LESSON PLAN 2023-24

SUBJECT :INDUSTRIAL ENGINEERING & MANAGEMENT (6TH SEM)

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Class No.	Topic	Subtopics	Teaching Aids/Activities
1–2	Introduction to IEM	Importance in automobile engineering; Objective of the course	Lecture, Presentation
3–4	Plant Engineering	Site selection, definition, objectives & principles of plant layout	Charts, Diagrams, Case Study
5–6	Plant Layout Types	Process, Product, Combination Layout	Layout Diagrams, Comparative Tables
7–8	Improving Plant Layout	Techniques for layout improvement, Material handling principles	Activity: Case layout improvement, Videos
9	Plant Maintenance – Basics	Importance, types of maintenance	Lecture, Maintenance log examples
10	Maintenance Types	Breakdown, Preventive, Scheduled maintenance	Group Discussion, Real-life case examples
11	Operations Research – Intro	Definition, Applications in IEM	Real-life Applications, Flow Diagrams
12–14	Linear Programming	LPP basics, formulation, constraints, graphical method	Solve LPP problems, Graph sheets
15–17	CPM and PERT	Network diagrams, project completion time, comparison of CPM & PERT	Case problem solving, Charts
18	OR Review & Assignment	Problem-solving session & doubts	Assignment, Group activity
19–20	Inventory Control – Intro	Definition, Classification, Functions, Objectives	Inventory flow charts, Real examples
21–22	Inventory Costs & Benefits	Holding, Ordering, Shortage costs	Cost analysis charts
23–24	EOQ Model	EOQ formula, derivation, numerical problems	Solve EOQ numericals
25	ABC Analysis	Classification, benefits	Pie chart, Group work
26	Inventory Case Study	Application in automobile industry	Case study analysis
27	Quality Control – Basics	Definition, Objectives, Quality vs Inspection	ISO video, Company policy documents
28–29	Planning of Inspection	Types, planning process, benefits	Visual aids, QC charts
30	Quality Control Techniques	Advantages, disadvantages	Debate, Group discussion
31–32	Factors Affecting Quality	Materials, machines, methods, environment	Brainstorming, Cause-effect diagrams
33–35	Statistical Quality Control	X, R, P, C charts – Construction & interpretation	Control chart exercises
36	Quality Attributes Methods	Attribute-based sampling and evaluation	Problem-solving activity

37	ISO 9001:2008 Overview	Concepts, Certification, Procedures	ISO templates, Real-life audits
38	ISO Benefits to Organization	Case studies, registration process	Guest lecture/Video from certified company
39	Modern Quality Techniques	JIT, Six Sigma, 7S, Lean manufacturing	Comparative analysis, Video demonstrations
40	QC Review	Recap & problem solving	Quiz, Assignment
41	Production Planning – Intro	Objectives, Importance in manufacturing	Flowcharts, Lecture
42–43	Forecasting Methods	Types & Techniques of forecasting	Case application, Graphs
44–45	Routing & Scheduling	Routing techniques, Scheduling processes	Flowchart examples, Software tools
46	Dispatching & Controlling	Tools & methods	Lecture, Interactive examples
47–48	Types of Production	Mass, Batch, Job order – Comparison	Video, Industry example
49–50	Product & Process Planning	Principles, practices	Group assignment, Charts
51	Mid-course Review	Summary of key topics	MCQ quiz, doubt clearing
52–55	Practice Problem Sessions	EOQ, LPP, CPM/PERT, SQC problems	Group problem solving
56	Case Study: Automobile Plant	Real-life plant layout and planning	Company video/virtual tour
57	Quality Control Project	Develop a sample QC plan for a product	Project assignment
58	ISO Project	Simulate ISO audit or procedure	Mock audit activity
59	Final Review Session	Summary of all 5 units, Q&A	Flashcards, Discussion
60	Internal Assessment	Assessment/Test + Feedback	Written test, Feedback form