3.1. ART APPRECIATION IN INDIAN TRADITIONAL TEXTILE DESIGN - III

	L	T	P	Cr
	2	-	2	3

RATIONALE

Diploma holders of textile design are supposed to know the historical backgrounds of Indian traditional textiles i.e. woven, printed and embroidered and their development of design, fabric uses and technical details. In practical, students learn to prepare replicas, for which they should visit art galleries and museums

DETAILED CONTENTS

Theory	Practical Exercises
1. Study of Woven textiles with reference to: - Historical significance - Construction techniques(Including raw materials) - Styles, colour and motifs - Centres of production (a) Kani, Basoli and Jamawar Shawls (b) Eastern region (15 hrs)	1.1 Replication of designs (2 to 4 designs each) 1.2 Assignments to students on designs 1.3 Presentation of assignments
2. Study of carpets and floor coverings (7 hrs)	2.1 Replication of designs (2 to 4 designs each) 2.2 Assignment to students on design 2.3 Presentation of assignments
3.1 Construction of at least 4 designs for bed room set 3.2 Approve 4 designs for poster. Suggested themes: (Animated/Social/Festive/Folk) 3.3 Historical significance and designs of Traditional Jewellery Design of India (10 hrs)	3.1 Prepare a sample of bed room set in fabric painting 3.2 Prepare two posters from any suggested themes 3.3 Students will make designs of traditional jewellery of India using pencil colors and water colors

Note: Students should be taken for field visits to various production centres to show the samples of the above mentioned textiles (embroidered, woven, printed and dyed) They may also be taken for field visits to various places like art galleries/ museums/religious places

Practically execute any one of the traditional designs in the contemporary form and prepare a file with replica or samples of the given topics

RECOMMENDED BOOKS

1. Folk Embroidery of Himachal Pradesh by Subhashini Aryan

2. Ikat Textile of India by Chetna Desai

3. Indian Painted Textiles by Kamla Dev Chattopadya

4. Carpets of India by Marq

5. Fabric Art heritage of India by Sukla Das

6. Hand Woven Fabric of India by Jasleen Dhamija

7. Indian Sari by Kamla Dev Chattapodya

8. Tie Dyed Textile of India by veronica Muarphy

9. Hand Woven Fabrics of India by Jasleen Dhamija

10. Traditional Indian Textiles by John Gillow

11. Textile Art of India by Kyoto Shoin

12. Hand Painting Textile For the Home by Kaszz Ball and Valcrie

13. Tie Dyed Textiles of India by Murphyd Crill

14. Masterpieces of Indian Textile by Rustam J Mehta

15. Kashmir Shawls by All India Handicrafts Board

16. Everything you ever wanted to know about Fabric Painting by Jill Kennedy and Jane Vourell

17. Saries of India – RTZ and Singh

18. Saries of Madhya Pradesh

19. Embroidered Textiles of India, Calico Masam of India

20. Painted Textiles of India, Calico Masam of India

21. Printed Textiles of India, Calico Masam of India

22. Woven Textile of India. Calico Masam of India

23. Costumes and Textiles of India by Parul Bhatnagar; Abhishek Publisher, Chandigarh

24. Fabric Paining by Jill Kennedy Verral

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	15	50
2	7	20
3	10	30
Total	32	100

3.2   TEXTILE CALCULATIONS

L T P Cr
3 - - 3

RATIONALE

A diploma holder in textile design is supposed to calculate the yarn count, yarn dimensions and carry out other textile calculations related to textile designing. This subject aims at developing knowledge of various calculations related to yarn and fabric.

DETAILED CONTENTS

Theory

1.   Yarn numbering, (Yarn count). Various direct and indirect yarn numbering systems. Universal yarn numbering system.
      (10 hrs)

2.   Conversion of count from one yarn numbering system to another

      (10 hrs)

3.   Calculations of resultant yarn number of plied yarn and average yarn number

      (3 hrs)

4.   Calculation of yarn diameter and concept of cloth setting.
(5 hrs)

5.   Cloth cover, cover factor and weight of fabric per unit area
(4 hrs)

6.   Calculations related to cloth take-up and crimp percentage
      (3 hrs)

7.   Calculations related to weight of warp and weft required to produce given length of fabric as per given quality particulars.
      (13 hrs)

INSTRUCTIONAL STRATEGY

In this subject teacher is required to show different samples of fabric and make the students understand about different calculation particulars like count of yarn, twist in the yarn, crimp etc.

RECOMMENDED BOOKS

1.   Weaving Calculations by R Sen Gupta

2.   Spinning Calculations by WS Taggart

3.   Handbook of Spinning Calculation by TK Pattabhiram

4.   Advance textile designs: by William wattsons

5.   Textiles sciences by PK Sharma

6.   Woven cloth construction, Mark and Robinson, The Textile Institute, Manchester

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	10	20
2	10	20
3	3	6
4	5	10
5	4	9
6	3	7
7	13	28
Total	48	100

3.3   DYEING TECHNOLOGY - I

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L  T  P  Cr
2  -  4  4
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RATIONALE

A diploma holder in textile design must have sufficient knowledge and skills about principles of pretreatment as well as dyeing operation. Textile designer should be able to execute various recipes for dyeing and pretreatment.

DETAILED CONTENTS

Theory

1.   Introduction to dyes and dyeing   (2 hrs.)

2.   Classification and brief idea of dyes.
(3 hrs.)
       (Natural, Mordant & Synthetic)

3.   Pretreatments/Preparation of Material i.e. Fibre, yarn and fabric for Dyeing/Printing/Finishing   (12 hrs.)
   - Singeing & Shearing
   - Desizing
   - Scouring/Degumming
   - Bleaching
   - Optical brightening
   - Mercerization
   - Heat setting

4.   Water- Hardness and its removal   (2 hrs.)

   - Importance of soft water in dyeing

5.   pH – its definition, function and importance in dyeing   (2 hrs.)

6.   Dyeing of cotton with
(11 hrs.)

   - Direct dyes

   - Reactive dyes

   - Insoluble azo colours

   - Vat dyes

   - Sulphur dyes

   - Union and cross Dyeing machine

LIST OF PRACTICALS

1. Scouring of cotton, wool, silk and synthetics.

2. Bleaching of cotton fabric with sodium hypochlorite and H_2O_2 (Hydrogen peroxide)

3. Bleaching of wool and silk with H_2O_2 (Hydrogen Peroxide)

4. Bleaching of synthetics with sodium chlorite

INSTRUCTIONAL STRATEGY

The students should be taken to textile dyeing industry to show them various pretreatment and dyeing processes so that they can know various dyeing and pretreatment processes being used by textile industry.

RECOMMENDED BOOKS

1. Technology of Bleaching and Mererization - VA Shenai (Vol.3) Sevak Publications, Mumbai

2. Chemistry of Dyes and Principal of Dyeing - V.A. Shenai (Vol.2) Sevak Publications, Mumbai

3. Dyeing and Chemical Technology of Textile Fibres, ER Trotmen Charles Griffin & Co. Ltd., London

4. Cotton Piece Dyeing by Shah and Gokhale, ATIRA, Ahmedabad

5. Textile Chemistry Vol. II, RH Petors Elsevir Publishing Co. London

6. Technology of Dyeing –V.A. Shenai (Vol. 5), Sevak Publications, Mumbai

7. Art of Dyeing – Chohan

8. The Dyeing of Textile Materials – Prente Cegarra

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	2	6
2	3	9
3	12	37
4	2	8
5	2	5
6	11	35
Total	32	100

3.4   FABRIC MANUFACTURE- I

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L  T  P  Cr
2  –  4  4
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RATIONALE

The diploma holders in textile design are supposed to have knowledge and skills related to various looms and manufacturing of fabric. Thus in this subject, student will learn manufacturing techniques and mechanism employed to produce fabric.

DETAILED CONTENTS

Sr. No.	Theory	Practical Exercises
1.	Introduction to yarn packages and different yarn faults (3 hrs)	Study of various yarn packages and yarn faults
2.	Objects of warp winding and weft winding, defects caused during warp winding and weft winding. (6 hrs)	Demonstration/practice on warp and pirn winding machine
3.	Objects of warping and sectional warping, methods of creeling, method of preparing warper's beam . (6 hrs)	- Demonstration of different types of creels used for warping - Demonstration /practice of warping machine
4.	Objects of sizing, sizing ingredients and their functions. Outline of the procedure of sizing (6 hrs)	Demonstration in a Textile Mill
5.	Gaiting up of a warp-beam on the loom procedure of gaiting up of warp-beam. (3 hrs)	Demonstration/Practice on gaiting up a warp
6.	Introduction to looms and their objectives, Nomenclature of different parts of looms and their functions. Loom motions (primary, secondary and auxiliary motions) (3 hrs)	Study of various parts of loom
7.	Different types of sheds and their advantages and disadvantages (2 hrs)	To study different types of sheds
8.	Introduction to different picking	To study different picking systems

systems: (overpick and underpick) (2 hrs)

9.   Beat up motions   (1 hr)

INSTRUCTIONAL STRATEGY

Students may be asked to do all the work on handloom or power loom to develop the knowledge and skill in fabric manufacturing

RECOMMENDED BOOKS

1.   Weaving Mechanism Vol. I and II by NN Banerjee

2.   Fancy Weaving by KT Aswani

3.   Winding and Warping by BTRA

4.   Warp Sizing by JB Smith

5.   Principle of Weaving by Marks and Robinsons

6.   Yarn Preparation Vol. I and II by R Sen Gupta

7.   Mechanism of Weaving by WM Fox

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	3	9
2	6	19
3	6	19
4	6	19
5	3	9
6	3	10
7	2	6
8	2	6
9	1	3
Total	32	100

3.5   STRUCTURAL FABRIC DESIGN - III

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                    L   T   P   Cr
                    2   –   4    4
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RATIONALE

The students of textile design are supposed to have knowledge and skill regarding various advanced weaves and their construction. Hence, in this subject, students will learn different weaves, their method of employment to acquire competency for production of woven designs for different end uses.

DETAILED CONTENTS

THEORY

1.   Backed fabric, warp and weft backed fabric, wadded warp and weft backed fabrics their beaming and drafting procedure. (8 hrs)

2.   Double Cloth: Construction of double and triple cloth on design paper, their beaming, drafting and pegging. Types of double structure (i) Tubular fabrics (ii) double faced fabrics (iii) fabrics opening to double the width (iv) concept of double equal plain fabrics) triple and four ply fabrics. Warp and weft tyeing principle.(This should be shown in a textile mill or through visuals)

(12 hrs)

3.   Introduction to gauze and leno fabrics

Structure of gauze and leno fabrics; bottom and top douping principle. (gauze and leno structures to be shown in a textile mill or through visual). (12 hrs)

PRACTICAL EXERCISES

1.   Study of the fabrics regarding structure/weave and its end use:

-       Draper or curtain - material in natural colour with perforated weaves or different drafting

-       Furnishing fabrics (upholstery) in double cloth weaves

-       Bed cover, dobby weave,

-       Partitions and Lampshades in gauze and leno fabrics

INSTRUCTIONAL STRATEGY

Student should be able to understand different weaves from fabric samples and by weaving. They must be taken to Textile Industries for showing above mentioned various processes.

RECOMMENDED BOOKS

1. Grammer of Textile Design – Nisbet
2. Structural Fabric Design by – Kilby
3. Woven Structures and Design – Doris Goerner; British Textile Technology Group WIRA House, Leeds UK
4. Fibre to Fabric by Ghosh
5. Watson's Advance Textile Design
6. Watson's Textile Design and Colour
7. Knitting Technology – Spencer
8. Warp Knit Fabric Construction by Charis Wildens U. Wilkens Verlog Germany
9 Simple Fabric Structure by SS Satsangi

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	8	24
2	12	38
3	12	38
Total	32	100

3.6   PRINTING TECHNOLOGY - I

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L  T  P  Cr
3  -  4   5
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RATIONALE

A diploma holder in textile design must have enough knowledge about principles and practices employed for printing. He must be aware of various operation, materials, equipments and processes used for printing.

DETAILED CONTENTS
Theory

1.   Introduction to printing   (2 hrs.)

2.   Printing paste and its importance   (3 hrs.)

3.   Essential constituents of printing paste and their importance
(3 hrs.)

4.   Selection of thickeners and their properties.
(3 hrs.)

5.   Auxiliaries used for Printing
(3 hrs.)

6.   After-treatment of printed material
(10 hrs.)

-       Drying
-       Steaming/ageing/curing
-       Washing off

7.   Methods of printing   (8 hrs.)

-       Block printing
-       Stencil printing
-       Screen printing
-       Roller printing

8.   Introduction to Styles of printing   (4 hrs.)

-       Direct style
-       Resist
-       Discharge
-       Mordant/dyed

9.   Printing of textiles in Direct Style of Printing: (10 hrs)

-       Printing of cotton with reactive dyes

- Printing of cotton with vat dyes
- Printing of cotton with pigments
- Printing of wool & silk with acid, mordant and metal complex dyes
- Printing of polyester with disperse class dye

LIST OF PRACTICALS

1. Preparation of cloth for printing

2. Printing of cotton in direct style of printing with

   - Reactive dyes
   - Pigment colours
   - Vat dyes
   - Rapid fast dyes

3. Printing of wool and silk in direct style of printing with

   - Acid dyes
   - Basic dyes
   - Metal complex dyes

4. Printing of synthetic fabric in direct style of printing with

   - Disperse dyes
   - Acid dyes
   - Basic dyes

INSTRUCTIONAL STRATEGY

The students should be taken to textile printing industry to show them various printing processes and machinery so that the students can know various printing processes being used by textile printing industry.

RECOMMENDED BOOKS

1. Technology of Printing by VA Shenai, Sevak Publication, Mumbai
2. Technology of Printing by Kalley
3. A glimpse of Chemical Technology of Fibrous Materials by RR Chakravorty, Mahajan Publication, Ahmedabad
4. Dyeing and Printing by Varke
5. Dyeing and Printing by Jyoce storey
6. Introduction to Textile Printing by Clark
7. Screen Printing Designs and Technique by Biegelesien and Cohn
8. Manual of Textile Printing by Story
9. Textile Printing by Miles L WC, Dyers company publication Trust, Bradford, England
10. Chemical Processing of Synthetic fibres and blends, by Datye KV and Vaidye AA, John wiley and sons, New York

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	2	4
2	3	6
3	3	6
4	3	6
5	5	10
6	10	22
7	8	16
8	4	8
9	10	22
Total	**48**	**100**

3.7 BASICS OF INFORMATION TECHNOLOGY

L T P Cr
- - 4 2

RATIONALE

Information technology has great influence on all aspects of life. Almost all work places and living environment are being computerized. In order to prepare diploma holders to work in these environments, it is essential that they are exposed to various aspects of information technology such as understanding the concept of information technology and its scope; operating a computer; use of various tools of MS office; using internet etc. form the broad competency profile of diploma holders. This exposure will enable the students to enter their professions with confidence, live in a harmonious way and contribute to the productivity.

Note: **i)** Teaching of theory should be dovetailed with practical work.

ii) The following topics be kept in mind while doing practical exercises in the   laboratory.

DETAILED CONTENTS

Instructions for Practical Exercises

1.   Information Technology – its concept and scope

2.   Elements of a computer system, its usefulness and applications, block diagram of a computer, CPU, memory, data – numeric data, alpha numeric data; contents of a program, processing of data

3.   Computer organization, computer hardware and software; primary and secondary memory: RAM, ROM, PROM etc.

4.   Input devices; keyboard, scanner, mouse etc ; output devices ; VDU and Printer, Plotter

5.   Primary and Secondary Storage (Auxiliary Storage), Secondary storage; magnetic disks – tracks and sectors, optical disk (CD, CD-RW and DVD Memory)

6.   Introduction to Operating Systems such as MS-DOS and Windows

7.   Introduction to internet, browsing using search engine (like google etc.)

8.   Basics of Networking – LAN, WAN, Topologies

LIST OF PRACTICALS

1.   Given a PC, name its various components and list their functions
2.   Identification of various parts of a computer and peripherals
3.   Practice in installing a computer system by giving connection
4.   DOS Commands (internal / external) e.g. TYPE, REN, DEL, CD, MD, COPY, TREE, BACKUP

5.   Exercises on entering text and data (Typing Practice using any tutor)
6.   Features of Windows as an operating system
- Start
- Shutdown and restore
- Creating and operating on the icons
- Opening closing and sizing the windows
- Using elementary job commands like – creating, saving, modifying, renaming, finding and deleting a file
- Creating and operating on a folder
- Changing setting like, date, time color (back ground and fore   ground)
- Using short cuts
- Using on line help

7.   MS-Word

- File Management:
Opening, creating and saving a document, locating files, copying contents in some different file(s), protecting files, Giving password protection for a file
- Page Set up:
Setting margins, tab setting, ruler, indenting
- Editing a document:
Entering text, Cut, copy, paste using tool- bars
- Formatting a document:
Using different fonts, changing font size and colour, changing the appearance through bold/ italic/ underlined, highlighting a text, changing case, using subscript and superscript, using different underline methods
- Aligning of text in a document, justification of document, Inserting bullets and numbering
- Formatting paragraph, inserting page breaks and column breaks, line spacing
- Use of headers, footers: Inserting footnote, end note, use of comments
- Inserting date, time, special symbols, importing graphic images, drawing tools
- Tables and Borders:
Creating a table, formatting cells, use of different border styles, shading in tables, merging of cells, partition of cells, inserting and deleting a row in a table
- Print preview, zoom, page set up, printing options
- Using Find, Replace options
- Using Tools like:
Spell checker, help, use of macros, mail merge, thesaurus word content and statistics, printing envelops and labels
- Using shapes and drawing toolbar,
- Working with more than one window in MS Word,
- How to change the version of the document from one window OS to another
- Conversion between different text editors, software and MS word

8. MS-Excel

- Starting excel, open worksheet, enter, edit, data, formulae to calculate values, format data, create chart, printing chart, save worksheet, switching between different spread sheets
- Menu commands:
  Create, format charts, organize, manage data, solving problem by analyzing data, exchange with other applications. Programming with MS-Excel, getting information while working
- Work books:
  Managing workbooks (create, open, close, save), working in work books, selecting the cells, choosing commands, data entry techniques, formula creation and links, controlling calculations, working with arrays
- Editing a worksheet, copying, moving cells, pasting, inserting, deletion cells, rows, columns, find and replace text, numbers of cells, formatting worksheet
- Creating a chart:
  Working with chart types, changing data in chart, formatting a chart, use chart to analyze data
- Using a list to organize data, sorting and filtering data in list

9. MS PowerPoint

a) Introduction to PowerPoint
   - How to start PowerPoint
   - Working environment: concept of toolbars, slide layout, templates etc.
   - Opening a new/existing presentation
   - Different views for viewing slides in a presentation: normal, slide sorter etc.
b) Addition, deletion and saving of slides
e) How to view the slide show?
   - Viewing the presentation using slide navigator
   - Slide transition
   - Animation effects etc.

10. Internet and its Applications

a) Log-in to internet
b) Navigation for information seeking on internet
c) Browsing and down loading of information from internet
d) Sending and receiving e-mail
   - Creating a message
   - Creating an address book
   - Attaching a file with e-mail message
   - Receiving a message

-       Deleting a message

RECOMMENDED BOOKS

1. Fundamentals of Computer by V . Rajaraman; Prentice Hall of India Pvt. Ltd., New Delhi

2. Computers Today by SK Basandara, Galgotia Publication Pvt ltd. Daryaganj, New Delhi.

3. MS-Office 2000 for Everyone by Sanjay Saxena; Vikas Publishing House Pvt. Ltd., New Delhi

4. Internet for Every One by Alexis Leon and Mathews Leon; Vikas Publishing House Pvt. Ltd., Jungpura, New Delhi

5. A First Course in Computer by Sanjay Saxena; Vikas Publishing House Pvt. Ltd., Jungpura,New Delhi

6. Mastering Windows 95, BPB Publication, New Delhi

7. Computer Fundamentals by PK Sinha; BPB Publication, New Delhi

8. Fundamentals of Information Technology by Leon and Leon;Vikas Publishing House Pvt. Ltd., Jungpura, New Delhi

9. On Your Marks - Net…Set…Go… Surviving in an e-world by Anushka Wirasinha, Prentice Hall of India Pvt. Ltd., New Delhi

10. Learning MS Office XP by Ramesh Bangia, Khanna Book Publishing Co. (P) Ltd., New Delhi.

11. Fundamentals of Information Technology by Vipin Arora, Eagle Parkashan, Jalandhar

ECOLOGY AND ENVIRONMENTAL AWARENESS CAMP

A diploma holder must have knowledge of different types of pollution caused due to industries and constructional activities so that he may help in balancing the eco system and controlling pollution by pollution control measures. He should also be aware of environmental laws related to the control of pollution.

This is to be organized at a stretch for 3 to 4 days. Lectures will be delivered on following broad topics. There will be no examination for this subject.

1. Basics of ecology, eco system and sustainable development

2. Conservation of land reforms, preservation of species, prevention of advancement of deserts and lowering of water table

3. Sources of pollution - natural and man made, their effects on living and non-living organisms

4. Pollution of water - causes, effects of domestic wastes and industrial effluent on living and non-living organisms

5. Pollution of air-causes and effects of man, animal, vegetation and non-living organisms

6. Sources of noise pollution and its effects

7. Solid waste management; classification of refuse material, types, sources and properties of solid wastes, abatement methods

8. Mining, blasting, deforestation and their effects

9. Legislation to control environment

10. Environmental Impact Assessment (EIA), Elements for preparing EIA statements

11. Current issues in environmental pollution and its control

12. Role of non-conventional sources of energy in environmental protection