

Program : <b>Diploma in Engineering and Technology / Commercial Practice / Management</b>	
Course Code : <b>5001</b>	Course Title: <b>Industrial management and safety</b>
Semester : <b>5</b>	Credits: <b>No Credit</b>
Course Category: <b>Common Course</b>	
Periods per week: <b>4 (L: 3 T: 1 P: 0)</b>	Periods per semester: <b>60</b>

### Course Objectives:

- To provide theoretical insights and practical tools within the area of management
- To design, develop, implement, and improve integrated systems that include people, materials, information, equipment, and environments
- To meet the challenges for contemporary professional practice and be able to adapt and solve the increasingly complex problems faced by industry.

### Course Outcomes

On completion of the course, the student will be able to:

<b>CO<sub>n</sub></b>	<b>Description</b>	<b>Duration (Hours)</b>	<b>Cognitive Level</b>
CO1	Describe the fundamental principles, approaches and functions of management	15	Applying
CO2	Explain the concept of quality and material management	13	Understanding
CO3	Apply project management techniques and quantitative techniques in management	20	Applying
CO 4	Recognize the importance and features of industrial safety	10	Understanding
	Series Test	2	

## CO-PO Mapping

Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3						
CO2	2			2			
CO3	3					3	
CO4	2						2

3-Strongly mapped, 2-Moderately mapped, 1-Weakly mapped

## Course Outline

Module Outcomes	Description	Duration (Hours)	Cognitive Level
CO1	<b>Describe the fundamental principles, approaches and functions of management</b>		
M1.01	Identify basic principles, functions and approaches in management	3	Understanding
M1.02	Describe the principle and functions of human resource management, job evaluation and merit rating	4	Understanding
M1.03	Identify the importance, advantages, and different methods of training	1	Understanding
M1.04	Explain different types of ownership, organization, wages, incentives and financial incentive plans	4	Understanding
M1.05	Solve problems related to wage plans	3	Applying

### Contents:

Definition of Management, Administration, F.W. Taylor's and Henry Fayol's Principles of Management, Functions of Manager. Types of Organization: Line, functional, Line and staff type.

Different types of ownership: - Sole proprietorship, partnership, private Ltd company, public Ltd company, co-operative society-transnational organizations (brief description only)

**Personnel Management:** functions of personnel management - requirements of manpower planning - factors affecting manpower planning - Job evaluation - steps required for job evaluation - methods for job evaluation - Merit rating - objectives and methods - Performance appraisal - training - importance of training - methods of training - advantages of training, Labor turn over.

**Wages** – types of Wages- incentive-types- Types of financial incentive plans- Halsey plan, Rowan plan, Simple problems

<b>CO2</b>	<b>Explain the concept of quality and material management</b>		
M2.01	Explain the concept and characteristics of quality	1	Understanding
M2.02	Recognize the importance and elements of ISO and explain the steps for the implementation of ISO	2	Understanding
M2.03	Define the concept of TQM and its link with ISO	2	Understanding
M2.04	Explain the terms related to purchase and the purchase procedure	2	Understanding
M2.05	Explain the concept of inventory management and inventory models	3	Understanding
M2.06	Identify the functions of store keeper and records used in a store	1	Understanding
M2.07	Explain the modern concepts in management	2	Understanding
	Series test I	1	
<p><b>Contents:</b></p> <p>Definitions of quality-characteristics of quality- Concept and role of ISO, elements of ISO, steps for installation of ISO 9000 - preparatory step, implementation step, registration and certification step-Quality Audit – objectives.</p> <p><b>TQM</b> -Concept, the link between ISO and TQM -mission, vision and quality policy.</p> <p>Objectives of purchase department. -State the buying techniques. -Describe purchase procedure. -define- quotation -tenders -single and open -earnest money security deposit</p> <p><b>Inventory management</b> -definition -inventory models -EOQ and ABC. Stores management - -store keeping functions -centralized and de-centralized stores-duties of store keeper - -store records -indent forms -bin card -store ledger.</p> <p><b>Modern Management Techniques</b>Just in Time; Quality circle; Zero defect concept; 5S Concept; Management Information Systems, Lean concept in management (BRIEF DESCRIPTION ONLY)</p>			
<b>CO3</b>	<b>Apply project management techniques and quantitative techniques in management</b>		
M3.01	Explain the concept of CPM and PERT and define the terms related to CPM and PERT	2	Understanding
M3.02	Explain the procedure for project management using CPM and PERT	2	Understanding
M3.03	Ability to solve simple problems using CPM and PERT	4	Applying

M3.04	Explain the concept of linear programming and formulate a linear programming problem from the given data	4	Applying
M3.05	Apply theoretical knowledge to solve a LPP using graphical method	4	Applying
M3.06	Find the initial feasible solution to a transportation problem using North west corner rule	4	Applying

**Contents:**

**Introduction to Network analysis** - application of CPM and PERT -commonly used terms in CPM: - Operation, pre-operation, post operation, concurrent operation, earliest finish time (EFT), latest finish time (LFT), critical activities, critical path, event, slack or float, dummy activity- Procedure for CPM -simple problems on CPM (by AOA method only).

PERT - comparison between CPM and PERT -procedure for PERT - calculation of expected time- commonly used terms in PERT- event, activity, successor event, predecessor event, Earliest expected time, Latest allowable time, slack - simple problems in PERT.

**Linear programming:** Introduction -methods - Formulation of LPP -solution of given LPP using graphical method –

**Transportation problem** -meaning -initial feasible solution of transportation problem (North west corner rule)

Simple problems

<b>CO4</b>	<b>Recognize the importance and features of industrial safety</b>		
M4.01	Recognize the importance of safety in the workplace and the terms related to accidents and safety	3	Understanding
M4.02	Explain the methods and norms for prevention of accidents in an industry	3	Understanding
M4.03	Discuss industrial disputes and their settlement	4	Understanding
	Series Test II	1	

**Contents:**

**Importance of safety in workplace** -increasing trends in industrial accidents - terminology –factory- accident -incident -severity rate -- frequency rate -incidence rate - safety performance index -accident proneness -unsafe acts - list the causes of accidents: - Mechanical, Environmental, personnel factors

**Accident prevention techniques** - 4 E'S of accident prevention technique. -role of management -safety officers - role of safety council -government norms -factories act of 1948 -factories rule 1960 - -precautions to be observed in hazardous situations like toxic, flammable, electrical shock and material handling.

**Industrial disputes-** Settlement of Industrial disputes; Collective bargaining; Conciliation; Mediation; Arbitration

**Text /Reference:**

<b>T/R</b>	<b>Book Title/Author</b>
T1	O P Khanna-Industrial Engineering and management- Dhanpat Rai and sons, New Delhi
T2	N D Vohra -Quantitative techniques in management- TMH, New Delhi
R1	LS Srinath -PERT and CPM principles and applications -East West Press Pvt Ltd. New Delhi
R2	Production and Operations Management – R.Paneerselvam, PHI Learning Private Limited, 2013.
R3	Production and Operations Management – Shailendra Kale, McGraw Hill Educations (India) Private Limited,2013.
R5	L M Deshmukh -Industrial safety management - TMH New Delhi

**Online Resources**

<b>Sl.No</b>	<b>Website Link</b>
1	<a href="https://nptel.ac.in/courses/">https://nptel.ac.in/courses/</a>
2	<a href="https://www.classcentral.com/course/swayam">https://www.classcentral.com/course/swayam</a>
3	<a href="https://alison.com/courses/human-resources">https://alison.com/courses/human-resources</a>
4	<a href="https://onlinecourses.nptel.ac.in/">https://onlinecourses.nptel.ac.in/</a>