

# CBSE | DEPARTMENT OF SKILL EDUCATION

## CURRICULUM FOR SESSION 2020-2021

### **TEXTILE DESIGN (SUBJECT CODE-829)**

**JOB ROLE: DESIGN ASSISTANT (APPAREL/TEXTILE)**

**CLASS – XI& XII**

#### **COURSE OVERVIEW**

This course is design for the students to learn skill and knowledge of development of new design aspects for novelty in fabric surface, textile products and various other textile materials. It includes designing of fabric used in clothing, house hold textiles, decorative textiles and others. The students are enabled to design intervention along with the development of the final product within the technical specification and right commercial value.

#### **OBJECTIVE**

India boasts of a rich textile and craft heritage. These traditions not only give meaning to the existence of India's people, but also provide domestic, social and religious framework. Hence textile crafts serve a dual role as they signify cultural values and at the same time it is an important source of livelihoods for economically challenged marginalized sections of the society. Crafts including weaving are the second largest employer after agriculture in India and provide livelihood to over 200 million Artisans. Textile printing or printed Textiles is as old as mankind. The earliest examples can be found as early as fifth century. Various records show that printed fabric did exist about 2500 B.C. It is believed that people of China and India were the first to make simple blocks for the printing of cotton cloth, and it is certain that Textile printing was a fairly established Industry in India during the earliest of the Christian era. Textile prints have played an important role in developing various surfaces. Each region has its own intrinsic style, color and pattern. In India, printed textiles are very popular and are printed in various styles and methods depending on the geographical region.

#### **SCHEME OF UNITS**

This course is a planned sequence of instructions consisting of units meant for developing employability and vocational competencies of students of Class XI opting for skill subject along with other education subjects.

The unit-wise distribution of hours and marks is as follows:

# CLASS – XI (SESSION 2020-2021)

Total Marks: 100 (Theory – 60+ Practical – 40)

TEXTILE DESIGN (SUBJECT CODE - 829) Class XI (Session 2020-21)				
	UNITS	NO. OF HOURS for Theory and Practical		MAX. MARKS for Theory and Practical
<b>Part A</b>	<b>Employability Skills</b>			
	Unit 1 : Communication Skills-III	10		10
	Unit 2 : Self-Management Skills-III	10		
	Unit 3 : ICT Skills-III	10		
	Unit 4 : Entrepreneurial Skills-III	15		
	Unit 5 : Green Skills-III	05		
	<b>Total</b>	<b>50</b>		
<b>Part B</b>	<b>Subject Specific Skills</b>	<b>Theory</b>	<b>Practical</b>	<b>Marks</b>
	Unit 1: Overview of Textile Industries and Textile Fibers	32	21	14
	Unit 2: Textile Spinning and Yarn	32	21	12
	Unit 3: Textile Weaving and Woven Fabrics	32	21	12
	Unit 4: Other Forms of Textiles	30	21	12
	<b>Total</b>	<b>126</b>	<b>84</b>	<b>50</b>
<b>Part C</b>	<b>PracticalWork</b>			
	Practical Examination			15
	WrittenTest			10
	Viva Voce			05
	<b>Total</b>			<b>30</b>
<b>Part D</b>	<b>ProjectWork/FieldVisit</b>			
	Practical File/Student Portfolio			10
	<b>Total</b>			<b>10</b>
	<b>GRAND TOTAL</b>	<b>260</b>		<b>100</b>

## DETAILED CURRICULUM/TOPICS FOR CLASS XI

### Part-A: EMPLOYABILITY SKILLS

S. No.	Units	Duration in Hours
1.	Unit 1: Communication Skills-III	10
2.	Unit 2: Self-management Skills-III	10
3.	Unit 3: Information and Communication Technology Skills-III	10
4.	Unit 4: Entrepreneurial Skills-III	15
5.	Unit 5: Green Skills-III	05
	<b>TOTAL DURATION</b>	<b>50</b>

**NOTE:** For Detailed Curriculum/ Topics to be covered under Part A: Employability Skills can be downloaded from CBSE website.

### Part-B – SUBJECT SPECIFIC SKILLS

- Unit 1: Overview of Textile Industries and Textile Fibers
- Unit 2: Textile Spinning and Yarn
- Unit 3: Textile Weaving and Woven Fabrics
- Unit 4: Other Forms of Textiles

#### **UNIT-1: OVERVIEW OF TEXTILE INDUSTRIES AND TEXTILE FIBERS**

##### **Objectives:**

- To familiarize the background of Indian Textile Industries.
- To learn and understand Textile terminology.
- To understand the sources and properties of Textile fibers.
- To predict the performances and characteristics of fabrics, according to fiber content for various end uses.

**Learning Outcomes:** After finishing the course, the students shall be able to

- use appropriate terminology used in Textile Application.
- understand the interrelationships in Textile Business.
- get an overview of Textile Industries in India.

##### **Course Content:**

- The major Textile Production Segments in India.
- Sources of Fabrics.
- Classification of Textile Fibers according to origin and chemical composition; Essential Properties and Performances of Textile Materials like Aesthetic, Durability, Comfort, Safety, Care and Maintenance Properties.
- Properties of Cotton, Flax, Hemp and Jute.
- Properties of Silk, Wool, Mohair and other Natural Fibers.
- Properties of Viscose Rayon, Loyocel and Acetate.
- Properties of Polyester, Nylon, Acrylic and Spandex.

## UNIT-2: TEXTILE SPINNING AND YARN

### Objectives:

- To familiarize Yarn Spinning Process.
- To understand the properties and characteristics of various types of yarns.

**Learning Outcomes:** After finishing the course, the students shall be able to

- understand basics of Yarn Manufacturing.
- predict and select different types of yarn for fabric development according to various end uses.

### Course Content:

- Classification of Yarns; Spun Yarn Production Process, Carded and Combed Yarns; Woollen and Worsted Yarns; Mono Filament and Multi Filament Yarns.
- Yarn Numbering Systems – Cotton Count, Metric Count, Denier, Tex and Deci- Tex. Single and Plied Yarns; Yarn Twist, Amount of Twist and Direction of Twist.
- Textured Yarns – Core Spun Yarn; Novelty and Fancy Yarns, Blended Yarns, Sewing Threads.

## UNIT-3: TEXTILE WEAVING AND WOVEN FABRICS

### Objectives:

- To familiarize the weaving process involved in producing Woven Fabrics.
- To understand the properties and characteristics of various types of Woven Fabrics.

**Learning Outcomes:** After finishing the course, the students shall be able to

- To predict and select different types of woven fabrics according to various end uses.
- To recognize and identify different types of woven fabrics.

### Course Content

- Preparatory to weaving, including High speed machines for Winding, Warping, Sizing, Beaming and Weft Winding.
- The Loom, types of Looms, classification and selvedge formations.
- Basic motions of the loom, including the application of Dobby and Jacquards. Non-automatic loom, Automatic loom, Shuttle less weaving machines, Terry looms and Drop box loom.
- Introduction to basic weaves; plain, basket, rib, twill, satin, sateen, dobby, jacquard, crepe, pique, seer sucker, terry, velvet and velveteen.

## UNIT-4: OTHER FORMS OF TEXTILES

### Objectives:

- To familiarize the basics of different types of Knitting and properties of knitted fabrics, and other forms of Textiles like Non-woven, Felt, Lace and Braids.

### Learning Outcome: After finishing the course, the students shall be able to

- To predict and select different types of Knitted, Non-woven, Felt, and Braid according to various end uses.
- To recognize and identify different types: Knitted, Non-woven, Felt, and Braid fabrics.
- Stitches.
- Properties of Weft Knitted Fabrics, Jersey, Rib, Purl and Interlock.
- Comparison and properties of Warp Knitted Fabrics.
- Non-Woven Fabrics – Methods and Materials to Manufacture Non-Woven Fabrics, Felt, Embroidery, Tufted Fabrics, Braids and other Narrow Fabrics.

### METHODOLOGY OF TEACHING:

- Illustrated lectures with slides and visuals along with fibers, yarns, woven, knitted non-woven, lace and braid fabric samples.
- A teacher would be expected to create a library of fabrics to explain and conduct the classes.
- Visit to textile mills & Industry.

### SUGGESTED LIST OF PRACTICALS:

- Experiment No. 1: To determine the chemical nature of fiber by burning test.
- Experiment No. 2: To determine the variation in staple lengths of natural fibers.
- Experiment No. 3: To determine the yarn fineness using direct count system.
- Experiment No. 4: To determine the yarn fineness using English count system (indirect).
- Experiment No. 5: To convert yarn fineness from direct count system into indirect count system and vice versa.
- Experiment No. 6: To determine the twist direction in yarn.
- Experiment No. 7: To determine the twist per unit length of a yarn.
- Experiment No. 8: To determine the difference between a staple fiber yarn and a filament yarn.
- Experiment No. 9: To differentiate between a single staple fiber yarn and a plied staple fiber yarn.
- Experiment No. 10: To determine the sequence of process and material flow in yarn manufacturing.
- Experiment No. 11: To measure the thread density in different kind of fabrics and compare according to end uses.
- Experiment No. 12: To identify the possible end-uses of woven, knitted and non-woven fabrics.

- Experiment No. 13: To measure grams per square meter (GSM) of different quality of fabrics and compare the weight according to end uses.
- Experiment No. 14: To analyze the design of different fabric samples.
- Experiment No. 15: To visit a fabric store or fabric department within a store and survey the various woven fabrics on display and note the wide variety of fabrics and possible end uses.
- Experiment No. 16: To find the fabric thickness of different fabrics.
- Experiment No. 17: To evaluate the wale and course per inch with the help of a pick glass.
- Experiment No. 18: To source fifteen different nonwoven fabrics from the market physically evaluate their possible end-uses.
- Experiment No. 19: To prepare a flow chart for weaving or knitting process in the industry.
- Experiment No. 20: To estimate the drape of various fabrics.

#### **REFERENCE BOOKS:**

- Textile Science, Students Handbook & Practical Manual, Class–XI, Published by CBSE

#### **MARKING SCHEME**

**Two Practical from each Section shall be Conducted.**

- (i) Session Work.
  - a. Maintenance of Record.
  - b. On the Lab Learning.
- (ii) Viva Voce
- (iii) All the laboratory experiments will carry five marks each, they should be evaluated on the basis of evenness of the dyeing and printing, neatness and cleanliness maintained during the practical

## CLASS – XII (SESSION 2020-2021)

Total Marks: 100 (Theory – 60+ Practical – 40)

<b>TEXTILE DESIGN (SUBJECT CODE - 829)</b>				
<b>Class XII (Session 2020 – 2021)</b>				
	<b>UNITS</b>	<b>NO. OF HOURS for Theory and Practical</b>		<b>MAX. MARKS for Theory and Practical</b>
<b>Part A</b>	<b>Employability Skills</b>			
	Unit 1 : Communication Skills-III	10		10
	Unit 2 : Self-Management Skills-III	10		
	Unit 3 : ICT Skills-III	10		
	Unit 4 : Entrepreneurial Skills-III	15		
	Unit 5 : Green Skills-III	05		
	<b>Total</b>	<b>50</b>		<b>10</b>
<b>Part B</b>	<b>Subject Specific Skills</b>	<b>Theory</b>	<b>Practical</b>	<b>Marks</b>
	Unit1:Introduction to Chemical Processing: Pre-treatments	20	10	8
	Unit2: Textile Dyeing	30	17	12
	Unit3: Textile Printing	28	20	11
	Unit 4: Introduction to Print Design and Print Design Techniques.	28	20	11
	Unit 5: Embroidered Textiles	20	17	8
	<b>Total</b>	<b>126</b>	<b>84</b>	<b>50</b>
<b>Part C</b>	<b>PracticalWork</b>			
	Practical Examination			15
	WrittenTest			10
	Viva Voce			5
	<b>Total</b>			<b>30</b>
<b>Part D</b>	<b>ProjectWork/FieldVisit</b>			
	Practical File/Student Portfolio			10
	<b>Total</b>			<b>10</b>
<b>GRAND TOTAL</b>		<b>260</b>		<b>100</b>

## DETAILED CURRICULUM/TOPICS FOR CLASS XII

### Part-A: EMPLOYABILITY SKILLS

S. No.	Units	Duration (in Hours)
1.	Unit 1: Communication Skills- IV	10
2.	Unit 2: Self-management Skills- IV	10
3.	Unit 3: Information and Communication Technology Skills- IV	10
4.	Unit 4: Entrepreneurial Skills- IV	15
5.	Unit 5: Green Skills- IV	05
	<b>TOTAL DURATION</b>	<b>50</b>

**NOTE:** For Detailed Curriculum/ Topics to be covered under Part A: Employability Skills can be downloaded from CBSE website.

### Part-B – SUBJECT SPECIFIC SKILLS

- Unit 1: Introduction to Chemical Processing: Pre-treatments
- Unit 2: Textile Dyeing
- Unit 3: Textile Printing
- Unit 4: Introduction to Print Design and Print Design Techniques.
- Unit 5: Embroidered Textiles

### DETAILED CURRICULUM:

#### UNIT 1 – INTRODUCTION TO CHEMICAL PROCESSING: PRE-TREATMENTS

##### Course Content:

- Textile chemical processing for fibers.
- Impurities present in the Natural and Synthetics Fibers.
- Elementary knowledge of processing.
- Different processes e.g., singeing, de-sizing, scouring, bleaching and mercerizing.

**Learning Outcomes:** After finishing the course, students will be able to understand.

- Various technical terminology used in the industry.
- Various types of impurities present in the Substrates.
- The processes involved in removing impurities.



## UNIT-2: TEXTILE DYEING

### Course Content:

- Introduction to traditional resist dyed textiles (Tie and Dye) textiles from different regions of India.
- Suitability of dyes and dyeing methods, Important classes of dyes for natural and man-made fibers, e.g., direct, acid, basic, vat, azoic, sulfur and dispersed dyes.

**Learning Outcomes:**After finishing the course, students will be able to

- Dye all kinds of Textile Fabrics.
- Select dyes as per the type of fabrics.

## UNIT-3: TEXTILE PRINTING

### Course Content:

- Introduction to various methods of printing, specific features and limitations of various methods, Such as Hand Block Printing (different styles on the basis of region), Hand Screen printing, Roller Printing and Heat Transfer Printing.
- Style of Printing (Direct Prints, Discharge Prints, Resist Prints, Warp Prints, Blotch Prints, Duplex Prints) & their Specific feature for their Identification.

**Learning Outcomes:**After finishing the course, students will be able to understand

- Various terminology used in textile printing.
- Styles and methods involved in printing.
- Various effects produced by various styles of prints.
- Limitation of the printing methods.

## UNIT-4: INTRODUCTION TO PRINT DESIGN AND PRINT DESIGN TECHNIQUES.

### Objectives of the Course:

- Understanding Textile Design, repeat and layout.
- To develop an understanding for surface design development.
- To sensitize students towards various types of Prints.
- To understand forms, shape and color combinations for various categories.
- To sensitize students towards specific influencing forms, objects and shapes.
- To develop an ability to recognize the design in each type of print.

**Learning Outcomes:**After finishing the course, students will be able to

- Identify the pattern, repeat and layout.
- After completing the unit, the students shall be able to.
- Understand forms and color combinations.
- Develop an understanding for various categories of prints.
- Identify the types of prints.

## Course Content

- Various aspects of Design: color wheel, layout and repeats.
- Print Categories
  - Introduction to various types of Design and their categories.
  - Geometric prints.
  - Floral prints
  - Animal prints.
  - Ethnic prints.
  - Dot prints
- Print Design Techniques
  - Etching Technique
  - Stamping and Sponge Technique
  - Dry Brush Technique and Stencil Technique
  - Collage Technique

## Methodology of Teaching:

- Illustrated lectures
- Demonstration and Practical Assignments

## Reference Books:

- S. Meller, J. Elfers Thames and Hudson Ltd. Textile designs – 200 years of patterns for Textiles.
- Carol Joyce – Watson- Guptill publication– 1997, the complete Guide to Printed Textile for apparel and Home Furnishing.

## UNIT 5: EMBROIDERED TEXTILES

### Objectives of the unit:

- To introduce the technique of embroidery for value-addition.
- To create awareness about the different embroidered textiles of India.
- To initiate identification of regional embroideries developed by various communities.
- To understand the origin of technique and design with reference to colours, motifs, layouts of different embroidered textiles.

**Learning Outcomes:** After completing the unit, the students shall be able to

- Classify the regional embroideries of India.
- Identify a specific embroidery style of India on the basis of colours, motifs and layout.
- Identify the influencing factors for development and evolution of a specific embroidered textile.

## Course Content

- Introduction to traditional embroidered textiles from different regions of India.
  - Kashida from Kashmir
  - Phulkari from Punjab
  - Kantha from West Bengal.
  - Chikankari from Uttar Pradesh
- Study of above mentioned regional embroideries with reference to origin, technique, raw material, colours, motifs and layout.

## Methodology of Teaching

- Illustrated lectures.
- Visit to local museums/exhibitions of craft based products.

## PRACTICALS

(Max Marks 40)

1. Dyeing of cotton fabric with direct dyes.
2. Arrange a workshop related to shade matching.
3. Introduce students about different colour schemes, layout and repeats.
4. To learn to use the blocks to design, different repeats.
5. To introduce the technique of tie & dye (Resist Dyeing) with Direct Dyes.
6. Make a print category scrap book of approx 12 pages. Collect fabric samples of each category of print from the cloth market, old clothes etc. cut each sample into 5"X5" and paste them in scrap file.
7. Prepare 2 sheets of each category of print and paste them in a scrap book.
  - Geometric Prints
  - Floral Prints
  - Animal Prints
  - Ethnic Prints
  - Dots Prints
8. Make a scrap book containing 2 sheets of each innovative technique Via:
  - Etching Technique
  - Dry Brush and Stencil Technique
  - Stamping Technique
  - Collage Technique
9. Make an article using
  - Screen printing technique
  - Stencil printing
  - Block Printing
10. Make the samples of Traditional Embroiders
  - Kantha from West Bengal
  - Chikankari from Uttar Pradesh
  - Phulkari from Punjab
  - Kashida from Kashmir
11. Develop an understanding about combination of traditional Indian Techniques and Modern textile Techniques. Prepare an article based on this concept.
12. Visit to an exhibition/ museum and prepare a file.
13. On the Job Training/ Industry Visit (8 Weeks)