Course code	Course Name	L-T-P -Credits	Year of Introduction
MP204	Industrial Engineering	4-0-0-4	2016

Prerequisite: Nil

Course Objectives

1. To provide a basic knowledge on various industrial engineering principle and tools and need for analyzing engineering activities.
2. To familiarise the students with the design, improvement and installation of integrated systems of men, materials and equipments

Syllabus

Introduction to Industrial Engineering, productivity, work study, ergonomics

Expected outcome.

At the end of this course, students should be able to :

- Prepare the design, planning and development strategy of a new product
- Conduct the work study and determine the optimum time and space for a given work
- Apply human factors such as ergonomics in product design

References:

1. Donald R Herzog, Industrial Engineering Methods and Controls , Prentice Hall,
2. H.B. Maynard, Industrial Engineering Handbook, McGraw-Hill Publishers
3. W Grant Ireson, Eugene L Grant, Handbook of Industrial Engineering management - Prentice Hall
4. Marvin Mundel, Motion and Time Study , Prentice Hall India
5. Harold T Amrine, John A Ritchey et al., Manufacturing organization &management, Pearson Education
6. Benjamin W .Niebel, Motion and Time Study, Richard, D. Irwin Inc., Seventh Edition, 2002
7. Barnes, R.M. Motion and Time Study, John Wiley, 2002
8. Introduction to work study, ILO, 3rd edition, Oxford & IBH publishing,2001
9. Bridger R.S. Introduction to Ergonomics, McGraw Hill, 1995
10. Productivity Management- A systems approach, Prem Vrat, Narosa publishing, 1998

Course Plan

Module	Contents	Hours	Sem.ExamMarks
I	Introduction to Industrial Engineering – Definition – Functions- Historical Development of Industrial engineering – Applications of Industrial Engineering Productivity – Input output model - factors affecting Productivity – Productivity Ratios - Improving productivity – Indian Industry – Productivity of Indian industry	8	15%
II	Product design and development – Good Product Design – Product planning – Product development – Product life Cycle - Products and services	9	15%
	FIRST INTERNAL EXAMINATION		
III	Product Standardization, Simplification, Specialization and Inter changeability – Value Analysis - Value Engineering	9	15%
IV	Work Study – Scope and Objectives – Method Study Procedure – Process Charts – Flow diagram- Principles of motion economy – Micro motion study – Cycle graph- Chronocyclegraph SIMO	11	15%

	Chart		
SECOND INTERNAL EXAMINATION			
V	Work Measurement – Time study – Performance rating – standard time – allowances –Work sampling – PMTS – Standard data	10	20%
VI	Ergonomics: Human factors Engineering, human performance in physical work, anthropometry, design of workstation, design of displays and controls.	9	20%
END SEMESTER EXAM			

Question Paper Pattern

Total marks: 100, Time: 3 hours
The question paper shall consist of three parts

Part A

4 questions uniformly covering modules I and II. Each question carries 10 marks
Students will have to answer any three questions out of 4 (3X10 marks =30 marks)

Part B

4 questions uniformly covering modules III and IV. Each question carries 10 marks
Students will have to answer any three questions out of 4 (3X10 marks =30 marks)

Part C

6 questions uniformly covering modules V and VI. Each question carries 10 marks
Students will have to answer any four questions out of 6 (4X10 marks =40 marks)

Note: In all parts, each question can have a maximum of four sub questions, if needed.