

PRODUCTION PLANNING AND CONTROL

Course Code	19ME4701D	Year	IV	Semester	I
Course Category	Program Elective-IV	Branch	ME	Course Type	Theory
Credits	3	L – T – P	3 – 0 – 0	Prerequisites	Nil
Continuous Internal Evaluation	30	Semester End Evaluation	70	Total Marks	100

Course Outcomes		Level
After successful completion of the course, the student will be able to		
CO1	Discuss the objectives, functions, applications of PPC and forecasting techniques.	L2
CO2	Explain different Inventory control and optimization techniques with help of case studies.	L1
CO3	Analyze routing and scheduling problems.	L4
CO4	Summarize various aggregate production planning techniques.	L1
CO5	Describe way of integrating different departments to execute production control functions.	L1

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3-High, 2: Medium, 1: Low)														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2		3	1	1	1		1			1		2	3
CO2	2		3	1	1	1		1			1		2	3
CO3	2		3	1	1	1		1			1		2	3
CO4	2		3	1	1	1		1			1		2	3
CO5	2		3	1	1	1		1			1		2	3

Syllabus		
Unit No.	Contents	Mapped COs
I	INTRODUCTION: Objectives of production planning and control, definitions, functions of production planning and control organization of production planning and control department, internal organization of department. FORECASTING: Importance - Forecasting Techniques- qualitative methods: Jury/Expert Method, Survey method, Sales force composite method, Delphi method and quantitative methods: Simple average, moving average, smoothing coefficient, Least Square method.	CO1
II	INVENTORY MANAGEMENT: Functions of inventories – relevant inventory costs – ABC analysis – VED analysis – EOQ model – Inventory control systems – P-Systems and Q-Systems - Introduction to MRP-I, MRP-II & ERP, JIT inventory, Kanban system SYSTEMATIC CONTROL OF INVENTORY: Introduction to Computer based inventory control systems. Case study – Inventory management in automobile manufacturing units.	CO2
III	ROUTING: Definition – Routing procedure –Route sheets – Bill of material – Factors affecting routing procedure. SCHEDULING: Definition – Activities-Difference with loading,	

	Scheduling types: Forward, Backward scheduling, Job shop scheduling methods – Arrival pattern, processing pattern, number of workers available, machine varieties available, Priority rules for job sequencing FIFO, FILO, SPT, SOT, EDD, STR, CR. Johnson's job sequencing rules- n jobs on 2machines, n jobs on 3 machines.	CO3
IV	PRODUCTION PLANNING: Scope of planning, types of production planning - short term and long-term planning - make and buy decisions. AGGREGATE PLANNING: Introduction, Inputs to aggregate planning, strategies- Line strategy, chase strategy, capacity options, demand options.	CO4
V	DISPATCHING: Centralized and Decentralized Dispatching- Activities of dispatcher – Dispatching procedure – follow-up – definition – Reason for existence of functions – types of follow up - Application of computers in production planning and control.	CO5

Learning Recourse(s)

Text Book(s)

1. Samson Eilon, "Elements of Production Planning and Control", Universal Book Corpn.1984
2. James.B.Dilworth,"Operations management – Design, Planning and Control for manufacturing and services" McGraw Hill International edition 1992.

Reference books

1. MartandTelsang, "Industrial Engineering and Production Management", First edition, S. Chand and Company, 2000.
2. Elwood S.Buffa, and Rakesh K.Sarin, "Modern Production / Operations Management", 8th Edition, John Wiley and Sons, 2000.
3. KanishkaBedi, "Production and Operations management", 2nd Edition, Oxford university press, 2007.
4. Melynck, Denzler, "Operations management – A value driven approach" Irwin McGraw hill.
5. Norman Gaither, G. Frazier, "Operations Management", 9th edition, Thomson learning IE, 2007

e- Resources & other digital material

1. <https://www.tandfonline.com/toc/tppc20/current>
2. <https://www.managementstudyguide.com/production-planning-and-control.htm>
3. <https://nptel.ac.in/courses/112/107/112107143/>