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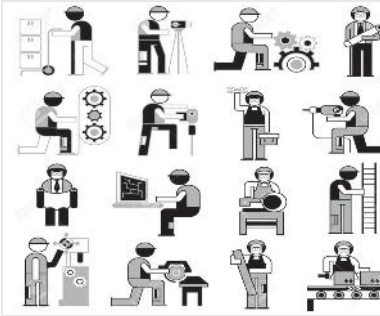
INDUSTRIAL ENGINEERING FOR TEXTILES AND APPARELS

Hours Per Week :

L	T	P	C
3	-	-	3

Total Hours :

L	T	P	WA/RA	SSH/HSB	CS	SA	S	BS
45	-	-	20	-	20	-	-	-



Course Description and Objectives:

This course offers to understand the methods required to set the targets, principles involved to set-up a manufacturing unit and best work practices to get better quality and higher production. Objective of this course is to impart designing skills to standardise the work practices.

Course Outcomes:

The student will be able to:

- know the different concepts and meaning of Industrial engineering.
- distinguish techniques in designing a workstation at bulk production.
- design a production system or work system.
- analyze the work place by using work study and method study.

SKILLS:

- ✓ *Prepare a project for small scale industry.*
- ✓ *Select plant location and machinery for project.*
- ✓ *Analyse best practices for material handling.*
- ✓ *Set standard operating procedures.*

ACTIVITIES:

- Prepare standard work procedures for group of activities.
- Case study on plant layout.
- Collect the different types of material handling techniques used in garment industry.
- Compare WIP in different production systems.
- Calculate the inventory cost for given conditions.
- Compare the advantages of outsourcing.

UNIT - 1**L-9**

CONCEPTS OF PRODUCTION AND PRODUCTIVITY: Introduction, Production, Productivity, Standard of living, Productivity measures. Role of apparel engineering - Introduction, Apparel engineering, Methodology, Benefits of engineering, Tools and techniques for apparel engineering, Role of industrial engineer, Pre-production activities of a supervisor.

METHOD ANALYSIS: Definition, Recording the method, Operation process chart, Flow process chart, Flow diagram, String diagram, Travel chart (From – To chart), Multiple activity chart (or) man-machine chart.

UNIT - 2**L-10**

MOTION ECONOMY: Principles of motion economy, Two-handed process chart, Micro motion study, Study of method recorded, Methods improvement,

TYPES OF PRODUCTION SYSTEMS - Flow line, batch and job shop, Planning and Control for mass production, Characteristics, Design aspects, Problem of mass production, FMS, Batch production, EBQ; Supply Chain Management - Concept & tools, Make or buy & factors affecting out sourcing.

UNIT - 3**L-9**

APPAREL PRODUCTION SYSTEMS AND FACTORY LAYOUT: Introduction, Garment production systems, Group system, Progressive bundle synchro straight line system – batch system, Unit production system (UPS), Quick response sewing system, Layout objectives, Designing the layout.

WORK MEASUREMENT: Definition of work measurement, Techniques of work measurement, Time study, Selecting the job, Standard allowed minute (SAM), Rating factor, Allowances, Other methods to set time standards.

UNIT - 4**L-9**

APPLICATION OF IE TECHNIQUES IN GARMENT INDUSTRY: Capacity study, Operator performance, Follow-ups, Work in process (WIP), Operation bulletin

LINE BALANCING: Balancing, Steps to balance the line, Initial balance, Balance control (Operating a line), Efficiency, Cycle checks, Balancing tools.

UNIT - 5**L-8**

SCIENTIFIC METHOD OF TRAINING: Scientific method of training, Methodology behind SMT, Selection test, Basic exercise, Paper exercise, Fabric exercise,

INDUSTRIAL ENGINEERING IN APPAREL QUALITY CONTROL: Introduction, Quality as a multi-dimensional aspect, Controlling quality, Steps to achieve good quality, Quality specifications sheet, Quality training

TEXT BOOKS:

1. V Ramesh Babu, "Industrial engineering in apparel production", Woodhead Publishing India, 2012.
2. Aswathappa, "Production & Operations Management", Himalya Publishing House, New Delhi, 2006.

REFERENCE BOOKS:

1. O.P. Khanna, "Industrial Engineering & Management", Dhanpat Rai & Sons, New Delhi, 2004.
2. B. Sharma, "Industrial Engineering & Management", Khanna Publications, 1992.