

TEXTILE FUNDAMENTALS

Weeks 1-5: Unit I – Textile Fiber

Week 1

- **Lecture 1:** Definition and Characteristics of Textile Fibers
- **Lecture 2:** Classification of Textile Fibers Based on Origin
- **Lecture 3:** Physical and Chemical Properties of Cotton

Week 2

- **Lecture 4:** Physical and Chemical Properties of Wool
- **Lecture 5:** Physical and Chemical Properties of Silk
- **Lecture 6:** Comparison of Natural Fibers

Week 3

- **Lecture 7:** Physical and Chemical Properties of Polyester
- **Lecture 8:** Physical and Chemical Properties of Viscose
- **Lecture 9:** Physical and Chemical Properties of Acrylic

Week 4

- **Lecture 10:** Natural vs. Synthetic Fibers: Advantages and Disadvantages
- **Lecture 11:** Application of Different Fibers in the Textile Industry
- **Lecture 12:** Case Studies and Practical Insights

Week 5

- **Lecture 13:** Recap of Unit I
- **Lecture 14:** Practice Quiz on Textile Fibers
- **Lecture 15:** Group Discussion on Fiber Selection for Specific Applications

Weeks 6-11: Unit IV – Textile Processing

Week 6

- **Lecture 16:** Introduction to Textile Processing: Classification and Overview
- **Lecture 17:** Operation Sequence in Chemical Processing of Cotton
- **Lecture 18:** Desizing of Cotton: Purpose and Methods

Week 7

- **Lecture 19:** Scouring of Cotton: Objectives and Methods
- **Lecture 20:** Bleaching of Cotton: Techniques and Chemicals Used
- **Lecture 21:** Mercerization: Definition, Purpose, and Process

Week 8

- **Lecture 22:** Definition and Classification of Dyeing
- **Lecture 23:** Methods of Dyeing: Batch, Continuous, and Semi-Continuous
- **Lecture 24:** Common Dyes Used for Natural and Synthetic Fibers

Week 9

- **Lecture 25:** Definition and Classification of Printing
- **Lecture 26:** Printing Techniques: Direct, Resist, and Discharge
- **Lecture 27:** Advances in Digital Printing

Week 10

- **Lecture 28:** Troubleshooting Common Problems in Processing
- **Lecture 29:** Role of Sustainability in Textile Processing
- **Lecture 30:** Practical Overview of Chemical Processing

Week 11

- **Lecture 31:** Recap of Unit IV
- **Lecture 32:** Practice Quiz on Textile Processing
- **Lecture 33:** Group Activity: Designing a Processing Workflow

Weeks 12-16: Unit V – Textile Defects

Week 12

- **Lecture 34:** Types of Textile Defects: Major, Minor, and Critical
- **Lecture 35:** Weaving Defects: Causes and Prevention
- **Lecture 36:** Processing Defects: Causes and Prevention

Week 13

- **Lecture 37:** Dyeing Defects: Causes and Remedies
- **Lecture 38:** Printing Defects: Causes and Remedies
- **Lecture 39:** Finishing Defects: Causes and Remedies

Week 14

- **Lecture 40:** Role of Quality Control in Minimizing Defects
- **Lecture 41:** Case Studies on Textile Defects
- **Lecture 42:** Practical Session: Identifying Defects in Fabric Samples

Week 15

- **Lecture 43:** Review of Defects Across Production Stages
- **Lecture 44:** Group Discussion: Strategies for Reducing Defects
- **Lecture 45:** Practice Quiz on Textile Defects

Week 16

- **Lecture 46:** Comprehensive Recap of Entire Syllabus (Units I, IV, V)
- **Lecture 47:** Final Review and Practice Test
- **Lecture 48:** Exam Preparation and Doubt Clearing