

Industrial Management

Course Code	23ME2602	Year	III	Semester	II
Course Category	Open Elective - II	Offering 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: Upon successful completion of the course, the student will be able to

	Statement	Skill	Level	UNIT
CO1	Understand the concepts and tools of industrial engineering and management.	Understand	L2	1,2,3,4,5
CO2	Explain the importance of work study, statistical quality control and total quality management techniques in improving productivity.	Understand	L2	2,3
CO3	Illustrate the concepts of human resources management, value analysis and solve problems on financial management.	Apply	L3	4,5

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

Syllabus		
UNIT	Content	Mapped CO
I	INTRODUCTION: Definition of industrial engineering (I.E), development, applications, role of an industrial engineer, differences between production management and industrial engineering, quantitative tools of IE and productivity measurement. concepts of management, importance, functions of management, scientific management, Taylor's principles, theory X and theory Y, Fayol's principles of management. PLANT LAYOUT: Factors governing plant location, types of production layouts, advantages and disadvantages of process layout and product layout, applications, quantitative techniques for optimal design of layouts, plant maintenance, preventive and break down maintenance.	CO1
II	WORK STUDY: Importance, types of production, applications, work study, method study and time study, work sampling, PMTS, micro-motion study, rating techniques, MTM, work factor system, principles of Ergonomics, flow process charts, string diagrams and Therbligs.	CO1, CO2

III	<p>STATISTICAL QUALITY CONTROL: Quality control, Quality assurance and its importance, SQC, attribute sampling inspection with single and double sampling, Control charts – \bar{X} and R – charts \bar{X} and S charts and their applications, numerical examples.</p> <p>TOTAL QUALITY MANAGEMENT: zero defect concept, quality circles, implementation, applications, ISO quality systems. Six Sigma– definition, basic concepts</p>	CO1, CO2
IV	<p>FINANCIAL MANAGEMENT: Scope and nature of financial management, Sources of finance, Ratio analysis, Management of working capital, estimation of working capital requirements, stock management, Cost accounting and control, budget and budgetary control,</p> <p>CAPITAL BUDGETING – Nature of Investment Decisions – Investment Evaluation criteria- NPV, IRR, PI, Payback Period, and ARR, numerical problems</p>	CO1, CO3
V	<p>HUMAN RESOURCEMANAGEMENT: Concept of human resource management, personnel management and industrial relations, functions of personnel management, Job-evaluation, its importance and types, merit rating, quantitative methods, wage incentive plans, and types.</p> <p>VALUE ANALYSIS: Value engineering, implementation procedure, enterprise resource planning and supply chain management.</p>	CO1, CO3

Learning Recourse(s)**Text Book(s)**

1. O.P Khanna, Industrial Engineering and Management, Dhanpat Rai Publications (P) Ltd, 2018.
2. Mart and Telsang, Industrial Engineering and Production Management, S.Chand & Company Ltd. New Delhi, 2006.

Reference books

1. Bhattacharya DK, Industrial Management, S.Chand, publishers, 2010.
2. J.G Monks, Operations Management, 3/e, McGraw Hill Publishers1987.
3. T.R. Banga, S.C.Sharma, N. K. Agarwal, Industrial Engineering and Management Science, Khanna Publishers, 2008.
4. Koontz O'Donnell, Principles of Management, 4/e, McGraw Hill Publishers, 1968.
5. R.C.Gupta, Statistical Quality Control, Khanna Publishers, 1998.
6. NVS Raju, Industrial Engineering and Management, 1/e, Cengage India Private Limited, 2013.

Online Learning Sources

1. https://onlinecourses.nptel.ac.in/noc21_me15/preview
2. https://onlinecourses.nptel.ac.in/noc20_mg43/preview
3. <https://www.edx.org/learn/industrial-engineering>
4. <https://youtube.com/playlist?list=PL299B5CC87110A6E7&si=TghLCbEobuxjEaXi>
5. https://youtube.com/playlist?list=PLbjTnj-t5Gkl0z3OHOGK5RB9mvNYvnImW&si=oaX_5RG69hS3v2ll