

4/4 B.Tech. SEVENTH SEMESTER

ME7T2

PRODUCTION PLANNING & CONTROL

Credits: 4

Lecture:- 4 periods/week -
Tutorial : --

Internal assessment: 30marks
Semester end examination: 70 marks

Objectives:

- To understand the problems and opportunities faced by the operations manager in manufacturing and service organizations.
- To develop an ability to apply PPC concepts in a various areas like marketing, accounting, finance, engineering, personnel management, logistics, etc.
- To integrate operations concepts with other functional areas of business.
- To understand the PPC function in both manufacturing and service organizations.
- To examine several classic Operations Management planning topics including production planning and inventory control.
- To learn several important contemporary topics relevant to business managers of all functional disciplines, including quality management, lean concepts, and sustainability.

Learning outcomes:

At the end of course the students will have:

- Recognize the objectives , functions , applications of PPC and its techniques.
- Identify best contemporary techniques for Inventory control.
- Explain routing involved in production process
- Analyze aggregate production planning and determine a cost effective production plan.
- Solve project scheduling problem using different scheduling techniques.
- Describe way of integrating different departments to execute PPC functions.

Pre-Requisites:

Industrial Engineering and Management

UNIT – I

INTRODUCTION :

Definition – Objectives of production Planning and Control – Functions of production planning and control – Elements of production control – Types of production – Organization of production planning and control department – Internal organization of department.

UNIT – II

FORECASTING–

Importance of forecasting –Types of forecasting, their uses –General principles of Forecasting –Forecasting techniques– qualitative methods and quantitative methods

UNIT – III

INVENTORY MANAGEMENT –

Functions of inventories – relevant inventory costs – ABC analysis – VED analysis – EOQ model – Inventory control systems – P–Systems and Q-Systems –

UNIT – IV

Introduction to MRP-I, MRP-II & ERP, JIT inventory, Kanban system

UNIT – V

ROUTING –

Definition – Routing procedure –Route sheets – Bill of material – Factors affecting routing procedure.

UNIT – VI

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, SPT, SOT, EDD, STR, CR, LISO, Random Orders. Scheduling Techniques- Gantt Charts, LOB, Johnson's job sequencing rules- n jobs on 2machines, n jobs on 3 machines, n jobs on m machines.

UNIT – VII

Line Balancing, Aggregate planning- Expediting, controlling aspects.

UNIT – VIII

DISPATCHING –

Centralized and Decentralized Dispatching- Activities of dispatcher – Dispatching procedure – follow-up – definition – Reason for existence of functions – types of follow up, applications of computer in production planning and control.

Learning resources

Text books:

1. Elements of Production Planning and Control, by Samuel Eilon, Universal Publishing Corporation.
2. Modern Production & Operations management, (8th edition) by Baffa & Rakesh Sarin, John Wiley,.

References books:

1. Production & Operations Management, (4th Edition), S.N. Chary, The Mc Graw-Hill,
2. Inventory Control Theory and Practice, by Martin K. Starr and David W. Miller, "", Prentice Hall.
3. Reliability Engineering & Quality Engineering, by Dr. C. Nadha Muni Reddy and Dr. K. Vijaya Kumar Reddy, Galgotia Publications, Pvt., Limited.