

# **AMAC-16 INDUSTRIAL ENGINEERING AND PRODUCTION MANAGEMENT**

## **UNIT-1 INTRODUCTION TO INDUSTRIAL ENGINEERING**

Definition, History and Development of Industrial Engineering, Contributions of Industrial Engineering, Activities of Industrial Engineering, Industrial Engineering Approach, Objectives of Industrial Engineering, Function of an Industrial Engineer.

## **UNIT-2 PRODUCTIVITY**

Concept, Definitions of Productivity, Production and Productivity, Expectation from Productivity, Benefits from Productivity, Dynamics of Productivity Change, Productivity Measures, Advantages and Limitations of Productivity Measures, Productivity Measurement Models, and Factors Influencing Productivity, Productivity Improvement Techniques, and Levels of Productivity Measurements.

## **UNIT-3 WORK STUDY**

Importance of Work-Study, Advantages of Work-Study, Work-Study Procedure, Work Simplification and Work-Study, Human Considerations in Work-Study, Work-Study and the Management, Work-Study and supervisor, Work-Study and the Workers, Work-Study Man.

## **UNIT-4 METHOD STUDY**

Objectives of method Study, Scope of Method Study, Steps Involved in Method Study, Selection of the Job for Method Study, Recording Techniques, Micro Motion Study, Memo Motion Study, Cycle Graph and Chrono cycle Graph, Critical Examination.

## **UNIT-5 WORK MEASUREMENT**

Definition, Objectives of Work Measurement, Techniques of Work Measurement, Types of Elements, Time Study Equipment, Performance Rating, Allowances, Computation of Standard time, Comparison of Various Techniques, Work Sampling, Synthetic Data, Predetermined Motion Time Analysis.

## **UNIT-6 PLANT LOCATION**

Introduction, Need for Selecting a Suitable Location, Plant Location Problem, Advantages of Urban, Suburban, Rural Locations, Importance of Location, Systems View of Location, Location Factors, Comparison between Urban and Rural Locations, Factors Influencing Plant Location, Quantitative Method for Evaluation of Plant Location

## **UNIT-7 PLANT LAYOUT**

Definition, Plant Layout Problem, Objectives of Pant Layout, Principles of Plant Layout, Factors influencing Plant Layout, Type of Manufacturing System, Types of Layout, Material Flow Patterns, Symptoms of Bad Layout, Plant Layout Procedure, When to Use Process, Products and

Fixed Position Layout, Tools and Techniques of Plant Layout, Computer Packages for Layout Analysis, Factory Building,

### **UNIT-8 INTRODUCTION TO PRODUCTION/OPERATIONS MANAGEMENT**

Production / Operation Functions, Production Systems, Objectives of Production Management, History and Development of Production management, Functions and Scope of Production Department, Production Management Frame Work.

### **UNIT-9 NEW PRODUCT DESIGN**

Product Life-Cycle, Product Policy of an Organization, Selection of a Profitable Product, Product Design Process, Product Analysis

### **UNIT-10 DEMAND FORECASTING**

Forecasting and Prediction, Need for Demand Forecasting, Long Term and Short term Forecasts, Classification of Forecasting Methods, Judgmental Techniques, Time Series Analysis, Time Series Analysis, Least Square Methods of Forecasting, Moving Average forecasting, Exponential Smoothing Method, Forecast Error, Costs and Accuracy of Forecasts

### **UNIT-11: PRODUCTION PLANNING AND CONTROL**

Need for PPC, Production Planning and Production Control, Objectives of PPC, Functions of PPC, Comparison between Production Planning and Production Control, Information Requirement of PPC, Production Procedure, Organization for PPC, Manufacturing Methods and PPC, Problem of Production Planning and Control

### **UNIT-12 MATERIAL REQUIREMENT PLANNING (MRP)**

MRP Objectives, Functions Served by MRP, MRP Terminology, MRP system, MRP Outputs, MRP Logic, Management Information from MRP, Lot Sizing Considerations, Manufacturing resource Planning, Capacity Requirements Planning (CRP)

### **UNIT-13 PRODUCTION CONTROL**

Outline of Production Control, Loading, Sequencing and Scheduling, Loading, Priority Sequencing, Sequencing Problems, Assignment Model, Scheduling, Dispatching, Progressing

### **UNIT-14: INVENTORY CONTROL**

Meaning of Inventory, Types of Inventories, Reasons for Keeping Inventories, Inventory Control, Objectives of Inventory Control, Benefits of Inventory Control, Costs Associated with Inventory, Inventory Control-Terminology, Inventory Cost Relationships.

### **Reference Books:**

1. Industrial Engineering and Production Management Paperback – 1 December 2006  
By Martand Telsang (Author)
2. Industrial Engineering and Management (2018-2019) Session Paperback – 1 January 2018  
By O. P. Khanna (Author)