

GOVT. POLYTECHNIC, NAYAGARH
3rd SEMESTER MECHANICAL ENGINEERING
LESSON PLAN (2026-27)

SUBJECT- Industrial Engineering and Management
NAME OF FACULTY: Mrs. Monalisa Sahoo, Sr. Lect.

TOTAL PERIODS-45
THEORY-3P/WEEK

W.E.F : 01/07/2026 to 05/11/2026

Sl. No.	Week	Day	Topics to be covered
1	1st	1st day	Plant Engineering: Plant; Selection of site of industry
		2nd day	Plant layout; Principles of good layout; Types of layout
		3rd day	Process, Product & Fixed position layouts; Techniques to improve layout
2	2nd	1st day	Material handling equipment: Principles and applications
		2nd day	Plant maintenance: Importance; Breakdown maintenance
		3rd day	Preventive maintenance and Scheduled maintenance
3	3rd	1st day	Plant Safety: Importance; Accident causes and cost
		2nd day	Accident proneness and prevention of accidents
		3rd day	Industrial disputes and settlement of disputes
4	4th	1st day	Collective bargaining; Conciliation
		2nd day	Mediation and Arbitration
		3rd day	Factories Act 1948: Health, Welfare and Safety provisions
5	5th	1st day	Work Study: Productivity; Standard of living
		2nd day	Methods of improving productivity
		3rd day	Objectives of work study; Good working conditions
6	6th	1st day	Method Study: Definition; Objectives
		2nd day	Selection of job; Procedure; Operation and flow process charts
		3rd day	Two-handed chart; Man-machine chart; String and flow diagram
7	7th	1st day	Work Measurement: Definition; Time study procedure
		2nd day	Rating factor and allowances
		3rd day	Standard time calculation and numerical problems
8	8th	1st day	Production study and work measurement techniques
		2nd day	Ratio delay study; Synthesis; PMTS
		3rd day	Production Planning and Control: Introduction and functions
9	9th	1st day	Forecasting methods
		2nd day	Routing and Scheduling
		3rd day	Dispatching; Controlling; CPM
10	10th	1st day	Types of Production; EBQ
		2nd day	Product and Process Planning
		3rd day	Make or Buy decision; Numericals

11	11th	1st day	Quality Control: Definition; Objectives
		2nd day	Inspection types; Advantages and disadvantages
		3rd day	Statistical Quality Control: Variables and Attributes
12	12th	1st day	X, R, p and c charts
		2nd day	O.C. curve; Sampling inspection
		3rd day	ISO 9001:2008 certification and benefits
13	13th	1st day	Principles of Management and Administration
		2nd day	Taylor's and Fayol's principles
		3rd day	Functions of manager; Types of organization
14	14th	1st day	Leadership and Motivation
		2nd day	JIT; TQM; Quality Circle; 5S; MIS
		3rd day	Personnel Management and HR responsibilities
15	15th	1st day	Training; Job Evaluation; Wage plans with numericals
		2nd day	Financial Management; Costing; Depreciation
		3rd day	Material Management; EOQ; Supply Chain; REVISION

REFERENCES:

1. Industrial Engineering & Management, S.C. Sharma, Khanan Book Publishing Co (P) Ltd., New Delhi
2. Industrial Engineering and Management, O.P. Khanna, Revised Edition, Dhanpat Rai Publications (P) Ltd., New Delhi – 110002.

24/10/22
Smt. Monalisa Sahoo
 Sr. Lect. (Mech)