TEXTILE DESIGN (Code-829)
SESSION-2019-20
Job Role: Design Assistant (Apparel/Textile)

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.

Class XI (2019-20)

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

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 vocational subject along with general education subjects. The unit-wise distribution of hours and marks for **class XI** is as follow:

Textile Design (829) CLASS XI session 2019-20				
	Units	No. of Periods for Theory and Practical 260		Max. Marks for Theory and Practical 100
Part A	Employability Skills			
	Unit 1 : Communication Skills-III	10		10
	Unit 2 : Self-Management Skills-III	10		
	Unit 3 : Information and Communication Technology Skills-III	10		
	Unit 4 : Entrepreneurial Skills-III	15		
	Unit 5 : Green Skills-III	05		
	Total	50		10
Part B		Theory Periods	Practical Periods	
	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
	Total	**126**	**84**	**50**
Part C	**Practical Work**			
	Practical Examination			15
	Written Test			10
	Viva Voce			05
	Total			**30**

Part D	**Project Work/Field Visit**			
	Practical File/ Student Portfolio			10
	Total			**10**
	Total	**260**		**100**

Note:-Detailed Curriculum/ Topics to be covered under employability skill can be downloaded for CBSE website.

Part B Total Marks-50

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 Outcome

After finishing the course, the students shall be able.

- To use appropriate terminology used in Textile Application.
- To understand the interrelationships in Textile Business.
- To 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 Outcome

After finishing the course, the students shall be able.

- To understand basics of Yarn Manufacturing.
- To 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 Outcome

- 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

- 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.

Course Content

- Difference between Woven and Knitted fabrics.

- General knitting terms: types of knitting machines, circular and flat machines.
- Types of Knitting 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.

PRACTICAL

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.

Maintenance of Record.

On the Lab Learning.

(ii) Viva Voice.

(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