

SENIOR SCHOOL CURRICULUM

2017-18

TEXTILE DESIGN

CLASS–XI

1	2	3			4				5
S. No.	Subject	Period/Week			Examination				Total Marks
		Th.	Pr.	Total	Marks (Th.)	Hrs.	Marks (Pr.)	Hrs.	
1.	Element of Textile Design	4	3	7	50	2.5	50	2.5	100
2.	Textile Science	4	3	7	50	2.5	50	2.5	100
3.	Woven Textiles	3	4	7	50	2.5	50	2.5	100

CLASS–XII

1	2	3			4				5
S. No.	Subject	Period/Week			Examination				Total Marks
		Th.	Pr.	Total	Marks (Th.)	Hrs.	Marks (Pr.)	Hrs.	
1.	Printed Textile	3	4	7	50	2.5	50	2.5	100
2.	Traditional Indian Textile	4	3	7	50	2.5	50	2.5	100
3.	Textile Chemical Processing	3	4	7	50	2.5	50	2.5	100

CLASS–XI ELECTIVE

ELEMENT OF TEXTILE DESIGN (777)

Objectives of Units

Introduction

Textile design involves a complete vision 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. It involves design intervention along with the development of the final product within the technical specification and right commercial value.

In order to create innovative surfaces and structures, “Elements of design” course is introduced as an elementary course. The course will provide an overview of Textile Design, Designer and Textile Industry. The overall objective of

this course is to understand the basics of design in relation with textiles, textile design and related terminology and the overall work pattern of textile industry.

THEORY

Time: 2.5 Hours

Marks: 50

Unit-1: Introduction to Textile Industry

15

Objectives

- To understand the historical background of textiles.
- To get an overview of the textile industry and related industries.
- To get familiar with various textile materials and processes.
- To gain knowledge about textile design as a field.
- To understand the textile design as a profession and the role of Textile designers in Textile and Fashion Industry.
- To understand the work structure, timing and planning in Textile industry.
- To develop knowledge of forecast and market trends, its importance and need in Textile industry.

Learning Outcome

After finishing the course students shall be able.

- To understand the overview of Textile industry including history and current industry scenario.
- To learn about the terminology associated with textile design material, process etc.
- To understand the importance of market and trends and enhance observational skills.
- To understand the Textile industry functional aspects and roles and responsibilities of a designer.

Course Content

- An Overview of Textiles, history and industrial background.
- Textile designer role responsibilities.
- Textile material and process.
- Textile industry work structure, time and planning.
- Importance of market trend and forecast.

Teaching Methodology

- Class lectures and Practical demonstrations.
- Class-room quiz.
- Presentations and Discussions in class.
- Review and Feedback on assignments.
- Market visit, Survey and Field visits to relevant Textile Manufacturing unit, museums etc.

Evaluation Criteria

- Written theory test: knowledge and understanding.
- Discussion and quiz: understanding.

Unit-2: The Primary Components of Textile Design

7

Objectives

The main objective of this unit is to develop an understanding of the primary components of textile design, and the related process. The basic of textile design knowledge is essential and useful for further application in various sectors of textile design.

- To develop an understanding for the components of textile design, and the related process.
- To introduce the students to the basic principle and elements of design.
- To develop interesting compositions using forms and colour.
- To develop sensitivity among the students for better understanding of forms and its application for creating visual images of great value.

Learning Outcome

After finishing the course students shall be able.

- To understand the application of design elements and principles for textile designing.
- To get familiar with the design process and to make design ideas using innovative material and techniques.
- To enable students to work on various design compositions.

Course Content

- Elements of design.
- Principles of design.

Teaching Methodology

- Class lectures and practical demonstrations.
- Class-room assignments to create designs for specific textile product. Display, presentations and discussions in class.
- Review and feedback on assignments.
- Market visit, survey.
- Visits to design houses (if possible).
- Special lectures and presentations by textile professionals.

Evaluation Criteria

- Written theory test: knowledge and understanding.
- Practical assignments: application and skills.
- Design assignments: innovation in design ideas, creativity and functionality.
- Display and presentation: neatness and visual impact.

Unit-3: Textile Design Development

6

Objectives

The main objective of this unit is to develop an understanding of the components of textile design through a complete process for creation of textile design patterns, repeats, various layouts, use of colors, creation of color ways for generating variety and the inspiration of design.

- To develop an understanding for the components of textile design, and the related process.
- To enable the students to utilize the principals and elements of design in application of textile design development.

- To develop interesting compositions using forms and colour.
- To develop sensitivity among the students for a wholesome understanding of the textile design process.
- Developing sensitivity to take various inspirations for development of design.

Learning Outcome

After finishing the course students shall be able.

- To understand the application of design elements and principles for textile designing.
- To get familiar with the design process and to make design ideas using innovative material and techniques.
- To enable students to work on various design compositions, repeats, layouts and color ways.

Course Content

1. Elements of textile design such as repeats, layouts and colour ways.
2. Inspiration for design and design process.

Teaching Methodology

- Class lectures and practical demonstrations.
- Class-room assignments to create designs for specific textile product.
- Display, presentations and discussions in class.
- Review and feedback on assignments.
- Market visit, Survey and field visits to Textile stores.
- Visits to design houses (if possible).
- Special lectures and presentations by textile professionals.

Evaluation Criteria

- Written theory test: understanding.
- Practical assignments: application and skills.
- Design assignments: innovation in design ideas, creativity and functionality.
- Display and presentation: neatness and visual impact.

Unit-4: Design for Various Types of Textile

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Objectives

The main objective of this unit is to get an overview of the various types of textiles available in industry. It includes study of knits, woven, printed, embellished and resist textiles. This unit diversifies textiles through explaining various techniques and technology in textiles. The aim is also to understand the professional aspects of the work standards and methods existing in textile industry at present.

- To develop an understanding for the variety available in textiles.
- To enable the students to gain the knowledge of various techniques and methods of creating various types of textiles.
- To develop understanding of textile terminology.
- To develop understanding of professional aspects of the work practices existing in textile industry in current scenario.
- Developing textile technique skills through practical application.

- Developing communication skills and ability to use right terminology for an effective Design presentation.

Learning Outcome

After finishing the course students shall be able.

- To understand the application of various techniques available in textile industry.
- To be able to differentiate among various textiles by looking at technique of making and design aspects.
- To enable students to realize professional aspects of the work standards in textile industry at present.
- To be able to make an effective design presentation.

Course Content

1. Types of various available Textiles by techniques.
2. Presentation of Design and Professional Practices.

Teaching Methodology

- Class lectures and practical demonstrations.
- Class-room assignments to create designs for specific textile product using specific techniques.
- Display, presentations and discussions in class.
- Review and feedback on assignments.
- Market visit, Survey and field visits to nearby Textile manufacturing units.
- Visits to design houses (if possible).
- Special lectures and presentations by textile professionals.

Evaluation Criteria

- Written theory test: understanding.
- Practical assignments: application and skills.
- Design assignments: innovation in design ideas, creativity and functionality.
- Display and presentation: neatness and visual impact.

PRACTICAL

Time: 2.5 Hours

Marks: 50

Practical No. 1:

5

- Understanding textiles from various perspectives.

Practical No. 2:

5

- To understand textile design profession, role and responsibilities of textile designer.

Practical No. 3:

5

- To understand basic language of design and the important terms associated with it.

Practical No. 4:

5

- Practical application of elements of design in textile design.

Practical No. 5:

5

- To understand woven fabric, the type of woven fabrics available as per the technique of weaving.

Practical No. 6: **5**

- To introduce knitted fabrics.

Practical No. 7: **5**

- To understand design terminologies related to printed textiles.

Practical No. 8: **5**

- To learn various methods of resisting the fabric and its application in textile design.

Practical No. 9: **5**

- To develop understanding for various types of embellishment techniques on textiles.

Practical No. 10: **5**

- To understand the Textile designers professional practices.

Prescribed Reference Text

- Elements of Textile Design, Student Handbook & Practical Manual, Published by CBSE.

CLASS–XI **WOVEN TEXTILE (778)** **(ANYONE FROM WOVEN TEXTILE OR TEXTILE SCIENCE)**

Preamble

- To Introduce weaving and weaving terminologies.
- To familiarize students to weaving technology, looms category and the preparatory processes.
- To gain an overview of the various woven structures.
- To introduce scope of Woven design industry.

THEORY

Time: 2.5 Hours

Marks: 50

Unit–1: Introduction of Woven Textiles

10

Objective

- The unit deals with all the important definitions of woven textiles and various associated terminologies.
- To sensitize students towards fabric classification and different fiber types.
- Introduction of looms and its parts.

Course Content

1. Introduction to Textiles

- (a) Introduction to textiles and various terminologies.
- (b) The classification of textiles in terms of Woven and Non-Woven on the basis of fiber / yarn types.

2. Introduction to Weaving
 - (a) Understand weaving, its history in terms of traditional weaving and the impact of Industrial Revolution.
3. Looms
 - (a) What is a loom.
 - (b) Its classifications on the basis of shuttle and shuttle less looms, power loom, handloom, tappet, jacquard and doobby.

Learning Outcome

At the end of the unit the student shall be able.

- To differentiate types of woven fabrics.
- To understand weaving technology.
- To classify and identify various looms.

Teaching Methodology

- Illustrated lectures with power point presentations.
- The teacher shall plan a visit to a weaving unit of a composite textile mill.
- The teacher would be expected to create a library of fabrics to explain.

Assignment

- **Preparation of Fabric swatch book:** 10 sourced fabric swatches (8"x8") of woven, knitted and fused fabrics. The swatches should be made of different fiber and yarns.
- **Group Assignment:** Presentation by a group of 5-6 students. The group shall make a presentation on one type of Loom.

Evaluation Criteria

- Selection of swatches, identification, classification and presentation as a swatch book.
- Presentation – verbal presentation, visual presentation, understanding of the topic, group management.
- Quality of work submitted.
- Viva- voice for swatch book and presentation.

Unit-2: Weaving Technology

15

Objective

- The unit will introduce the students to various loom mechanisms and weaving terminologies.
- Looms classifications and loom parts.
- To introduce yarn preparatory - an important prerequisite for weaving.

Course Content

1. Weaving Mechanism.
 - (a) Complete loom details – its parts, motions and other terminologies associated with weaving.
2. Loom Preparatory.
 - (a) Processes involved in preparation of loom for weaving – winding, warping, weft preparatory and denting.
3. Weaving terminologies.

- (a) Ends / Warp.
 - (b) Picks / Weft.
 - (c) Selvedge.
 - (d) Fabric Construction – Ends / Inch and Picks / Inch.
 - (e) Reed Count and warping calculations.
4. Introduction to Weave Design.
- (a) Usage of Point Paper/Graph Paper/Design Paper.
 - (b) Methodology of Interlacement of Warp and Weft.
 - (c) Construction of Fabric.
 - (d) Design, draft and peg plan preparation.
 - (e) Different types of draft plan.

Learning Outcome

At the end of the unit the students shall know.

- Complete details about Looms and its parts.
- The preparatory procedures for weaving.
- The process involved in preparing design, draft and peg plan.

Teaching Methodology

- Illustrated lectures with Power Point presentations.
- Visit to a composite textile mill – Preparatory Unit.

Assignment

- Setting up of loom – the student will individually set up a loom- three meters of warp, for eight inch wide swatches.

Evaluation Criteria

- Daily assessment on presentation of work.
- Level of improvement if required.
- Punctuality, regularity and sincerity.
- Quality of loom setup.

Unit–3: Fabric Structure

15

Objective

- To introduce fabric structures and design development.
- To develop plain, twill and sateen weave structure using point paper.

Course Content

1. Introduction to Plain Weave.
 - (a) Characteristics of Plain Weave.
 - (b) Ornamentation of Plain Weave.
 - (c) Derivatives of Plain Weave.
2. Introduction to Twill Weave.

3. Characteristics of Twill Weave.
 - (a) Derivatives of Twill Weave.
4. Introduction to Satin Weave.
 - (a) Characteristics of Sateen.
 - (b) Irregular Satin/Sateen.

Learning Outcome

At the end of the unit the students shall know.

- The three basic fabric structures.
- How to draw the structures on design paper.
- How to prepare design, draft and peg plan.

Teaching Methodology

- Illustrated lectures with Power Point Presentations.
- The teacher would be expected to create a library of fabrics to explain and conduct the class.
- The swatches should be collected in terms of the different designs – stripes, checks, textures and other related designs which can be developed using these three weave structures.

Assignment

- Weaving practical – to weave 3 swatches of 8”x8” of plain, twill and sateen weave.
- Preparation of document of the woven swatches.

Evaluation Criterion

1. Quality of weaving.
2. Quality of documentation.
3. Regularity and sincerity.

Unit-4: Woven Fabric and End Uses

10

Objective

- To introduce the students to the commercial aspect of the woven textiles.
- This unit will introduce the students to woven structures and usage of computer for making the designs.

Course Content

- Woven Structures and development of woven design on Computer.
- Overview of the Textile industry.

Learning Outcome

At the end of the unit, the students shall be able.

- To identify Fabric types and product categories.
- To identify fabric as per end use.
- To develop design on computer.

Teaching Methodology

- Illustrated lectures with Power Point Presentations.

Assignment

- **Preparation of Fabric swatch book** – 10 fabrics swatches (8”x8”) of plain, twill and sateen. The swatches should be of different types in terms of design patterns.
- **Suggestive** – 1-2 swatches could be “NEW DESIGN” as identified by the students.

Evaluation Criteria

- Selection of swatches.
- Identification and classification of Fabrics.
- Presentation as a swatch book.

PRACTICAL

Time: 2.5 Hours

Marks: 50

Unit–1:

- **Assignment No.1:** To understand the different materials (Fiber Types) used to make a fabric and study its characteristics. 2
- **Assignment No.2:** To study and understand the different types of looms. 2

Unit–2:

- **Assignment No. 3:** To understand working of a textile unit as studied in the textbook. 2
- **Assignment No. 4:** To gain knowledge and visualize the effect of interlacing of material. 2
- **Assignment No. 5:** Set up the loom to be used for weaving in the next assignments. 3

Unit–3:

Part A

- **Assignment No. 6:** Use graph paper to draw plain weave with drafting and peg plan. 4
- **Assignment No. 7:** Draw 5 regular or irregular Mat weaves/Warp Ribs/ Weft Ribs with drafting and peg plan. 4
- **Assignment No. 8:** Draw 5 Balanced/ 5 Un balanced/ "S" Twill/ 5 "Z" Twill with drafting and peg plan. 4
- **Assignment No. 9:** Draw 5 regular and irregular sateen weave/ satin weave with drafting and peg plan. 4

Part B

- **Assignment No. 10:** Sample weaving - Plain Weave. 4
- **Assignment No. 11:** Sample weaving - Mat Weave. 4
- **Assignment No. 12:** Sample weaving - Rib Weave. 4
- **Assignment No. 13:** Sample weaving - Twill Weave. 4
- **Assignment No. 14:** Sample weaving - Sateen Weave. 4
- **Assignment No. 15:** To study the different variety of fabric as available by their commercial names. 3

Reference Material

- Woven Textile (Handbook and Practical Manual), Class–XI, Published by CBSE.

CLASS–XI
TEXTILE SCIENCE (779)
(ANYONE FROM WOVEN TEXTILE OR TEXTILE SCIENCE)

Preamble

Since clothing and home furnishings make up a major portion of the family budget, knowledge of textiles is as appropriate for consumers who wish to purchase wisely as it is for those whose career interests lie in textiles. The marketers of textile fibers, fabrics, and finished goods must all be familiar with the manufacturing methods, construction, and finishing techniques which affect the performance of textile products.

The objective of this course is to understand the raw materials - fibers, fiber source and properties. The conversion of fiber into yarn, yarn spinning processes conversion of yarn for fabric developments (like woven, knit and other forms of fabrics). At the end of the course the students shall be able to understand integration of fiber, yarn and various forms of fabrics and will be able to integrate fabric properties, characteristics, performances and behavior according to various end uses for Apparel and Home furnishing products.

THEORY

Time: 2.5 Hours

Marks: 50

Unit–1: Overview of Textile Industries and Textile Fibers

10

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

20

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

10

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

10

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

Time: 2.5 Hours

Marks: 50

Experiment No. 1:	3
<ul style="list-style-type: none"> • To determine the chemical nature of fiber by burning test. 	
Experiment No. 2:	3
<ul style="list-style-type: none"> • To determine the variation in staple lengths of natural fibers. 	
Experiment No. 3:	3
<ul style="list-style-type: none"> • To determine the yarn fineness using direct count system. 	
Experiment No. 4:	3
<ul style="list-style-type: none"> • To determine the yarn fineness using English count system (indirect). 	
Experiment No. 5:	2
<ul style="list-style-type: none"> • To convert yarn fineness from direct count system into indirect count system and vice versa. 	
Experiment No. 6:	3
<ul style="list-style-type: none"> • To determine the twist direction in yarn. 	
Experiment No. 7:	3
<ul style="list-style-type: none"> • To determine the twist per unit length of a yarn. 	
Experiment No. 8:	2

- To determine the difference between a staple fiber yarn and a filament yarn.

Experiment No. 9: **2**

- To differentiate between a single staple fiber yarn and a plied staple fiber yarn.

Experiment No. 10: **2**

- To determine the sequence of process and material flow in yarn manufacturing.

Experiment No. 11: **2**

- To measure the thread density in different kind of fabrics and compare according to end uses.

Experiment No. 12: **2**

- To identify the possible end-uses of woven, knitted and non-woven fabrics.

Experiment No. 13: **3**

- To measure grams per square meter (GSM) of different quality of fabrics and compare the weight according to end uses.

Experiment No. 14: **2**

- To analyze the design of different fabric samples.

Experiment No. 15: **2**

- 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: **3**

- To find the fabric thickness of different fabrics.

Experiment No. 17: **3**

- To evaluate the wale and course per inch with the help of a pick glass.

Experiment No. 18: **2**

- To source fifteen different nonwoven fabrics from the market physically evaluate their possible end-uses.

Experiment No. 19: **3**

- To prepare a flow chart for weaving or knitting process in the industry.

Experiment No. 20: **2**

- To estimate the drape of various fabrics.

Reference Books

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

CLASS–XI
GENERAL FOUNDATION COURSE (501)

Part-I: (Compulsory to all Vocational Courses)

Marks: 50

- A. Business Management and Entrepreneurship** **30**
- (a) **Entrepreneurship Orientation** **5**
Importance and relevance in real life: Emphasis on self employment.
- (b) **Entrepreneurship Values and Attitudes** **5**
Innovativeness, Independence, Risk Taking, Analytical ability.
- (c) **Entrepreneurial Motivation** **5**
Achievement Planning, personal efficacy, entrepreneurial goal setting.
- (d) **Launching of a Business Venture** **15**
Identification of project, steps in setting up a business, information about various institutions providing assistance, project formulation.
- B. Computational Skills** **10**
- (a) Percentage, ratio & proportion, profit & loss, discount, simple and compound interest, population growth and depreciation of value of articles using logarithm. **6**
- (b) Area and volume: rectangle, parallelogram, circle, cube, cone, cylinder & sphere. **4**
- C. Environmental Education** **5**
- (a) Environment and the society.
- (b) Environment properties risks in different economic enterprises, in use of raw materials, in processing / manufacturing and designing.
- (c) Poverty and environment.
- D. Rural Development** **5**
- (a) Agriculture, the back bone of Indian Economy.
- (b) Rural development projects in India including Integrated rural development programme.
- (c) Agro based rural industries.
- (d) Community approach to rural development.

Part-II

Marks: 50

- I. Origin of early Textile fibers and development of: **10**
- Cotton in India.
 - Silk in China.
 - Linen in Egypt.
- II. Historical background and study of the characteristics of traditional Indian Textiles. **5**
- III. Traditional Embroidered Textiles of India study with respect to their Historical Development, techniques, stitches, fabrics, colours and symbolism: **30**
- Kasuti of Karnataka.
 - Kantha of Bengal.
 - Phulkari of Punjab.
 - Embroideries of Kashmir: Kashida, Zalakdozi, Zardozi.
 - Gujarat Embroideries.
 - Chamber Rupal of Himachal.

- Chikankari of U.P.
- Applique of Orrisa.
- Banjara Embroideries of Andhra Pradesh.
- Embroideries of Rajasthan and
- Sujini and applique of Bihar.

IV. Catalogue of the designs collected from various sources depicting the embroidered art of India.

5

CLASS–XII ELECTIVE TRADITIONAL INDIAN TEXTILE (777)

Preamble

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 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.

The course on 'Traditional Indian Textiles' will initiate students to the world of textile crafts of India, through an appreciation of its unfolding through the ages in order to make them understand finer nuances of painted, printed & woven traditional textiles crafts.

THEORY + PRACTICAL

Time: 2.5 Hours+2.5 Hours

Theory: 50 Marks + Practical: 50 Marks

Unit–1: Embroidered Textiles

10+10

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.
- To learn about the evolution of embroidered textiles over a period of time.

Learning Outcomes

After completing the unit, the students shall be able to.

- Appreciate the finer nuances of embroideries.
- 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.

- Categorization of embroidery styles on the basis of region:
 - (a) North India:
 - (i) Kashida from Kashmir.
 - (ii) Phulkari from Punjab.
 - (iii) ChambaRumal from Himachal Pradesh.
 - (b) Western India:
 - (i) Embroidery from Gujarat.
 - (ii) Parsi embroidery.
 - (c) Central India:
 - (i) Chikankari from Uttar Pradesh.
 - (ii) Patti kaKaam from Uttar Pradesh.
 - (iii) Zardozi from Uttar Pradesh.
 - (d) Southern India:
 - (i) Kasuti from Karnataka.
 - (ii) Lambadi embroidery from Andhra Pradesh.
 - (e) Eastern India:
 - (i) Kantha from West Bengal.
 - (ii) Sujani from Bihar, Pipli appliqué from Orissa.
- Study of the above mentioned regional embroideries with reference to origin, technique, raw material, colours, motifs and layout.
- Overview of the historic embroidered textiles and the contemporary scenario.

Methodology of Teaching

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

References

- Traditional Indian Textiles, Students Handbook & Practical Manual, Published by CBSE.

Unit–2: Resist Dyed Textiles

15+15

Objectives of the Unit

- To introduce the technique of resist dyeing for value-addition.
- To create awareness about the different resist dyed textiles of India.
- To initiate differentiation between yarn resist dyed (Ikat) and cloth resist dyed textiles (Bandhej).
- To understand the origin of technique and design with reference to resist dyed textiles.
- To learn about the evolution of resist dyeing over a period of time.

Learning Outcomes

After completing the unit, the students shall be able to.

- Understand the finer nuances of resist dyed textiles.

- Classify the regional tie-dyed textiles of India.
- Identify specific ikat textiles of India on the basis of technique, colours, patterns and layout.
- Identify specific tie-dyed textiles of India on the basis of technique, colours, patterns and layout.
- Identify the influencing factors for development and evolution of a specific resist-dyed textile.

Course Content

- Introduction to traditional resist-dyed textiles from different regions of India.
- Categorisation of ikat styles on the basis of region:
 - (a) Patola from Gujarat.
 - (b) Bandhas from Odisha.
 - (c) Pochampalli & TeliaRumal from Andhra Pradesh.
- Categorisation of tie-dyed textiles on the basis of region:
 - (a) Bandhani from Gujarat.
 - (b) Bandhej & Leheriya from Rajasthan.
- Study of the above mentioned resist-dyed textiles with reference to origin, technique, raw material, colours, patterns and layout.
- Overview of the historic resist-dyed textiles and the contemporary scenario.

Methodology of Teaching

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

References

- Traditional Indian Textiles, Students Handbook & Practical Manual, Published by CBSE.

Unit-3: Printed Textiles

15+

Objectives of the Unit

- To introduce the technique of hand block printing for value-addition.
- To create awareness about the different printed textiles of India.
- To initiate differentiation between direct and resist style of printing.
- To understand the origin of technique and design with reference to block printed textiles.
- To learn about the evolution of block printing over a period of time.

Learning Outcomes

After completing the unit, the students shall be able to.

- Understand the finer nuances of block printed textiles.
- Classify the regional block printed textiles of India.
- Identify specific block printed textiles of India on the basis of technique, colours, motifs and layout.
- Identify the influencing factors for development and evolution of a specific block printed textile.

Course Content

- Introduction to traditional block printed textiles from different regions of India.
- Categorization of block printing styles on the basis of region:
 - (a) Bagru prints from Rajasthan.
 - (b) Sanganer prints from Rajasthan.
 - (c) Kalamkari from Andhra Pradesh.
- Study of the above mentioned block printed textiles with reference to origin, technique, raw material, colours, motifs and layout.
- Overview of the historic block printed textiles and the contemporary scenario.

Methodology of Teaching

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

References

- Traditional Indian Textiles, Students Handbook & Practical Manual, Published by CBSE.

Unit-4: Hand-Woven Textiles

10+10

Objectives of the Unit

- To introduce the technique of handloom weaving in India.
- To create awareness about the different handlooms used for weaving.
- To initiate identification of regional variations practiced by various weaving communities.
- To understand the origin of technique and design with reference to colours, motifs, layouts of different hand-woven textiles.
- To learn about the evolution of hand-woven textiles over a period of time.

Learning Outcomes

After completing the unit, the students shall be able to.

- Appreciate the finer nuances of handloom weaving.
- Classify the regional weaves of India.
- Identify the different handlooms used in India.
- Identify a specific hand-woven textile of India on the basis of technique, raw material, colours, motifs and layout.
- Identify the influencing factors for development and evolution of a specific hand-woven textile.

Course Content

- Introduction to traditional hand-woven textiles from different regions of India.

- Categorisation of weaving styles on the basis of end product:
 - (a) Saris.
 - (i) Benaras Brocades.
 - (ii) Bauchari, Jamdani.
 - (iii) Paithani.
 - (iv) Kanjeevaram.
 - (v) Chanderi, Maheshwari.
 - (b) Shawls.
 - (i) Kashmir shawl.
 - (ii) Kullu & Kinnaur.
 - (iii) Wraps of North-east.
 - (c) Floor coverings.
 - (i) Carpets.
 - (ii) Durries.
- Study of the above mentioned hand-woven textiles with reference to origin, technique, raw material, colours, patterns, layout and end product.
- Overview of the historic hand-woven textiles and the contemporary scenario.

Methodology of Teaching

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

References

- Traditional Indian Textiles, Students Handbook & Practical Manual, Published by CBSE.

CLASS–XII PRINTED TEXTILE (778)

(ANYONE FROM PRINTED TEXTILE OR TEXTILE CHEMICAL PROCESSING)

Preamble

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.

The prints are now visible in various products like bags and lifestyle accessories.

The purpose of the course “Printed Textiles” is to inform students about the fundamentals of Textile prints. The course will give an overview of History of printed Textiles, Categories of Printed Textiles, Styles and Methods of Printing Textiles and Basic print Design Techniques.

THEORY + PRACTICAL

Time: 2.5 Hours+2.5 Hours

Theory: 50 Marks + Practical: 50 Marks

Unit–1: Introduction to Print Design

Theory: 15

Objectives of the Course

- To introduce and understand Print Design development.
- Relevance of Reference material.
- Understanding Textile Design, repeat and layout.

Learning Outcome

After finishing the unit, the students shall be able to.

- Understand the basic requirement for print Design development.
- List the historical printed textiles.
- Identify the pattern, repeat and layout.
- Identify the influencing factors for design development.

Course Content

- History of printed textiles.
- Understanding the similarity and difference between art and design.
- Various aspects of Textiles Design: Reference material, color, layout and repeats.

Methodology of Teaching

- Illustrated lectures.
- Visit to Museum.

Reference Books

- Printed Textile, Students Handbook & Practical Manual, Published by CBSE.

Unit–2: Categories of Printed Textiles

Theory: 15 + Practical: 10

Objectives of the Course

- 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 Outcome

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

Course Content

Introduction to various types of Design and their categories.

- Toile prints.
- Pucci prints.
- Geometric prints.
- Graphic prints.
- Floral prints.
- Conversational prints.
- Liberty prints.
- Country inspired prints.
- Nautical prints.
- Victorian prints.
- Scenic prints.
- Animal prints.
- Ethnic prints.
- Folklore prints.

Methodology of Teaching

- Illustrated lectures.
- Demonstration and Practical Assignments.

Practical Assignments

- Collection of prints as per specified categories and preparation of swatch book.
- Development of one print in each categories 8”x8” block.

Reference Books

- Printed Textile, Students Handbook & Practical Manual, Published by CBSE.
- 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–3: Basic Print Design Techniques

Practical: 30

Objectives of the Course

To develop an Interest and confidence for creating Print designs.

- To explore various art media for developing interesting design.
- To develop the ability to choose the most appropriate technique for creating interesting designs.

Learning Outcome

After completing the unit, the students shall be able to.

- Create interesting design by using various art media.
- Appreciate the techniques involved in developing interesting textures.
- Use art media more appropriately and confidently.
- Develop interesting colour combinations and designs.
- Understand the relation between forms and background.

Course Content

Use of following innovative techniques for development of interesting surfaces.

- Etching.
- Stencil.
- Collage.
- Inter-cutting.
- Resist (Bleach/Wax).
- Dry-brush.
- Photocopy.
- Sponge.
- Stamping.

Methodology of Teaching

- Illustrated lectures.
- Demonstration and Practical Assignments.

Practical Assignments

- Preparation of Textile designs using different techniques.
- Development of thirty 8x8 swatches in different techniques and mix media.

Reference Books

- Printed Textile, Students Handbook & Practical Manual, Published by CBSE.

Unit-4: Style & Methods of Printing Textiles

Theory: 20 + Practical: 10

Objectives of the Course

- To introduce styles and Methods of Printed Textiles and its effect of design.
- To learn the process involved in Printing Textiles.
- To gain Knowledge of evolution of printing process.
- To understand the origin and history of styles and methods.

Learning Outcome

- After completing the unit, the students shall be able to.
- Understand the different styles and methods involved in printing Textiles.

- Identify the correct method and style for printing Textiles.
- Recognize the difference between different kinds of prints.
- To get an overview of printing methods.

Course Content

Study of Styles and Methods involved in printing Textiles.

- Direct, Resist and Discharge Methods.
- Block Printing Style.
- Screen Printing Style.
- Roller Printing Style.
- Digital Printing Style.
- Transfer Printing.
- Foil Printing.
- Hand Printing.
- Sublimation.

Printing of designs using different methods and styles of printing.

Methodology of Teaching

- Illustrated lectures.
- Demonstration and Practical Assignments.

Practical Assignments

- Printed Textile, Students Handbook and Practical Manual, Published by CBSE.

CLASS–XII **TEXTILE CHEMICAL PROCESSING (779)** **(ANYONE FROM PRINTED TEXTILE OR TEXTILE CHEMICAL PROCESSING)**

Objectives of the Course

- To gain an overview of processes involved in Dyeing , Printing and Finishing of Textile materials.
- To familiarize students about chemical processing and its role in fabric Manufacturing.
- To introduce preparatory process of major Textile fibers.
- To study dyeing printing and finishing of Natural fibers.

THEORY

Time: 2.5 Hours

Marks: 50

Unit–1: Introduction to Chemical Processing-Pretreatments

15

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 & mercerizing.

Learning Outcome

After finishing the course, students will be able to understand.

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

Teaching Methodology

- Illustrated Lectures with Power Point presentation and Slides.

Unit-2: Textile Dyeing

15

Content

- 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 disperse dyes.
- Important features of dyes.
- Dyeing machines & special dyeing effects.

Learning Outcome

After finishing the course, students will be able to.

- Dye all kind of Textile Fabrics.
- Select dyes as per the type of fabrics.
- Identify dyeing methods used in the Industry.

Teaching Methodology

- Illustrated Lectures with Power Point presentation and Slides.

Unit-3: Textile Printing

10

Content

- Printing paste ingredients.
- Introduction to various methods of printing , specific features and limitations of various methods, Such as Hand Block Printing, Hand Screen printing, Automatic Flat Bed Screen Printing, Rotary Screen Printing, Heat Transfer Printing.
- Style of Printing (Direct Prints, Discharge Prints, Resist Prints, Pigment Prints, Blotch Prints, Flock Prints, Burnout Prints, Duplex Prints, Engineered Prints, Warp Prints) & their Specific feature for their Identification.

Learning Outcome

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 printing.
- Limitation of the printing methods.

Teaching Methodology

- Illustrated Lectures with Power Point presentation and Slides.

Unit-4: Textile Finishes

10

Content

- Classification of the finishes.
 - (i) According to Designer/Merchandiser /Sales Persons.
 - (ii) According to Textile Chemist.
 - (iii) According to Degree of Performance.
- Objectives of the various finishes.
 - (i) Types of Calendaring and its objective.
 - (ii) Napping.
 - (iii) Emerizing.
 - (iv) Parchmentising.
 - (v) Shape Retention Finishes.
 - (vi) Shrinkage Control Finishes.
 - (vii) Sanforizing.
 - (viii) Decatizing.
 - (ix) Soil Release /Stain Repellent Finish.
 - (x) Water Repellent & Water Proofing.
 - (xi) Anti – Microbial Finish.
 - (xii) Flame Retarding Finish.
 - (xiii) Garment Washing.

Learning Outcome

After finishing the course, students will be able to understand.

- Types of finishes and their performance.

Teaching Methodology

- Illustrated Lectures with Power Point presentation and Slides.

PRACTICAL

Time: 2.5 Hours

Marks: 50

Experiments :

1. Desizing of cotton Fabrics by Acid Desizing method and calculate the weight loss in the Process.

2

2.	Scouring of cotton by Sodium Hydroxide and measure water permeability of the process.	2
3.	Bleach the cotton fabric with the bleaching powder or Sodium Hypo chlorite.	2
4.	Bleach the cotton fabric by hydrogen Peroxide.	2
5.	Degumming of the Silk.	2
6.	Bleaching of the silk with the Hydrogen Peroxide.	2
7.	Dyeing of cotton with Direct Dyes.	2
8.	Dyeing of cotton with Reactive dyes.	2
9.	Dyeing of cotton with Vat dyes.	3
10.	Dyeing of cotton with Sulphur dyes.	3
11.	Dyeing of cotton with Az dyes.	2
12.	Dyeing of wool with Acid Dyes.	2
13.	Dyeing of wool with Reactive Dyes.	2
14.	Dyeing of Silk with Acid Dyes.	3
15.	Dyeing of Nylon with Acid Dyes.	3
16.	Tie and dye of cotton with Direct dyes (Resist Print).	2
17.	Batik Print on the Cotton Fabrics (Resist Print).	3
18.	Printing on the polyester fabrics by Pigment colour.	3
19.	Printing on cotton fabrics by Naptholcolours.	3
20.	Printing on cotton fabric with natural colours.	3
21.	Collect the sample of finished fabrics and describe the type of finishes it may have.	2

MARKING SCHEME

Two Practical from each Section shall be Conducted.

(i)	Session Work.	20
	Maintenance of Record.	
	On the Lab Learning.	
(ii)	Viva Voice.	10
(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.	20

CLASS–XII

GENERAL FOUNDATION COURSE (501)

Time: 3 Hours

Marks: 100

Part–I: (Compulsory to all Vocational Courses)

Marks: 50

A. Business Management and Entrepreneurship **30**

Management of Business

Elementary treatment/exposure to basic conceptual frame work of the topic listed below:

(a)	Basic Function.	6
(b)	Marketing Management.	6
(c)	Financial Management.	6

- (d) Production Management. 6
- (e) Personnel Management. 6

B. Computational Skills 10

1. (a) Solution of linear equations and their application to problem of commercial mathematics. 5
- (b) System of linear equations and in equation in two variables. Applications in formation of simple linear programming problems.
2. Statistics: Raw data, bar charts and Histogram; Frequency Tables; Frequency Polygon; Ogive; Menu, Median and Mode of ungrouped and grouped data; Standard Deviation; Introduction to Mortality tables; Price Index etc. Introduction to Computers. 5

C. Environmental Education & Rural Development 10

1. **Environmental Education 5**
- (a) Modernisation of agriculture and environment, irrigation, water logging, use of fertilisers, pesticides, soil erosion, land degradation (desertification and deforestation), silting and drying of water resources.
- (b) Rational utilisation, conservation and regeneration of environmental resources (soil, air, water, plant, energy, minerals).
2. **Rural Development 5**
- Principles and goals of rural development, major problems/constraints in rural development in India.

Part-II

Marks: 50

I. Development of Dyeing, Printing and Painting with Special Reference to Indian Fabrics 5

- Resist dyed.
- Printed.
- Painted.

II. Traditional Indian Printed and Painted Fabrics. 12

- Kalamakari of AP.
- Phad painting.
- Pichhwals.
- Madhubani.
- Gujarat Printing Saudagiri.
- Ajrak.
- Bagru Prints.

III. Resist Dyed Fabrics: Study with Respect to the Techniques used, Design etc. 10

- Bandhani of Gujarat and Rajasthan.
- Ikat of Orissa.
- Patola of Gujarat.
- Teli Rumal, Mashru.

IV. Traditional Woven Textiles - Motifs and Techniques. 18

- Balucharis and Jamdani of Bengal.
- Brocades of Banaras.

- Painthani of Maharashtra.
- Tanchoi.
- Shawls of Kashmir.
- Woven fabrics from North East States.
- Carpets and Rugs.

V. Catalogue of Design Related to Printed, Painted Resist Dyed and Woven Textiles.

5

LIST OF RECOMMENDED BOOKS

1. Textile Science, Students Handbook & Practical Manual, Class XI, Published by CBSE.
2. Textile Chemical Processing, Students Handbook & Practical Manual, Class XII, Published by CBSE.

LIST OF FABRIC, DYES, CHEMICALS AND EQUIPMENTS

1. Fabrics : Silk, wool, Nylon, PET, Acrylic, Blends - 2 ml each.
2. Dyes : Acid dyes, Reactives, Disperse dyes.
Basic dyes - 100 gms - 250 gms,
3. Chemicals required:
H₂O₂, NaCl.
Formic Acid, CH COOH.
R Salt L.
Sodium Bicarbonate.
Sodium Chloride.
Sodium hydrosulphate.
Urea.
Potassium Carbonate.
Sodium Chlorate.
Gums - Alginate, Indalca.
Lacquer, coloured Discharging chemicals.
90% phenol.
Sy-cresol.
Con. HNO₃.
Ammonia.
Borax.
Iodene.
Benzene.
Petrol (White).
Carbon-tetra-chloride.
Acetone.
Turpentine oil.
Sol. hydroxide.
Glycine.
Soap sol.

Sodium hypochlorite.
Sodium carbonate.
Potassium permanganate.
Sodium hydrosulphite.
Sod. bi Sulphite.

EQUIPMENTS FOR PRINTING LABORATORY

1. Tables : Teak or Kail top.
22 cm × 540 cm : Covered with 6 layers of Jute and one layer of marken.
2. Printing trolleys (for each table).
3. Printing trays (for block printing for each table (enamel trays) about 27 cm × 38 m.
4. Weighing scale for measuring.
5. Thermometer for maintaining a chart for the exact shade.
6. Staple gum for fixing the Nylon to the wooden frames – 1.
7. Steamer : For fixing the colour and the fabric – 1.
8. Oil Stove : For beating the colour for Rapid indigo dyes.
9. Bowls Enamel : 4 Bowls for 10³ diameter for each table. 4 Bowls of 5³ diameter for each table (To mix the dyes).
10. Spoons:
4 table spoons stainless steel for each table.
4 wooden spoons for each table.
11. Squeezers : 30 cms : 15 cms : 20 cms for each table for screen printing.
12. Air tight containers for storing readymade colours (wide mouthed bottles).
13. Brushes : Artists brushes : Complete set.
14. Tools for carving wooden blocks.
15. Screens rack for keeping the readymade screens.
16. Wooden Screens 25 cms × 25 cms.
30 cms × 65 cms.
35 cms × 45 cms.
17. Measuring cylinders 500 ml.
18. Set of lino tools.
19. Roller for paints : 3 different standard sizes.

CONSUMABLE MATERIALS FOR PRINTING LABORATORY

1. Staples for the Staple Gum.
2. Organdie Fabric or Nylon Fabric for Screen.
3. 0.5 cm thick foam for the trays.
4. Jute and Muslin cloth for the trays.
5. Linoleum sheet.
6. Turpentine oil.
7. Enamel Paint (white).

8. Fevicol and quick fix.
9. Blocks for printing (sagwan wood).
10. Enamel paints.
11. Cartridge papers.
12. Dyes for printing of following types:
 - (i) Potato printing (Craylin colours).
 - (ii) Match stick printing (Craylin colours).
 - (iii) Lino Printing (Acramin dyes) with layer of printing inks.
 - (iv) Block printing (indigo and rapid/Acramin dyes).
 - (v) Screen printing:
 - Paper cut screens.
 - Enamel screens.
 - (vi) Card board 5 mm thick.
 - (vii) Match boxes.
 - (viii) Mustard oil.
 - (ix) Multani mitti (block makers).



