JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF MECHANICAL ENGINEERING

IV Year - I Semester		L	T	P	C
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	INDUSTRIAL MANAGEMENT				

Course Objectives:

1. To impart fundamental knowledge and skill sets required in the Industrial Management and Engineering profession, which include the ability to apply basic knowledge of mathematics, probability and statistics, and the domain knowledge of Industrial Management and Engineering
2. To produce graduates with the ability to adopt a system approach to design, develop, implement and innovate integrated systems that include people, materials, information, equipment and energy.
3. To enable students to understand the interactions between engineering, business, technological and environmental spheres in the modern society.
4. To enable students to understand their role as engineers and their impact to society at the national and global context.

UNIT – 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.

UNIT – II
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 breakdown maintenance.

UNIT – III
WORK STUDY: Importance, types of production, applications, workstudy, 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,

UNIT – IV
STATISTICAL QUALITY CONTROL: Quality control, Queing assurance and its importance, SQC, attribute sampling inspection with single and double sampling, Control charts – and R – charts and S charts and their applications, numerical examples.
TOTAL QUALITY MANAGEMENT: zero defect concept, quality circles, implementation, applications, ISO quality systems. six sigma – definition, basic concepts

UNIT – V
RESOURCE MANAGEMENT: 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, types.

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VALUE ANALYSIS: Value engineering, implementation procedure, enterprise resource planning and supply chain management.

TEXT BOOKS:
1.Industrial Engineering and management / O.P Khanna/Khanna Publishers.
2.Industrial Engineering and Production Management/Martand Telsang/S.Chand & Company Ltd. New Delhi

Reference Books:
1.Industrial Management / Bhattacharya DK/Vikas publishers

2. Operations Management / J.G Monks/McGrawHill Publishers.

3.Industrial Engineering and Management Science/T.R. Banga,S.C.Sharma, N. K. Agarwal/Khanna Publishers

4. Principles of Management /Koontz O' Donnel/McGraw Hill Publishers.

5. Statistical Quality Control /Gupta/Khanna Publishers

6. Industrial Engineering and Management /NVS Raju/Cengage Publishers

Course outcome:
Upon successful completion of this course you should be able to:

1. Design and conduct experiments, analyse, interpret data and synthesize valid conclusions

2. Design a system, component, or process, and synthesize solutions to achieve desired needs

3. Use the techniques, skills, and modern engineering tools necessary for engineering practice with appropriate considerations for public health and safety, cultural, societal, and environmental constraints

4. Function effectively within multi-disciplinary teams and understand the fundamental precepts of effective project management