

IV Year B.Tech. Textile Technology I - Semester	L	T	P	To	C
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## TT425 INDUSTRIAL ENGINEERING FOR TEXTILES & APPARELS

### **Course Description & Objectives:**

*This main objective of this course is to understand the set up of manufacturing unit and work practice to get better quality and higher production.*

### **Course Outcomes:**

*At the completion of this course, the student should be able to*

- 1. Understand the different Concepts and meaning of industrial engineering*
- 2. Understand Different techniques in designing a workstation at bulk production*
- 3. Design a production system or work system by using different techniques in industrial engineering*
- 4. Understand how to Perform Work study and method study*

### **UNIT I- Introduction**

Introduction to Industrial Engineering: Nomenclature as Production & Operations Management, Need for Textile production, meaning, objectives, scope & its relevance to Textile Industry, Economical size of the firm, factors governing size, small scale industries - reasons for survival and optimum firm. Facilities planning: Product selection process and selection of a process, Project form. capacity planning-Def. measurement of capacity-process of capacity planning. Capacity Utilisation.

### **UNIT II - Plant Building And Location**

Plant Building: Significance, considerations of building design, types of industrial building -Textile examples, Ideal building. Plant lighting: Need, types, factors governing, A brief note on Ventilation, Plant Location:Def., need, Factors governing, theories, selection of actual site, quantitative techniques, types of location like: Rural, sub-urban & Urban, merits &demerits - Examples from Textile field.

### **UNIT III - Plant Layout And Material Handling**

Plant Layout and Material Handling: Def, need, objectives of Scientific layout, Principles of layout, Types of material flow, factors governing the layout , types  
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of layouts, Merits and demerits, textile examples. Quantitative techniques for selection of plant layout.(brief note on QTM, Craft,Corelap) Principles of material handling – meaning & significance, types equipments for Textile production Value Engineering: Value and functions – types. Maintenance Management – Types – maintenance cost.

#### **UNIT IV - Production System And Purchasing**

**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

**Purchasing:** Fundamentals, purchase procedure – types of purchases– purchase organization introduction to material management in production system; product organization role of material management, Inventory and stores management (Brief study of EOQ, ABC analysis).

#### **UNIT V - Safety And Method Study**

Organisation for Safety: Safety , significance, Accident s classified,causes of accidents costs of accidents, safe-t-score test, various approaches of accident prevention and recording. Introduction to Work study: step s in method study , tools of record, Time study-step s, elements, allowances, work measurement (Assessment of S M V for Apparel Product) Ergonomics - Noise control - Plant Humidification in Textile mills: working of humidification Units, RH% selection.

#### **TEXT BOOKS:**

1. Chunnawala and Patel, "Production and Operations Management", Himalaya Publishing House, 1997.
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. Samual Eilon, "Elements of Production Planning & Control", Newyork,1962.
3. Banga Sharma, "Industrial Engineering & Management", Khanna Publications, 1992.
6. Nobert Liody Enrick, "Industrial Engineering Manual of Textile Industry", R.E.Krieger Publication, 1978.