

MOHAMMED SATHAK A J COLLEGE OF ENGINEERING

Siruseri IT park, OMR, Chennai - 603103

LESSON PLAN							
Department of Mechanical Engineering							
Name of the Subject	Production Planning and Control			Name of the handling Faculty	Mr.K.K.VINOTHKUMAR		
Subject Code	IE 8693			Year / Sem	IV/VIII		
Acad Year	2020-2021			Batch	2018-2022		
Course Objective							
*To understand the various components and functions of production planning and control such as work study, product planning, process planning, production scheduling, Inventory Control							
*To know the recent trends like manufacturing requirement Planning (MRP II) and Enterprise Resource Planning (ERP).							
Course Outcome							
CO1- Indentify production planning and control activities							
CO2- Discuss production planning and control activities such as Work Study and Time Study							
CO3-Analyze production planning & Process Planning activities							
CO4-Analyze Various techniques							
CO5- Plan manufacturing requirements planning and enterprise resource planning (ERP).							
Lesson Plan							
Sl. No.	Topic(s)	T / R*	Periods Required	Mode of Teaching (BB / PPT / NPTEL / MOOC / etc)	Blooms Level L6) (L1-	CO	PO
		Book					
UNIT I INTRODUCTION TO PROCESS PLANNING							
1	Objectives and benefits of planning and control	T1	1	BB/PPT	L1	CO1	PO1,PO2
2	Functions of production control	T1	1	BB/PPT	L1	CO1	PO1,PO2
3	Types of production job- batch and continuous	T1	1	BB/PPT	L2	CO1	PO1,PO2
4	Product development and design-Marketing aspect	T1	1	BB/PPT	L3	CO1	PO1,PO2
5	Functional aspects- Operational aspect	T1	1	BB/PPT	L2	CO1	PO1,PO2
6	Durability and dependability aspect aesthetic aspect	T1	1	BB/PPT	L2	CO1	PO1,PO2
7	Profit consideration- Standardization	T1	1	BB/PPT	L2	CO1	PO1,PO2
8	Simplification & specialization	T1	1	BB/PPT	L2	CO1	PO1,PO2
9	Break even analysis- Economics of a new design.	T1	1	BB/PPT	L3	CO1	PO1,PO2 , PO11
Suggested Activity: Assignment / Case Studies / Tuorials/ Quiz / Mini Projects / Model Developed/others Planned if any studies given , Assignment given							*case
Evaluation method based evaluated for Assignments and Direct interaction during Tutorials							*Marks
UNIT II Process Planning Activities							
10	Method study, basic procedure	T1	1	BB/PPT	L2	CO2	PO1,PO2 , PO11

11	Selection of process	T1	1	BB/PPT	L2	CO2	PO1,PO2, PO11
12	Critical analysis, Development - Implementation	T1	1	BB/PPT	L2	CO2	PO1,PO2, PO11
13	Micro motion and memo motion study	T1	1	BB/PPT	L2	CO2	PO1,PO2, PO11
14	Work measurement - Techniques of work measurement	T1	1	BB/PPT	L2	CO2	PO1,PO2, PO11
15	Time study - Production study	T1	1	BB/PPT	L2	CO2	PO1,PO2, PO11
16	Work sampling - Synthesis from standard data	T1	1	BB/PPT	L2	CO2	PO1,PO2, PO11
17	Predetermined motion time standards.	T1	1	BB/PPT	L2	CO2	PO1,PO2, PO11
18	Recording of process	T1	1	BB/PPT	L2	CO2	PO1,PO2, PO11

Suggested Activity: Assignment / Case Studies / Tuorials/ Quiz / Mini Projects / Model Developed/others Planned if any *case studies given , Assignment given

Evaluation method *Marks based evaluated for Assignments and Direct interaction during Tutorials

UNIT III Introduction to Cost Estimation

19	Product planning- Introduction	T1	1	BB / PPT	L1	CO3	PO2,P07
20	Extending the original product information	T1	1	BB / PPT	L1	CO3	PO2,P07
21	Value analysis-Problems in lack of product planning	T1	1	BB / PPT	L3	CO3	PO2,P07
22	Process planning and routing	T1	1	BB / PPT	L1	CO3	PO2,P07
23	Pre requisite information needed for process planning	T1	1	BB / PPT	L1	CO3	PO2,P07
24	Steps in process planning	T1	1	BB / PPT	L1	CO3	PO2,P07
25	Quantity determination in batch production	T1	1	BB / PPT	L2	CO3	P07
26	Machine capacity, balancing	T1	1	BB / PPT	L2	CO3	PO2,P07
27	Analysis of process capabilities in a multi product system.	T1	1	BB / PPT	L2	CO3	PO2,P07

Suggested Activity: Assignment / Case Studies / Tuorials/ Quiz / Mini Projects / Model Developed/others Planned if any *case studies given , Assignment given

Evaluation method *Marks based evaluated for Assignments and Direct interaction during Tutorials

UNIT IV Production Cost Estimation

28	Production Control Systems	T1	1	BB / PPT	L2	CO4	PO2,P07
29	Loading and scheduling-Master Scheduling	T1	1	BB / PPT	L2	CO4	PO2,P07
30	Scheduling rules-Gantt charts	T1	1	BB / PPT	L2	CO4	PO2,P07
31	Perpetual loading-Basic scheduling problems	T1	1	BB / PPT	L2	CO4	PO2,P07
32	Line of balance – Flow production scheduling	T1	1	BB / PPT	L2	CO4	PO2,P07
33	Batch production scheduling-Product sequencing	T1	1	BB / PPT	L2	CO4	PO2,P07
34	Production Control systems- Periodic batch control	T1	1	BB / PPT	L2	CO4	PO2,P07, PO11

35	Material requirement planning kanban– Dispatching-Progress reporting and expediting	T1	1	BB / PPT	L2	CO4	PO2,P07, PO11
36	Manufacturing lead time-Techniques for aligning completion times and due dates.	T1	1	BB / PPT	L2	CO4	PO2,P07, PO11
Suggested Activity: Assignment / Case Studies / Tuorials/ Quiz / Mini Projects / Model Developed/others Planned if any studies given , Assignment given							*case
Evaluation method based evaluated for Assignments and Direct interaction during Tutorials							*Marks
UNIT V Machining Time calculation							
37	Inventory control-Purpose of holding stock	T1	1	BB / PPT	L2	CO5	PO2,PO5 , P07
38	Effect of demand on inventories	T1	1	BB / PPT	L2	CO5	P07
39	Ordering procedures.	T1	1	BB / PPT	L2	CO5	PO2,P07
40	Two bin system -Ordering cycle system	T1	1	BB / PPT	L2	CO5	PO2,PO5 , P07
41	Determination of Economic order quantity and economic lot size	T1	1	BB / PPT	L3	CO5	PO2,P07
42	ABC analysis	T1	1	BB / PPT	L2	CO5	PO2,PO5 , P07
43	Recorder procedure	T1	1	BB / PPT	L2	CO5	P07
44	Introduction to computer integrated production planning systems	T1	1	BB / PPT	L1	CO5	PO2,PO5 , P07
45	Elements of JUST IN TIME SYSTEMS-Fundamentals of MRP II and ERP	T1	1	BB / PPT	L1	CO5	PO5,P07, PO11
Suggested Activity: Assignment / Case Studies / Tuorials/ Quiz / Mini Projects / Model Developed/others Planned if any studies given , Assignment given							*case
Evaluation method *Evaluations are based on case study report							
Content Beyond the Syllabus Planned							
1	Case study of JIT						
Text Books							
1	James. B. Dilworth, ”Operations management – Design, Planning and Control for manufacturing and services” Mcgraw Hill International edition 1992						
2	Martand Telsang, “Industrial Engineering and Production Management”, First edition, S. Chand and Company, 2000.						
Reference Books							
1	Upendra Kachru, “ Production and Operations Management – Text and cases” 1st Edition, Excel books 2007						
2	Chary. S.N., “Theory and Problems in Production & Operations Management”, Tata McGraw Hill, 1995.						
3	Elwood S.Buffa, and Rakesh K.Sarin, “Modern Production / Operations Management”, 8th Edition John Wiley and Sons, 2000.						
Website / URL References							
Blooms Level							
Level 1 (L1) : Remembering	Lower Order Thinking	Fixed Hour Exams	Level 4 (L4) : Analysing		Higher Order Thinking	Projects / Mini Projects	
Level 2 (L2) : Understanding			Level 5 (L5) : Evaluating				
Level 3 (L3) : Applying			Level 6 (L6) : Creating				
Mapping syllabus with Bloom’s Taxonomy LOT and HOT							

Unit No		Unit Name				L1	L2	L3	L4	L5	L6	LOT	HOT	Total
Unit 1		INTRODUCTION				2	5	2				9	0	9
Unit 2		WORK STUDY					9					9	0	9
Unit 3		PRODUCT PLANNING AND PROCESS PLANNING				5	3	1				9	0	9
Unit 4		PRODUCTION SCHEDULING					9					9	0	9
Unit 5		INVENTORY CONTROL AND RECENT TRENDS IN				2	6	1				9	0	9
Total						9	32	4	0	0	0	45	0	45
Total Percentage						20	71.1111	8.88889	0	0	0	100	0	100
CO PO Mapping														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2									1		2	0
CO2	2	2									2		2	1
CO3	2						2						2	1
CO4	2						2				1		2	2
CO5	1				2		2				1		2	2
Avg	2	2			2		2				1		2	2
Justification for CO-PO mapping														
CO1	PO1: Basic Engineering Knowledge is required PO2: Problem analysis is required PO11: Management skills are required													
CO2	PO1: Basic Engineering Knowledge is required PO2: Problem analysis is required PO11: Management skills are required													
CO3	PO2: Problem analysis is required, PO7: Impact of Professional Engineering													
CO4	PO2: Problem analysis is required, PO5: Modern Tools are used PO7: Impact of Professional Engineering PO11: Management skills are required													
CO5	PO2: Problem analysis is required, PO5: Modern Tools are used PO7: Impact of Professional Engineering PO11: Management skills are required													
3		High level			2		Moderate level			1		Low level		
Name & Sign of Faculty Incharge : Mr.K.K.VINOTHKUMAR														
Name & Sign of Subject Expert : Mr.K.K.VINOTHKUMAR														
Head of the Department : Dr.S.PRASATH														