CONCEPT

Textile Manufacturing Technology Course: Spinning, Weaving, Knitting, Dyeing and Finishing

7 – 11 November 2027
Riyadh - KAFD district five-star



Textile Manufacturing Technology Course: Spinning, Weaving, Knitting, Dyeing and Finishing

Ref: 1699_26552 **Date:** 7 – 11 November 2027 **Location:** Riyadh - KAFD district five-star **Fees:** 20000 SAR

Introduction:

Textile manufacturing technology, covering spinning, weaving, knitting, dyeing and finishing, is a 1-week course for production, wet processing, quality and maintenance teams in textile mills that ends with a Mill Process and Fabric Quality Improvement Plan for a case plant. Many mills lose output to yarn breaks, loom stops, shade variation and repeat dyeing, while water and steam per kilogram of fabric stay unmeasured. Nominees already run or support a spinning, fabric forming or dyehouse line, and learn through inspection walkthroughs of mill data and fabric samples. CoreConcept Training Center delivers this textile manufacturing technology course.

Course Objectives:

- Characterise cotton, polyester, viscose and blend fibres by staple length, fineness and strength to set spinning and fabric targets
- Set blowroom, carding, drawing and ring, rotor or air-jet spinning parameters to reach a target yarn count, twist and evenness
- Run weaving, weft and warp knitting and nonwoven web forming and bonding lines against efficiency and fabric construction targets
- Select pretreatment routes, dye classes and exhaust, pad-batch or continuous dyeing methods for each fibre and track water and energy per kilogram
- Analyse yarn and fabric faults, shade variation and colour fastness results with ISO 105 and AATCC test methods to find root causes
- Build a Mill Process and Fabric Quality Improvement Plan with productivity, right-first-time and resource-use targets for a case plant

Target Audience:

- Spinning teams responsible for blowroom, carding, drawing and yarn production on ring, rotor or air-jet frames
- Weaving, knitting and nonwoven teams responsible for loom, knitting machine and web forming line output
- Dyehouse and finishing teams responsible for pretreatment, dye recipes, machine loading and finished fabric release
- Textile laboratory and quality teams responsible for yarn, fabric and colour fastness testing and inspection
- Maintenance and utilities teams responsible for textile machinery, steam, water and effluent systems
- Production planning and process improvement teams responsible for mill efficiency and cost per kilogram

Course Outline:

Day 1: Textile Fibres, the Mill Process Chain and Current-State Review

- Mill Process Chain Map From Bale to Finished Roll
- Natural and Man-Made Fibre Property Comparison Chart
- Staple Length, Micronaire and Fibre Strength Test Interpretation
- Yarn Count Systems in Tex, Denier and Ne
- Mill Current-State Review Using Efficiency and Waste Data

Day 2: Yarn Formation Technology From Blowroom to Spinning Frame

- Blowroom Opening, Cleaning and Bale Laydown Mixing Plan
- Carding, Drawing and Combing Sliver Evenness Control
- Ring Spinning Draft, Twist Multiplier and Traveller Selection
- Rotor and Air-Jet Spinning Yarn Structure Comparison
- Yarn Evenness, Hairiness and Imperfection Test Reports

Day 3: Fabric Formation by Weaving, Knitting and Nonwoven Lines

- Warping, Sizing and Drawing-In Preparation for Weaving
- Rapier, Air-Jet and Water-Jet Loom Efficiency Analysis
- Weft and Warp Knitting Stitch Length and GSM Control
- Spunbond, Meltblown and Carded Web Forming Routes
- Needlepunch, Hydroentanglement and Thermal Bonding Selection Matrix

Day 4: Dyeing, Finishing Chemistry, Testing and Resource Use

- Desizing, Scouring, Bleaching and Mercerising Pretreatment Sequence
- Reactive, Disperse, Acid and Vat Dye Class Selection
- Jet, Soft-Flow, Pad-Batch and Continuous Dyeing Comparison
- ISO 105 and AATCC Colour Fastness Test Methods
- Liquor Ratio, Steam and Water per Kilogram Balance

Day 5: Inspection Walkthrough and Mill Improvement Plan Build

- Case Mill Data Pack of Yarn, Fabric and Dyehouse Records
- Fabric Defect Inspection Using Four-Point Grading System
- Shade Variation and Re-Dyeing Root Cause Analysis Walkthrough
- Productivity and Resource Use Target Setting per Department
- Mill Process and Fabric Quality Improvement Plan Defence

Skills You Will Gain:

- Fibre Property Evaluation
- Spinning Parameter Setting
- Loom and Knitting Efficiency Analysis
- Nonwoven Bonding Route Selection
- Dye Class and Method Selection
- Colour Fastness Test Interpretation
- Fabric Defect Grading
- Water and Energy Benchmarking

Why Attend This Course:

- Deliver a Mill Process and Fabric Quality Improvement Plan for a case plant to the mill manager and the heads of spinning, weaving and dyehouse
- Choose spinning systems, loom types, dye classes and dyeing methods from fibre data and fabric specifications rather than habit
- Avoid re-dyeing, rejected rolls, excess yarn breaks and unplanned water and steam use that raise cost per kilogram
- Pass on yarn test reading, four-point fabric grading and colour fastness assessment routines to shift supervisors and laboratory staff

Conclusion:

Back at the mill, the participant presents the Mill Process and Fabric Quality Improvement Plan to the mill manager and the heads of spinning, fabric forming, dyehouse and quality. They use it to decide which machine settings, recipes and test routines to change first, which efficiency, right-first-time and water and steam targets each department adopts and who owns each action. After the first production month under the plan, the mill should review yarn breaks, loom and knitting efficiency, first-time shade approval and resource use per kilogram, then reset the targets.

Frequently Asked Questions FAQ:

What should participants know before the textile manufacturing technology course?

Participants should already work in a spinning, weaving, knitting, nonwoven, dyehouse or textile quality role. Bringing anonymised yarn test reports, loom efficiency figures, dye recipes or fabric inspection records helps them apply the walkthrough exercises to their own mill.

How does textile manufacturing technology differ from a fashion merchandising or composite materials course?

It covers how fibre becomes yarn, fabric and finished cloth inside the mill. Fashion merchandising courses cover buying, range planning and store stock, and composite materials courses cover fibre-reinforced laminates for pipes, tanks and structures rather than apparel or technical fabrics.

Why does textile manufacturing technology track water and energy per kilogram?

Pretreatment, dyeing and finishing are the heaviest users of water, steam and electricity in a mill. Measuring them per kilogram of fabric shows which machines, liquor ratios and recipes waste resources and makes improvement targets comparable between shifts and products.

What do participants take back from the textile manufacturing technology course?

Participants take back a Mill Process and Fabric Quality Improvement Plan for a case plant, plus a fibre comparison chart, spinning parameter sheet, loom efficiency analysis, dye class selection table, colour fastness test checklist and a water and energy per kilogram balance.