

4.1 DYEING TECHNOLOGY - II

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RATIONALE

A diploma holder in textile design must have sufficient knowledge and skills about principles of dyeing operation, materials, equipments and processes. He should be able to execute various recipes for dyeing.

DETAILED CONTENTS

Theory

1. Application of Dyes on wool/silk (6 hrs.)
 - Basic
 - Acid
 - Metal complex/Chrome Dyes
2. Application of dyes on synthetics (6 hrs.)
 - Basic/Modified Basic dyes on Acrylic/cashmilon
 - Disperse dyes on Polyester/Terelene
 - Acid dyes on Nylon/Polyamides
3. Introduction to equipments/machinery used in dyeing (14 hrs.)
 - Fibre Dyeing machine (stock dyeing)
 - Hank Dyeing and Beam dyeing /Cone or cheese Dyeing machine (package dyeing)
 - Winch machine
 - Jigger machine
 - H.T. H.P. Beam Dyeing machine
 - Jet Dyeing machine
4. Effluent treatment in dyeing sectors (6 hrs)

LIST OF PRACTICALS

1. Dying of cotton with Reactive dyes (Cold barnad/Hot brand)
2. Dyeing of Cotton with Direct Dyes
3. Dyeing of cotton with Azoic colours
4. Dyeing of cotton with Vat Dyes
5. Dyeing of cotton with sulphur dyes
6. Dyeing of wool/silk with Acid/Basic/Metal complex dyes.
7. Application of basic/modified basic dyes on acrylic

8. Dyeing of Nylon with Acid dyes.
9. Dyeing of Polyester with Disperse Dyes.
10. Industrial visit to show working of dyeing machines

INSTRUCTIONAL STRATEGY

The students should be taken to dyeing industry to show them various processes of dyeing and its machinery so that students can know these being used by textile industry.

RECOMMENDED BOOKS

1. Chemistry of dyes - Principles of Dyeing by VA Shenai (Vol.2) Sevak Publications, Mumbai
2. Dyeing and Chemical Technology of Textile Fibres, ER Trotman, Charles Griffin & Co. Ltd., London
3. Technology of dyeing, Vol.5, VA Shenai, Sevak Publications, Mumbai
4. Chemical Processing of Polyester/cellulosic blends', Mittal RM and Trivedi SS, ATIRA, Ahmedabad
5. Effluent Treatment in textile mills, ATIRA, Ahmedabad
6. Art of Dyeing - Chohan
7. The Dyeing of Textile Materials – Puente Cegarra

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	6	19
2	6	19
3	14	42
4	6	20
Total	32	100

4.2 FABRIC MANUFACTURE - II

L T P Cr
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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 CONTENT

Sr.No.	Theory	Practical Exercises
1.	Take –up motion : seven wheel take-up motions, objectives of let-off motion (negative and positive) (6 hrs.)	To study seven wheel take up motion.
2.	Objects of warp protecting motion:- loose reed & fast reed motions. (6 hrs.)	To study loose reed and fast reed motions
3.	Objects of warp stop motion (electrical & mechanical) and weft stop motions (side weft fork motion) (8 hrs.)	To study side weft fork motions
4.	Dobby - Introduction, keighley doobby mechanism & climax doobby (5 hrs.)	To study keighley doobby.
5.	Principle of drop box motion (6 hrs.)	Demonstration of Drop Box.
6.	Jacquard-different types of jacquard, double lift double cylinder jacquard, sequence of card arrangement for double lift double cylinder jacquard . Figuring capacity of jacquard. (9 hrs.)	Study of jacquard loom and their functions
7.	Elementary idea of modern weaving machines. (3 hrs.)	
8.	Introduction to carpet weaving (tufted and knotted carpets). (3 hrs.)	Demonstration of carpet samples on carpet frames.
9.	Types of fabric defects (2 hrs)	Identification of common fabric defects

INSTRUCTIONAL STRATEGY

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

RECOMMENDED BOOKS

1. Weaving mechanism Vo.I and Vol.II by N N Benerjee
2. Fancy weaving by KT Aswani
3. Principles of weaving by marks and Robinsons.
4. Mechanism of weaving by TW Fox.
5. Jacquard-EK Saral Vidya by S.S. Satsangi (Bilingual), M/S Usha Publishers
6. Fabric Defects- Causes and Remedies by S.S. Satsangi, M/S Usha Publishers

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	6	12
2	6	12
3	8	18
4	5	10
5	6	12
6	9	20
7	3	6
8	3	6
9	2	4
Total	48	100

4.3 STRUCTURAL FABRIC DESIGN - IV

L	T	P	Cr
3	-	4	5

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. Principles of formation of pile construction of three, four, five and six pick terry fabrics. Their method of drafting and denting.
(14 hrs)
2. Pile fabrics: Designing of plain warp pile fabrics in detail. Reversible warp pile structure and double plush. Weaving of weft pile fabrics, weft plushes.
(14 hrs)
3. Construction of bed ford cord and wadded bed ford
(7 hrs)
4. Introduction to Welts and piques. (7 hrs)
5. Colour and weave effect. (6 hrs)

PRACTICAL EXERCISES

1. Analysis of fabrics
 - a) Objects and methods of analyzing fabric
 - b) Particulars to be analyzed
 - c) Identifying warp and weft in the fabric
2. Analysis of following fabrics.
 - A. Gents Shirting (Cotton)
 1. Stripes on loom
 2. Small geometrical motifs on dobby loom

- B. Gents Suiting
 - 1. Trousers length with colour effect in plain weave
 - 2. Tweed material for jackets in wool
- C. Ladies dress material
- D. Pile Fabrics

INSTRUCTIONAL STRATEGY

Student should be able to understand different weaves from fabric samples and by weaving. They may be taken to Textile Industries for showing above-mentioned processes. Visual Aids can be shown.

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. Watson's Advance Textile Design and Colour
5. Watson's Textile Design and Colour
6. Simple Fabric Structures by SS Satsangi

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	14	30
2	14	30
3	7	14
4	7	14
5	6	12
Total	48	100

4.4 PRINTING TECHNOLOGY – II

L	T	P	Cr
2	-	4	4

RATIONALE

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

DETAILED CONTENTS

Theory

- | | | |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 1. | Printing in resist style
(hrs.) | (10) |
| | <ul style="list-style-type: none"> - Batik style and tie and dye. - Pigment resist under reactive ground - Vat resist under Vat Dyed ground | |
| 2. | Printing in discharge style
(hrs.) | (12) |
| | <ul style="list-style-type: none"> - Coloured and white Discharge paste - White and coloured discharge on wool and silk - Vat discharge on direct dyed ground for cotton - Vat discharge on naphthanol dyed ground for cotton | |
| 3. | Methods of Preparation of screens.
(hrs.) | (5) |
| | <ul style="list-style-type: none"> - Enamel Method - Photochemical Method | |
| 4. | Transfer Printing
(hrs.) | (5) |
| | <ul style="list-style-type: none"> - Sublimation or dry heat Transfer Printing - Melt & Film release Transfer Printing - Wet Transfer Printing | |

LIST OF PRACTICALS

1. Printing of cotton, wool, silk by various techniques of tie & dye style

2. Printing of cotton and silk with Batik style.
3. Printing of white and coloured resist under reactive and Vat Dyed ground
4. Printing of white and coloured discharge with vat, Basic on direct dyed ground.
5. Printing of white and coloured discharge with vat on naphthanol dyed ground.
6. Preparation of screens by
 - Enamel Method
 - Photochemical Method

INSTRUCTIONAL STRATEGY

The students should be taken to Textile Printing Industries to show them various processes of finishing and its machinery so that they can know the various finishing processes being used by Textile Industry.

REFERENCE 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	10	32
2	12	38
3	5	15
4	5	15
Total	32	100

4.5 COMPUTER AIDED TEXTILE DESIGN - I

L	T	P	Cr
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RATIONALE

The term CAD has found its way into all major discipline that have got anything to do with designing or drafting techniques. The major objective of this course is to expose the students to different softwares available in the field of textile design industry so that they are able to use those softwares in the design and construction of various textiles.

DETAILED CONTENTS

Instructions for Practical Exercises

1. Introduction to latest coral draw & Adobe photoshop softwares
2. Use of various tools in coral draw & Adobe photoshop.
3. Formation of designs using different tools and application of design on graph paper.
4. Application and selection of suitable colours for a particular design.
5. Scan a design with the help of photoshop
6. Use of digitizer for design.
7. Enlargement and reduction of design

Practical Exercises

1. Opening and closing of coral draw and Adobe photoshop
2. Use of coral and photoshop tools, menu bar
3. Use of digitizer for drawing simple lines in understanding of different pressures of the pen
4. Use digitizer to copy sketched designs and see it on monitor
5. Use of symbol library to make designs
6. Learn to use short cut keys for effective manipulation of design

RECOMMENDED BOOKS

1. SAMS Coral Draw-II
2. SAMS Adobe Photoshop-I

4.6 MINOR PROJECT WORK (Industry Oriented)

L T P Cr
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Minor Project aims at exposing the students to experiment on the practical aspect to a finished product. The student has to select a style, embroidered/painted/printed woven/dyed fabric and then make at least 10 designs using computers – Coral Draw and Adobe Photoshop..

They can continue one or more styles and finish a complete product with 4 different colour ways, at least 50 croques should be made before a final design chart, visualization is made and approved by the supervisor with at least 3 to 4 colour schemes.

The product design has to be presented before the panel of teachers using O.H.P (Slides)

Thrust areas;

1. Design chart
2. Colour schemes
3. Costing of the product
4. Utility aspect of the product
5. Market survey of the product
6. Materials used
7. Export presentation

The teachers alongwith industry personnel will conduct performance assessment of students. The criteria for assessment will be as below:

<u>Criteria</u>	<u>Weightage</u>
Attendance and punctuality	15 per cent
Initiative	15 per cent
Relations with people	15 per cent
Report Writing	25 per cent
Presentation/Seminar	30 per cent

ENTREPRENEURIAL AWARENESS CAMP

The employment opportunities for diploma holders especially in public sector are dwindling. The diploma holders need to explore the possibilities of becoming entrepreneurs. For this, they must be acquainted with entrepreneurship development, scope of setting up small-scale industry, existing business opportunities, financial support available and various aspects of managing business. In this context, an entrepreneurial awareness camp is suggested. During the camp, experts from various organizations such as banks, financial corporations, service institutes etc. may be invited to deliver expert lectures. Successful entrepreneurs may also be invited to interact with the students.

The camp is to be organized at a stretch for two to three days during fourth semester. Lectures will be delivered on the following broad topics. There will be no examination for this subject

1. Who is an entrepreneur?
2. Need for entrepreneurship, entrepreneurial career and self employment
3. Scenario of development of small scale industries in India
4. Entrepreneurial history in India, Indian values and entrepreneurship
5. Assistance from District Industries Centres, Commercial Banks, State Financial Corporations, Small industries Service Institutes, Research and Development Laboratories and other Financial and Development Corporations
6. Considerations for product selection
7. Opportunities for business, service and industrial ventures
8. Learning from Indian experiences in entrepreneurship (Interaction with successful entrepreneurs)
9. Legal aspects of small business
10. Managerial aspects of small business

