
	2ND	Mechanical Brake
	3RD	Air assisted Hydraulic Brake
	4TH	Vacuum Brake
5THWEEK	1ST	Hydraulic Brake
	2ND	Describe the Battery ignition
	3RD	Magnet ignition system
	4TH	Specifications of Spark plug
6THWEEK	1ST	common ignition troubles of spark plug
	2ND	Remedies of spark plug
	3RD	Description of the conventional suspension system for Rear and Front axle
	4TH	Description of independent suspension system used in cars (coil spring and tensionbars)
7THWEEK	1ST	Constructional features and working of a telescopic shock absorber
	2ND	DO
	3RD	DO
	4TH	Engine cooling: Need and classification
8TH WEEK	1ST	Describe defects of cooling
	2ND	Remedial Measures of Defects of cooling
	3RD	Describe the Function of lubrication
	4TH	Describe the lubrication System of I.C. engine
9THWEEK	1ST	DO
	2ND	DO
	3RD	DO
	4TH	Describe Air fuel ratio
10THWEEK	1ST	Describe Carburetion process for Petrol Engine
	2ND	Describe Multipoint fuel injection system for Petrol Engine
	3RD	Describe the working principle of fuel injection system for multi cylinder Engine
	4TH	Filter for Diesel engine
11THWEEK	1ST	Describe the working principle of Fuel feed pump
	2ND	Fuel Injector for Diesel
	3RD	DO
	4TH	DO
12THWEEK	1ST	DO
	2ND	Introduction Of Hybrid Vehicle
	3RD	Social and Environmental importance of Hybrid vehicle
	4TH	Social and Environmental importance of Electrical vehicle
13THWEEK	1ST	Description of Electric Vehicles
	2ND	operational advantages of Electric Vehicle
	3RD	present performance of Electric Vehicle
	4TH	applications of Electric Vehicles
14THWEEK	1ST	Battery for Electric Vehicles
	2ND	Battery types and fuel cells
	3RD	Hybrid vehicles, Types of Hybrid
	4TH	Electric Vehicles: Parallel, Series
15THWEEK	1ST	Parallel and series Configuration
	2ND	Drive train
	3RD	Solar powered vehicles
	4TH	Revision
16THWEEK	1ST	Revision
	2ND	Revision
	3RD	Revision
	4TH	Revision

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DISCIPLINE	SEMESTER	NAME OF THE TEACHING FACULTY
MECHANICAL ENGG.	6th	SRI. BIPIN KUMAR DASH,SR.LECT.,MECHANICAL

SUBJECT:POWER STATION ENGINEERING(TH-3)	NO. OF DAYS PER WEEK CLASS ALLOTED : 04	SEMESTER FROM 16/01/2024
		NO. OF WEEKS : 16 NOS.

WEEKS	CLASS DAYS	THEORY TOPICS
1ST WEEK	1ST	INTRODUCTION TO POWER PLANT ENGINEERING
	2ND	DESCRIBE SOURCES OF ENERGY, LOAD CURVE
	3RD	EXPLAIN CONCEPT OF CAPTIVE AND CENTRAL POWER PLANT
	4TH	CLASSIFY POWER PLANT, PERFORMANCE PARAMETERS
2NDWEEK	1ST	IMPORTANCE OF ELECTRICAL POWER IN DAY TODAY LIFE,OVERVIEW METHOD OF ELECTRICAL
	2ND	LAYOUT OF STEAM POWER PLANT, BASIC CONCEPT
	3RD	STEAM POWER CYCLE,CARNOT VAPOUR POWER CYCLE(P-V,T-S,H-S DIAGRAM),THERMAL EFFICIENCY
	4TH	RANKINE CYCLE(P-V,T-S,H-S DIAGRAM), THERMAL EFFICIENCY
3RDWEEK	1ST	WORK DONE, WORK RATIO, SPECIFIC STEAM CONSUMPTION
	2ND	NUMERICAL PROBLEMS BASED ON RANKINE CYCLE
	3RD	REHEAT CYCLE AND RELATED NUMERICAL PROBLEMS
	4TH	REGENERATIVE CYCLE AND RELATED NUMERICAL PROBLEM
4THWEEK	1ST	COMBINATION OF REHAET AND REGENERATIVE CYCLE
	2ND	LIST OF THERMAL POWER STATIONS IN THE STATE WITH THEIR CAPACITIES,BOILER MOUNTINGS
	3RD	AIR PREHEATER, ECONOMISER, ESP, SUPERHEATER.
	4TH	DRAUGHT SYSTEM, ADVANTAGES AND DISADVANTAGES
5THWEEK	1ST	PERFORMANCE OF STEAM TURBINEAND EFFICIENCY
	2ND	NUMERICAL PROBLES ON STEAM TURBINE
	3RD	STEAM CONDENSER, CLASSIFICATION ON STEAM TURBINE
	4TH	JET AND SURFACE CONDENSER AND AUXILIARIES
6THWEEK	1ST	FUNCTION AND TYPES OF COOLING TOWER (CT)
	2ND	NATURAL DRAFT COOLING TOWER AND MECHANICAL DRAFT CT
	3RD	CONCEPT OF NUCLEAR FUSSION AND FISSION REACTION
	4TH	CLASSIFICATION OF NUCLEAR FUEL, NUCLEAR REACTOR
7THWEEK	1ST	NUCLEAR REACTOR, MODERATOR, REFLECTOR, SHIELDING
	2ND	REACTOR VESSEL, COOLANT, CONTROL ROD, LINE DIAGRAM
	3RD	WORKING PRINCIPAL OF PWR
	4TH	WORKING PRINCIPAL OF BWR
8THWEEK	1ST	WORKING PRINCIPLE OF BWR
	2ND	DIFFERENCE BETWEEN PWR AND BWR
	3RD	COMPARISON BETWEEN NUCLEAR AND THERMAL POWER PLANT
	4TH	NUCLEAR WASTE DISPOSAL
9THWEEK	1ST	REVISION OF THERMAL POWER PLANT
	2ND	REVISION OF NUCLEAR POWER PLANT
	3RD	INTRODUCTION OF DIESEL ENGINE POWER PLANT (DEPP)
	4TH	CONSTRUCTION AND WORKING PRINCIPLE OF DEPP
10THWEEK	1ST	ADVANTAGE AND DISADVANTAGE OF DEPP
	2ND	DIFFERENT SYSTEM OF DIESEL POWER PLANT
	3RD	DIFFERENT SYSTEM OF DIESEL POWER PLANT
	4TH	FUEL STORAGE AND FUEL SUPPLY SYSTEM
11THWEEK	1ST	LUBRICATION SYSTEM, STARTING SYSTEM
	2ND	STARTING SYSTEM
	3RD	GOVERNING SYSTEM
	4TH	REVISION OF DIESEL ENGINE POWER PLANT
12THWEEK	1ST	INTRODUCTION TO HYDROELECTRIC POWER PLANT
	2ND	DIFFERENT COMPONENT OF HYDROELECTRIC POWER PLANT
	3RD	DIFFERENT COMPONENT OF HYDROELECTRIC POWER PLANT
	4TH	ADVANTAGE AND DISADVANTAGE OF HYDROELECTRIC POWER PLANT
13THWEEK	1ST	WORKING PRINCIPLE OF HYDROELECTRIC POWER PLANT
	2ND	REVISION OF HYDROELECTRIC POWER PLANT
	3RD	GAS TURBINE POWER STATION,SELECTION OF SITE
	4TH	FUEL FOR GAS TURBINE,ELEMENTS OF SIMPLE GAS TURBINE POWER PLANT
14THWEEK	1ST	MERITS,DEMERITS,APPLICATION OF GAS TURBINE POWER PLANT
	2ND	REVISION OF CHAPTER-1
	3RD	REVISION OF CHAPTER-2
	4TH	REVISION OF CHAPTER-2
15THWEEK	1ST	REVISION OF CHAPTER-2
	2ND	REVISION OF CHAPTER-3
	3RD	REVISION OF CHAPTER-4
	4TH	REVISION OF CHAPTER-5
16THWEEK	1ST	SAMPLE SET PRACTICE AND DOUBT CLEAR CLASS
	2ND	SAMPLE SET PRACTICE AND DOUBT CLEAR CLASS
	3RD	SAMPLE SET PRACTICE AND DOUBT CLEAR CLASS
	4TH	SAMPLE SET PRACTICE AND DOUBT CLEAR CLASS

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DISCIPLINE	SEMESTER	NAME OF THE TEACHING FACULTY
MECHANICAL ENGG.	6th	SRI. SAKTI RANJAN BHUYAN

SUBJECT:ADVANCED MANUFACTURING PROCESS.	NO. DAYS PER WEEK CLASS ALLOTED:04	SEMESTER FROM 16/01/2024
		NO.OF WEEKS :16 NOS.

WEEKS	CLASS DAYS	THEORY TOPICS
1ST WEEK	1ST	INTRODUCTION TO CAD-CAM LAB
	2ND	DESCRIBE VARIOUS NON TRADITIONAL MANUFACTURING PROCESS
	3RD	ELECTRO CHEMICAL MACHINING PROCESS
	4TH	ELECTRO CHEMICAL MACHINING PROCESS
2NDWEEK	1ST	ELECTRO CHEMICAL MACHINING PROCESS
	2ND	ELECTRO DISCHARGE MACHINING PROCESS
	3RD	-DO-
	4TH	-DO-
3RDWEEK	1ST	PLASMA ARC MACHINING PROCESS
	2ND	-DO-
	3RD	-DO-
	4TH	LASER BEAM MACHINING PROCESS
4THWEEK	1ST	-DO-
	2ND	-DO-
	3RD	ABRASIVE JET MACHINING PROCESS
	4TH	-DO-
5THWEEK	1ST	-DO-
	2ND	ELECTRON BEAM MACHINING PROCESS
	3RD	-DO-
	4TH	-DO-
6THWEEK	1ST	REVISION OF CHAPTER-1
	2ND	REVISION OF CHAPTER-1
	3RD	REVISION OF CHAPTER-1
	4TH	CONCEPT OF AUTOMATION
7THWEEK	1ST	TYPES OF AUTOMATION AND EXPLANATION
	2ND	DESCRIPTION OF VARIOUS TYPES OF AUTOMATION
	3RD	NEED OF AUTOMATION
	4TH	CONCEPTOF NUMERICAL CONTROL (NC)
8THWEEK	1ST	NC SYSTEM WITH BLOCK DIAGRAM
	2ND	EXPLANATION OF NC SYSTEM WITH BLOCK DIAGRAM
	3RD	DESCRIPTION OF TYPES OF NC CO-ORDINATE
	4TH	EXPLANATION OF POINT-TO-POINT NC CO-ORDINATE
9THWEEK	1ST	EXPLANATION OF STRAIGHT CUT NC CO-ORDINATE
	2ND	EXPLANATION OF CONTOURING
	3RD	CONCEPT OF NC PART PROGRAMMING
	4TH	G-CODE
10THWEEK	1ST	M-CODE
	2ND	DIFFERNCE BETWEEN G-CODE AND M-CODE
	3RD	REFERENCE POINT (MACHINE ZERO, WORK ZERO)
	4TH	REFERENCE POINT (TOOL ZERO, TOOL OFFICE)
11THWEEK	1ST	SIMPLE PART PROGRAM FOR LATHE
	2ND	EXPLAIN THE EXTENSION OF NC WITH BLOCK DIAGRAM
	3RD	DNC
	4TH	CNC, DIFFERNCE BETWEEN DNC AND CNC
12THWEEK	1ST	ADAPTIVE CONTROL
	2ND	APPLICATION OF ROBOTS
	3RD	EXPLAIN ROBOT ANATOMY
	4TH	DESCRIBE ROBOT CONFIGURATION
13THWEEK	1ST	DESCRIPTION OF VARIOUS TYPES OF AUTOMATION
	2ND	EXPLANATION OF NC SYSTEM WITH BLOCK DIAGRAM
	3RD	INTRODUCTION TO FLEXIBLE MANUFACTURING SYSTEM
	4TH	NEED FOR FMS
14THWEEK	1ST	EXPLAIN THE COMPONENTS OF FMS, PROCESSING STATION
	2ND	MATERIAL HANDLING AND STORAGE AND COMPUTER CONTROL SYSTEM
	3RD	REVISION OF FMS
	4TH	DEFINE CAD, CAM SOFTWARE AND HARDWARE
15THWEEK	1ST	EXPLAIN BENEFITS OF CAD, CAM SOFTWARE AND HARDWARE
	2ND	BENEFITS OF CAM
	3RD	DIFFERENTIATION BETWEEN CAD AND CAM
	4TH	EXPLAIN THE CONCEPT
16THWEEK	1ST	SOFTWARE AND HARDWARE OF CIM
	2ND	REVISION CLASS
	3RD	REVISION CLASS
	4TH	REVISION CLASS

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