



**Department of Textile Engineering**

**Course Outcomes (CO's)**

**Semester III**

**3 TX 01- Textile Fibre – I**

After completion of this course student will able to demonstrate

- Co1. The essential and desirable properties of Textile fibre and their classification
- Co2 .The physical, chemical and biological properties of cotton fibre
- Co3. The physical, chemical and biological properties of jute and flax
- Co4. The physical, chemical and biological properties of wool
- Co5. The physical, chemical and biological properties of Silk
- Co6. The various methods for analyzing fibre structure

**3 TX 02 - Yarn Manufacturing – I**

After completion of this course student will

- Co1. Explain about the concept of ginning and blowroom process and description regarding ginning machines
- Co2. Explain about the concept of blowroom process and description regarding blowroom machines.
- Co3. Explain about the concept of blowroom process and description regarding blowroom machines.
- Co4. Explain about the concept of carding process and description about carding machines.
- Co5. Explain about the concept of drawing process and description about drawframe machines.
- Co6. Explain about the concept of combing preparatory and combing process and description regarding combing



### **3 TX 03- Fabric Manufacturing – I**

After completion of this course student will able to demonstrate

- Co1. Knowledge about the concept of winding process and description regarding high speed winding machines.
- Co2. Knowledge about the automatic winding machines
- Co3. Knowledge about the automatic winding machines
- Co4. Knowledge about the concept of warping process and description about high speed warping machines
- Co5. Knowledge about the automatic warping machines
- Co6. Knowledge about the concept of sizing process & description about sizing machines

### **3 TX 04- Textile Testing – I**

After completion of this course student will able

- Co1. Demonstrate knowledge of statistic applications in Textile testing field
- Co2. Demonstrate the statistical analysis of various testing results
- Co3. Explain the various sampling methods and moisture properties of textile
- Co4. Demonstrate knowledge of measurement of various types of fibre parameters
- Co5. Explain about various count of yarn and there measurement
- Co6. Explain the evaluation of tensile properties and evenness of yarn

### **3 TX 05- Thermal Science & air Conditioning**

After completion of this course student will able

- Co1. To understand the properties of steam, its types and applications in textile field.
- Co2. To describe construction and working of different types of steam boilers their accessories and mountings.
- Co3. To describe the concept of fluid dynamics and fluid flow applications in textile industries.



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Co4. To describe the concept of fluid dynamics and fluid flow applications in textile industries.

Co5. To describe the function of different types of compressors and their applications in textile industry.

Co6. To describe the function of different types of pumps and refrigeration systems.

### **Semester IV**

#### **4 TX 01- Textile Fibre – II**

After completion of this course student will able to demonstrate

Co1. The various extrusion methods of synthetic fibres

Co2. The manufacturing and properties of regenerated fibres

Co3. The manufacturing and properties of Polyamide and Polyester fibres

Co4. The manufacturing and properties of Polyacrylonitrile, Polyvinyl and Polyethylene fibres

Co5. The concepts of mechanical, thermal and optical properties

Co6. The various methods of texturing

#### **4 TX 02- Yarn Manufacturing – II**

After completion of this course student will be to

Co1. Explain the concept of speed frame process and description regarding speed frame machines.

Co2. Explain the concept of ring spinning process and description regarding ring spinning machines.

Co3. Explain the concept of ring spinning process and description about ring spinning machines–principle of drafting, different drafting systems.

Co4. Explain the concept of ring spinning process and description about ring spinning machines –spinning geometry, spinning triangle.

Co5. Explain the concept of doubling process and description regarding doubling machines.



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Co6. Explain the concept of fancy yarns and description regarding fancy yarn manufacturing machines.

#### **4 TX 03- Fabric Manufacturing – II**

After completion of this course student will able to

Co1. Knowledge about the concept of fabric forming by weaving

Co2. Knowledge about the various weaving mechanisms.

Co3. Kinematics, energy and productivity analysis of shuttle weaving machines

Co4. Knowledge about the dobby shedding principle and it related machinery

Co5. Knowledge about jacquard shedding principle & its related machinery.

Co6. Knowledge about the various warp way, weft way and loom faults.

#### **4 TX 04- Textile Testing-II**

After completion of this course student will able to

Co1. Demonstrate the knowledge about evaluation of service ability of fabric

Co2. Demonstrate the knowledge about the evaluation of dimensional stability of fabric

Co3. Explain the evaluation of low stress mechanical properties of fabric

Co4. Demonstrate the knowledge about the evaluation of thermal properties of fabric

Co5. Demonstrate the knowledge about testing of various parameters of garment

Co6. Demonstrate the knowledge about quality evaluation of garments

#### **4 TX 05- Garment Manufacturing Technology**

After completion of this course student will

Co1. Explain the apparel industry scenario in form of its structure, types, size, labor, products etc.

Co2. Explain the various technological aspects and production process involved in pattern making and sizing.

Co3. Explain the various technological aspects and production process involved in cutting and sewing operations.



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Co4. Explain the various technological aspects and production process involved fusing process.

Co5. Explain the various technological aspects and production process involved in garment finishing and its inspection.

Co6. Analyze the various production systems and demonstrate the knowledge about the use of CAD-CAM in garment manufacturing.

### Semester V

#### **5 TX 01- FABRIC STRUCTURE AND DESIGN**

After completion of this course student will demonstrate

Co1. The construction of plain, twill, and satin sateen weaves

Co2. The construction of honeycomb, mockleno and felt structures

Co3. The colour and weave effects

Co4. The backed, Bedford and double cloth structures

Co5. The leno and weft pile structure

Co6. The terry pile and tapestry structure

#### **5 TX 02- ADVANCE YARN MANUFACTURING TECHNOLOGY**

After completion of this course student will able to

Co1. Knowledge about the concept of rotor spinning and description regarding rotor spinning machines.

Co2. Knowledge about the concept of friction spinning and description regarding friction spinning machines.

Co3. Knowledge about the concept of air jet and air vortex spinning and description regarding air jet and air vortex spinning machines.

Co4. Knowledge about the concept of siro and wrap spinning and description regarding siro and wrap spinning machines.

Co5. Knowledge about the concept of self-twist and twist-less spinning and description regarding self-twist and twist-less spinning machines.



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Co6. Knowledge about the concept of core, electro-static, woollen and worsted spinning and description regarding core, electro-static, woollen and worsted spinning machines.

### **5 TX 03- CHEMICAL PROCESSING –I**

After completion of this course student will able to

- Co1. Understand the textile wet processing sequence
- Co2. Understand the different preparatory processes required for dyeing
- Co3. Understand different dye class
- Co4. Understand the various dyeing machineries
- Co5. Understand the dyes applied on various cellulosic fibre
- Co6. Understand the dyes applied on various synthetic and protein fibre

### **5 TX 04- HIGH PERFORMANCE FIBRES (PROFESSIONAL ELECTIVE-I)**

After completion of this course student will able to

- Co1. Understand the high performance fibers
- Co2. Understand the high-tech fibres.
- Co3. Understand the carbon and glass fibres
- Co4. Understand the high function fibres
- Co5. Understand the specialty applications of fibre
- Co6. Understand about thermally resistant fibres

### **5FETX 05 – FASHION TECHNOLOGY (OPEN ELECTIVE-I)**

After completion of this course student will able to

- Co1. Understand the different terms of fashion
- Co2. Understand the different categories of fashion and its adoption
- Co3. Understand about fashion research and its analysis
- Co4. Understand concept and promotion of fashion
- Co5. Understand different aspects of fashion marketing
- Co6. Understand analysis and developing of fashion resources and buying behaviour



### Semester V

#### **6 TX 01- PROCESS CONTROL IN TEXTILE MANUFACTURING**

After completion of this course student will able to

Co1. Knowledge about various process control techniques used for control of blow room and carding process.

Co2. Knowledge about various process control techniques used for control of combing preparatory, combing, drawing and speed frame process.

Co3. Knowledge about various process control techniques used for control of ring spinning process.

Co4. Knowledge about various process control techniques used for control of winding and warping process.

Co5. Knowledge about various process control techniques used for control sizing and weaving process.

Co6. Knowledge about concepts of maintenance management in textile industry for controlling productivity, quality and cost

#### **6 TX 02- ADVANCE FABRIC MANUFACTURING TECHNOLOGY**

After completion of this course student will

Co1. Explain the theories of picking power, complexities and performance limitations of shuttle loom. Also will able to demonstrate the knowledge about various technical requirements of shuttle -less weaving technology.

Co2. Demonstrate the knowledge about technical features, design and working principle of projectile weaving machine.

Co3. Demonstrate the knowledge about technical features, design and working principle of rapier weaving machine.

Co4. Demonstrate the knowledge about fluid flow theories, technical features, design and working principle relating to air and water jet weaving machines.



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Co5. Demonstrate the knowledge about technical features, design and working principle of multiphase weaving machines. Also will able to discuss about the standard specifications and use of various important fabric types.

Co6. Introduce the specifications, function, properties and production process flow of Multi-axial, Multi- dimensional, Denim and Narrow fabrics.

### **6 TX 03- CHEMICAL PROCESSING –II**

After completion of this course student will able to

Co1. Understand the textile printing

Co2. Understand the textile printing methods.

Co3. Understand the printing recipe for different dyes

Co4. Understand the various functional finishes

Co5. Understand the evaluation of various functional finishes

Co6. Understand the concept of computer colour matching

### **6 TX 04- COMFORT AND CLOTHING SCIENCE (PROFESSIONAL ELECTIVE-II)**

After completion of this course student will able to demonstrate

Co1. Knowledge about the basic element of clothing comfort

Co2. Knowledge about the aspects and measurement of aesthetic comfort

Co3. Knowledge about the subjective and objective assessment of fabric

Co4. Knowledge about the comfort in relation to heat and thermal transmission

Co5. Knowledge about the moisture and vapour transmission in relation to clothing comfort

Co6. Knowledge about clothing comfort in relation with garment

### **6TX05 – FASHION& CLOTHING SCIENCE (OPEN ELECTIVE-II)**

After completion of this course student will able to demonstrate

Co1. Understand concept of fashion

Co2. Understand different aspects of fashion design process

Co3. Understand Aspects elements and principles of fashion design





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Co4. Understand different mechanical and comfort properties of fabric

Co5. Understand quality parameters and properties of garment

Co6. Understand different methods, materials used for clothing care

### Semester - VII

#### **7 TX 01- Knitting Technology**

After successfully completing the course, the students will be able to:

Co1 Demonstrate basic knowledge of knitting process

Co2 Distinguish the types of stitches in weft knitted fabrics

Co3 Explain the working of various knitting elements

Co4 Evaluate the forces acting during knitting process

Co5 Distinguish the types of stitches in warp knit structures

Co6 Interpret the various factors affecting behaviour of knitted structure

#### **7 TX 02- Textile Mathematics**

After completion of this course student will able to

Co1 Solve numerical related to fibre dimensions, trash and lint content

Co2 Analyze blow room, card, draw frame and comber machine performances

Co3 Discuss the calculations related to speed and ring frames

Co4 Demonstrate the winding calculations

Co5 Solve the warping, sizing and weft winding calculations

Co6 Solve fabric structure and weaving mechanism related numerical

#### **7 TX 03 – Project Management**

After completion of this course student will able to

Co1 Explain various phases of project management

Co2 Understand the techno-economic feasibility analysis

Co3 Interpret the project on the basis of risk and return



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Co4 Explain the scheduling of project activities

Co5 Understand about industrial pollution

Co6 Analyze the site selection and layout selection

### **7 TX 4- Applied Electronics & Control System**

After completion of this course student will able to

Co1 Describe the fundamentals of diode and its applications in rectifier.

Co2 Discuss the working of BJT, Oscillator and Multi-vibrators.

Co3 Construct basic logic gates and digital circuits.

Co4 Explain working principle of photoelectric device, different types of sensors and transducers.

Co5 Understand the working of microprocessor, microcontroller and PLC.

Co6 Apply the knowledge of control system in textile applications.

### **7 TX 05- Technical Textile (Professional Elective)**

After completion of this course student will

Co1 Define and classify the technical textile

Co2 Summarize the functioning and applications of textile material in filtration area

Co3 Apply the knowledge of technical textiles in the area of geotextile and transportation

Co4 Identify the fibre, yarn and fabric for medical textile applications

Co5 Apply the knowledge of technical textiles in the area of protective clothing

Co6 Discuss the sports and recreation textiles

### **7TX 06- PROJECT AND SEMINAR**

After completion of this course student will

Co1 Identify the research problem and generate project idea

Co2 Conduct literature survey by using various literature sources

Co3 Summarize the literature relevant to the identified project area

Co4 Design the project plan and manage the resources required for the execution of project



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Co5 Select the seminar topic based on latest trends in textile field using various literature sources

Co6 Compile the seminar literature and deliver the same using suitable ICT tools

**SEMESTER: EIGHTH**

**8 TX 01- Nonwoven technology**

After completion of this course student will

Co1 Discuss the introductory aspects of nonwoven sector and its market scenario.

Co2 Compare the various fibers and production systems of nonwoven.

Co3 Explain the production principle of air and wet laid web formation.

Co4 Explain the technical principle of polymer laid web formation and mechanical bonding methods.

Co5 Explain the technical principle of thermal and chemical bonding methods.

Co6 Summarize the finishing and characterization of nonwoven fabrics.

**8 TX 02- Apparel Merchandising**

After completion of this course student will able to

Co1 Understand the concept of apparel industry and business etiquettes.

Co2 Summarise the responsibilities, objectives and strategies for apparel merchandising.

Co3 Understand the role and responsibilities of apparel merchandiser.

Co4 Distinguish various sourcing systems used in apparel merchandising.

Co5 Demonstrate procedures, rules and documentation related to export business.

Co6 Identify the basic requirements for ISO registration and certification in apparel industry.

**8 TX 03- Elements of Costing and Economics**

After completion of this course student will able to

Co1 Explain the costing fundamentals and its different methods

Co2 Discuss about industrial raw material procurement and storage process.

Co3 Understand the concept of inventory management systems



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Co4 Analyse demand- supply and its interaction

Co5 Explain the different market types

Co6 Describe about banking and taxation system

### **8 TX 04- Total Quality Management in Textile**

After completion of this course student will able to

Co1 Apply Total Quality Management principles and concepts

Co2 Analyze quality by using various statistical tools.

Co3 Evaluate various parameters to improve quality of product.

Co4 Understand the Total Quality Management tools as a means to improve quality

Co5 Describe different quality systems and procedures for total quality management.

Co6 Apply various quality assurance systems for quality management.

### **8TX05 PROJECT AND SEMINAR**

After completion of this course student will able to

Co1 Manage the various materials and research facilities required for the project work

Co2 Perform the experimental work as per the requirement of project work

Co3 Perform the various scientific and standard testings as needed by the project

Co4 Analyze and interpret the research data and draw the meaningful conclusions from their project work

Co5 Apply various research tools for the project data analysis

Co6 Compile the project thesis as per the standard format along with scientific articulation approach