PTX7D001INDUSTRIAL ENGINEERINGIN TEXTILE INDUSTRY

(Honors)

Course Objectives

- To understand the work study and method study techniques.
- To get exposure about productivity terms and terminologies.
- To know about the application of work study in textile industry.

Course Outcomes

After successful completion of this course, the students should be able to

- Discuss industrial engineering techniques
- Analyze the garment breakdown sequence
- Prepare operation bulleting for different garments
- Calculate SAM for various garments
- Conduct time study experiment

Course Content

Module-I

Productivity in textile and apparel industry: units of productivity - total time to do a job – factors affecting productivity – work content and total time – reducing work content due to the product and process method – reducing ineffective time due to worker and supervision.

Work Study: definition, work-study and productivity - basic procedure of work-study – work study and the worker, supervisor and the management - working condition and the working environment.

Module-II

Method study: definition and objects of method study – basic procedure, selection of work, Recording, examining, development of method – Textile / Apparel factory lay out and movement of workers and material - string diagram – man type flow process chart – multiple activity chart – travel chart – principle of motion economy – classification to movements – two-handed process chart – micro motion study – SIMO chart – Define, installs and maintain improved method.

Work measurement: definition, purpose, procedure and uses – techniques of work measurement– work sampling: need and use time study – definition – basic time study equipment – time study forms – selecting the job, steps in making a time study – breaking the job into elements – sample size, timing card element – stop watch procedure - time study rating – calculation of standard time – setting time standards for work with apparel production machineries.

Module-III

Industrial engineering term in textile and apparel industry-role of industrial engineering in textile industry- methodology- benefits- tools and techniques-pre production activities-capacitystudy- operator performance fall offs-work in progress- operation bulletin- line balancing- steps in line balancing –efficiency-cycle checks-balancing tools- scientific method of training – Ergonomics and its concept in textile industry

Module-IV

Application of work study technique in optimizing work load in stitching activity in garment industry –Line Balancing techniques – comparative study of different manufacturing systems used in the garment production - group system, batch system – industrial system – productivity calculation in Stitching activity.

Books Recommended:

1. Johnson Maurice —Introduction to Work Study||, International Labour Organization,
   Geneva, 2006.
2. JaccoSolinger —Apparel Manufacturing Hand Book||, Reinhold Co., 1998.
3. Juan CrloHiba —Improving working conditions and productivity in the garment industry|| International Labour Organization, Geneva, 1998.
4. V.RameshBabu — Industrial Engineering in Apparel Production|| Wood Head publishing
   India Ltd., ISBN 13:978-93-80308-17-3, 2012.
5. M.I.KHAN||IndustrialEngineering||New age international, 2007
6. Kjellzondin, —Maynard's Industrial Engineering Handbook||, 5th edition, Mcgraw Hill,
   2001.
7. Shethvijay, —Industrial engineering methods and practices||, penram international, publishing, India, 2005.