

**GOVT. POLYTECHNIC, NAYAGARH**  
**LESSON PLAN**  
**6<sup>th</sup> SEMESTER MECHANICAL ENGINEERING (2024-25)**  
**SUBJECT-INDUSTRIAL ENGINEERING & MANAGEMENT**  
(w.e.f 04/02/2025)

**NAME OF FACULTY: MONALISA SAHOO (Sr. Lect.)**

**TOTAL PERIODS-60**  
**THEORY-4P/WEEK**

Sl No.	week	Day	Topics to be covered
1	1 <sup>st</sup>	1 <sup>st</sup> day	Describe the features governing plant location.
		2 <sup>nd</sup> day	Define plant layout
		3 <sup>rd</sup> day	Describe the objective and principles of plant layout.
		4 <sup>th</sup> day	Explain Process Layout, Product Layout
Sl No.	week	Day	Topics to be covered
2	2 <sup>nd</sup>	1 <sup>st</sup> day	Explain Combination Layout & Fixed position Layout
		2 <sup>nd</sup> day	Introduction to Operations Research and its applications
		3 <sup>rd</sup> day	Define Linear Programming Problem
		4 <sup>th</sup> day	Solution of L.P.P. by graphical method
Sl No.	week	Day	Topics to be covered
3	3 <sup>rd</sup>	1 <sup>st</sup> day	Numerical Problem Solving practice
		2 <sup>nd</sup> day	Evaluation of Project completion time by Critical Path Method
		3 <sup>rd</sup> day	Terms used in CPM with Network Diagram
		4 <sup>th</sup> day	PERT (Simple problems)- Explain distinct features of PERT with respect to CPM
Sl No.	week	Day	Topics to be covered
4	4 <sup>th</sup>	1 <sup>st</sup> day	Difference between PERT & CPM
		2 <sup>nd</sup> day	Expected time calculation of PERT with standard deviation chart
		3 <sup>rd</sup> day	Numerical Problem practice on PERT & CPM
		4 <sup>th</sup> day	Introduction to Inventory Control
Sl No.	week	Day	Topics to be covered
5	5 <sup>th</sup>	1 <sup>st</sup> day	Classification of inventory.



		2 <sup>nd</sup> day	Objective of inventory control.
		3 <sup>rd</sup> day	Describe the functions of inventories and Benefits of inventory control.
		4 <sup>th</sup> day	Costs associated with inventory
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>
6	6 <sup>th</sup>	1 <sup>st</sup> day	Terminology in inventory control
		2 <sup>nd</sup> day	Explain and Derive economic order quantity for Basic model.
		3 <sup>rd</sup> day	Numericals on EOQ Model
		4 <sup>th</sup> day	Define and Explain ABC analysis.
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>
7	7 <sup>th</sup>	1 <sup>st</sup> day	Describe the objectives of plant maintenance
		2 <sup>nd</sup> day	Describe the duties, functions and responsibilities of plant maintenance department.
		3 <sup>rd</sup> day	Describe the types of maintenance: Preventive and Breakdown maintenance
		4 <sup>th</sup> day	Describe the types of Scheduled and Predictive maintenance.
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>
8	8 <sup>th</sup>	1 <sup>st</sup> day	Importance of plant maintenance
		2 <sup>nd</sup> day	Techniques to improve Plant layout.
		3 <sup>rd</sup> day	Principles of material handling equipment.
		4 <sup>th</sup> day	Revision and Discussions with doubt clearance
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>
9	9 <sup>th</sup>	1 <sup>st</sup> day	Define Inspection and Quality control.
		2 <sup>nd</sup> day	Describe planning of inspection
		3 <sup>rd</sup> day	Describe types of inspection
		4 <sup>th</sup> day	Advantages and disadvantages of quality control
<b>Sl No.</b>	<b>week</b>	<b>Day</b>	<b>Topics to be covered</b>
10	10 <sup>th</sup>	1 <sup>st</sup> day	Study of factors influencing the quality of manufacture
		2 <sup>nd</sup> day	Explain the Concept of statistical quality control, Control charts (X and R chart)
		3 <sup>rd</sup> day	Explain P and C charts



		4 <sup>th</sup> day	Numericals on Control chart practice
Sl No.	week	Day	Topics to be covered
11	11 <sup>th</sup>	1 <sup>st</sup> day	Methods of attributes
		2 <sup>nd</sup> day	Concept of ISO 9001-2008
		3 <sup>rd</sup> day	Quality management system, Registration /certification procedure.
		4 <sup>th</sup> day	Benefits of ISO to the organization
Sl No.	week	Day	Topics to be covered
12	12 <sup>th</sup>	1 <sup>st</sup> day	JIT, Six sigma, 7S, Lean manufacturing method
		2 <sup>nd</sup> day	Solve problems on above techniques
		3 <sup>rd</sup> day	Introduction to Production Planning and Control
		4 <sup>th</sup> day	Major functions of production planning and control
Sl No.	week	Day	Topics to be covered
13	13 <sup>th</sup>	1 <sup>st</sup> day	Methods of forecasting
		2 <sup>nd</sup> day	Routing procedure
		3 <sup>rd</sup> day	Scheduling and Dispatching procedure
		4 <sup>th</sup> day	Controlling procedure
Sl No.	week	Day	Topics to be covered
14	14 <sup>th</sup>	1 <sup>st</sup> day	Types of production
		2 <sup>nd</sup> day	Mass production
		3 <sup>rd</sup> day	Batch production
		4 <sup>th</sup> day	Job order production
Sl No.	week	Day	Topics to be covered
15	15 <sup>th</sup>	1 <sup>st</sup> day	Principles of product and process planning
		2 <sup>nd</sup> day	Principles of product and process planning
		3 <sup>rd</sup> day	Numerical Practice
		4 <sup>th</sup> day	Doubt clearance and Revision

12/2/25  
 03/02/25  
 Meel