

SYLLABUS

Diploma in Textile Technology

Semester 1

1. Engineering Physics

- **Unit 1: Mechanics and Properties of Matter**
 - Kinematics, dynamics, work, energy, power
 - Elasticity, viscosity, and fluid dynamics
- **Unit 2: Thermodynamics**
 - Laws of thermodynamics, heat transfer, entropy
- **Unit 3: Electromagnetism and Optics**
 - Electric fields, magnetic fields, wave optics
- **Unit 4: Modern Physics**
 - Quantum mechanics, nuclear physics, semiconductor physics

2. Engineering Mechanics

- **Unit 1: Statics**
 - Force systems, equilibrium, trusses, and frames
- **Unit 2: Dynamics**
 - Kinematics of particles and rigid bodies, work-energy principle
- **Unit 3: Strength of Materials**
 - Stress, strain, axial load, bending, torsion
- **Unit 4: Structural Analysis**
 - Shear force, bending moment diagrams

3. Drawing and Rendering

- **Unit 1: Basic Drawing Techniques**
 - Line, shape, form, texture, value
- **Unit 2: Perspective Drawing**
 - One-point, two-point, and three-point perspective
- **Unit 3: Rendering Techniques**
 - Shading, hatching, cross-hatching, stippling
- **Unit 4: Textile Rendering**
 - Techniques for rendering different textile textures and patterns

4. Characteristics of Textile Fibres

- **Unit 1: Natural Fibres**
 - Cotton, wool, silk, linen
- **Unit 2: Synthetic Fibres**
 - Polyester, nylon, acrylic, spandex
- **Unit 3: Fibre Properties**
 - Tensile strength, elongation, moisture absorption, thermal properties
- **Unit 4: Fibre Testing**
 - Techniques for testing fibre properties

Semester 2

5. Computer-Aided Textile Designing

- **Unit 1: Introduction to CAD Software**
 - Overview of CAD software used in textile design
- **Unit 2: Design Creation**
 - Techniques for creating textile designs using CAD
- **Unit 3: Pattern Development**
 - Digital pattern making and modifications
- **Unit 4: Simulation and Visualization**
 - Simulating textile designs and visualizing final products

6. Structural Fabric Designing

- **Unit 1: Weaving Technology**
 - Basics of weaving, types of weaves, weaving machinery
- **Unit 2: Knitting Technology**
 - Basics of knitting, types of knits, knitting machinery
- **Unit 3: Non-woven Fabrics**
 - Types, properties, applications
- **Unit 4: Fabric Design and Analysis**
 - Techniques for designing and analyzing fabric structures

7. Fabrication Methods

- **Unit 1: Cutting Techniques**
 - Manual and automated cutting techniques
- **Unit 2: Sewing Techniques**
 - Types of stitches, seams, and sewing machinery
- **Unit 3: Joining and Assembling**
 - Techniques for joining and assembling fabric components
- **Unit 4: Finishing Techniques**
 - Various fabric finishing techniques to enhance quality

8. Garment Manufacturing Technology

- **Unit 1: Garment Construction**
 - Principles of garment construction, tools, and equipment
- **Unit 2: Production Processes**
 - Steps in garment production, from design to finished product

- **Unit 3: Quality Control**
 - Techniques for ensuring quality in garment manufacturing
- **Unit 4: Costing and Planning**
 - Cost estimation, production planning, and inventory management

