

Book No. 17
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M. P. BOARD OF TECHNICAL EDUCATION



DIPLOMA PROGRAMME
in
'TEXTILE DESIGN'

CURRICULUM

(Effective From 1995-96)

Developed by
Department of Textile Technology, Government Polytechnic, Gwalior

Sponsored by
Curriculum Development Centre M. P. Board of Technical Education, Bhopal

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'Enhancing Technical Education Facilities for Women' is a major component under the World Bank Assisted Project. Accordingly, the state Govt. through M.P. Board of Technical Education, Bhopal decided to start a programme in 'Textile Design'.

In persuance, the M.P. Board of Technical Education, Bhopal entrusted the responsibility of designing the curriculum and infrastructural details to Govt. Polytechnic, Gwalior. The Board also provided necessary funds and support to conduct a workshop for preparing the curriculum.

Accordingly, a five days workshop was arranged in the Textile Tech. Deptt. of Govt. Polytechnic, Gwalior from 20.3.95 to 24.3.95. Prominent persons from Industries, Centre for Entrepreneurship development, faculty from institution actively participated with brain-storming discussions and suggestions which led to this draft proposal for starting 3 years Diploma programme in "Textile Design".

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DIPLOMA PROGRAMME IN "TEXTILE DESIGN"
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SEMESTER PATTERN

I N D E X

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S.NO. NAME OF COURSE PAGE NO.
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FIRST SEMESTER

- 1. COMMUNICATION SKILL. ... 5-7
- 2. BASIC DESIGN ... 8-9
- 3. FREE HAND SKETCHING & DRAWING ... 10-11

SECOND SEMESTER

- 1. DESIGN OF INDIAN TEXTILES ... 12-13
- 2. TEXTILE FIBRES & YARNS ... 14-16
- 3. EMBROIDERY WORK ... 17-19

THIRD SEMESTER

- 1. FABRIC CONSTRUCTION & ANALYSIS-I. ... 20-22
- 2. ELEMENTS OF HANDLOOM WEAVING ... 23-26
- 3. DRAWING AND PAINTING ... 27-28

FOURTH SEMESTER

- 1. COLOUR & DESIGN ... 29-31
- 2. CHEMICAL PROCESSING-I. ... 32-35
- 3. COMPUTER LITERACY & APPLICATIONS. ... 36-38

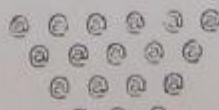
FIFTH SEMESTER

- 1. FABRIC CONSTRUCTION & ANALYSIS-II. ... 39-41
- 2. HANDLOOM TECHNOLOGY ... 42-44
- 3. CHEMICAL PROCESSING-II. ... 45-48
- 4. COMPUTER AIDED TEXTILE DESIGNS... 49-51

SIXTH SEMESTER

- 1. TEXTILE TESTING ... 52-55
- 2. MANAGEMENT & ENTREPRENEURSHIP DEVELOPMENT ... 56-58
- 3. P R O J E C T ... 59-60

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<u>MAIN FEATURES OF CURRICULUM</u>	: <u>TEXTILE DESIGN</u>
(a) Title of Programme	: DIPLOMA IN "TEXTILE DESIGN"
(b) Duration of Programme	: THREE YEARS.
(c) Type of programme	: Full Time
(d) Pattern of the Programme	: Semester System.
(e) Entry qualification	: 10+
(f) Admission criteria	: Non-P.P.T. On the basis of Merit.
(g) Intake	: 30

S C O P E

1. Designers of Block Printing and Screen Printing.
2. As Self-employed persons.
3. Consultant in Textile Design.
4. Designers in Textile Mills.
5. As Testing Lab. Supervisor/Officer in Industry.
6. In suitable position in Govt. organisations, like Directorate of Handloom, M.P.S.T.C., Textile Committee under Ministry of Textile, etc., Testing Centres, Research Centres and so on.
7. In suitable positions in educational institutions.
8. C.A.T.D. Consultants.

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INTRODUCTION
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The 'Textile Design' is a generic term which includes designing on Woven fabrics, Printed fabrics, Knitted fabrics, narrow fabrics and also ornamentation made by embroidery. While in the Woven fabrics, the designing work is constrained within frame work of technological conditions, in Printed fabrics, the designs are limited only by one's imagination.

There are various methods of producing fascinating effects on textile by use of various type of yarns, choices of colours, selection of weaves, figuring in weaving itself or by embroidery, using numerous styles and methods of printing. This area requires development of imagination power, aesthetic sense, selection of colours & designs alongwith feasibility and cost-effectiveness of choices made.

In this programme, the coverage is restricted only to designing for fabrics either Woven or Printed. The conventional art based programme are given sufficient technological touch and the courses of Computer literacy and CAD, the topics on ISO series, Ecomarking scheme of art technology, in this curriculum, Entrepreneurship in textile areas such as narrow weaving, Screen printing, Design-consultant etc. is also emphasised in the curriculum.

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NEED ANALYSIS

The textile production includes production of fibres, yarns and fabrics, the fabrics woven, knitted or non-wovens, the fabrics that are bleached, dyed or printed. The Woven fabric production comes from composite textile mills in organised sector or fabrics manufactured on handlooms or powerlooms, the decentralised sector.

Since 7-8 years back, there has been a change of breaking of composite mill into separate units for Spinning, Weaving and Processing units. Those units who did not change or modified their machinery, eventually became sick or failed. With the current liberalisation trend of the Central government, there is a boom of 100% E.O.U. for yarn production and ready-made garments. These E.O.U.s are adopting stringent quality control measures of international standards(ISO). Apart from Yarn exports, the major area of textile exports is ready-made garments and then comes the handloom fabrics. The readymade garment industry requires flexibility in design, colours, textures, novelty effects etc. but in short lengths, say 5000-10000 meters, because the demand is constantly changing as per requirements of consumer and fashion trends. The organised mill sector produces one type of fabric in large lengths, say 0.5-1 lac meters like Grasim, Raymonds etc. Therefore, the garment industry mainly depends on powerloom sector and next on mill sector. The handloom area is rather restricted to silk fabrics, draperies.

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bedsheets, tapesteries, curtains, shawls etc. which do not interfere with mill or powerloom sector.

But whether it is a handloom sector, powerloom sector or mill sector, the need for Woven designs is a must; and if the fabric dyed or printed, there is a need for Printed designs i.e. a need for Woven or Printed Designers. At places, where there is heavy powerloom base, there is an immense demand of good designers. The Weaving and processing industry have installed CAD systems and they will need people trained in using these softwares.

The government policy is in favour of self-employment and there are several schemes exclusively for Women entrepreneurs. Textile Printing & Narrow weaving are such area where lies the prospects for entrepreneurship. The girl's settlement is generally flexible, many leave jobs due change of place after marriage, Hence the multifarious skills imparted to the students through this programme will enable them to start their own work depending upon new environment.

Some opportunities are also available for girls in mill sectors in their Testing departments. Such opportunities also exist in research labs, Govt. organisations.

The All India Council for Technical Education, New Delhi has approved the proposals of State Govt. for opening a new Women's Polytechnic at Gwalior for diploma courses in Interior Decoration, Commercial Practice, Computer Science,

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Medical Lab. Technology, Beauty Culture and Textile Design. Accordingly the State Government has started a new polytechnic named Govt. Women's Polytechnic at Gwalior.

Gwalior has a traditional textile background, the ancient Chanderi Sari to latest Grasim Industries. The nineties has been significant in industrial growth of Gwalior with the Malanpur industrial area came into existance. Ceat Limited - a tyre cord producing unit, C.T. Cotton - a yarn producing unit, Gangwal Udyog - a weaving unit are already established. New units of Grasim and Raymonds are coming shortly. About 5-6 powerlooms industries also exist in Gwalior and vicinity. The Govt. Polytechnic, Gwalior is also running a diploma programme in Textile Technology since 1913. There is also a Fine Arts College in Gwalior. Therefore, the environment of Gwalior is highly suitable for starting a course on Textile Design.



M.P. BOARD OF TECHNICAL EDUCATION, BHOPAL

FIRST SEMESTER DIPLOMA PROGRAMME IN "TEXTILE DESIGN"

S. NAME OF COURSE	SCHEME OF STUDY		SCHEME OF EXAMINATION				REMARKS					
	Theory	Lab.	Term work	Lab. work	I. II.	Theory Paper		Dura tion.	Pract ical.	Dura tion.	Marks	
1. COMMUNICATION SKILL.	8(128)	-	20	-	10	10	01	3Hrs	100	-	-	-
2. BASIC DESIGN	-	14 (224)	-	20	-	-	-	-	-	01	4Hrs	50
3. FREE HAND SKETCHING & DRAWING	-	14 (224)	-	20	-	-	-	-	-	01	4Hrs	50
TOTAL	8(128)	28 (448)	20	40	10	10	01	1-30	1-30	02	-	100

NOTE: 1. No. of Theory Papers: 01
 2. Total Theory Marks : 100
 3. No. of Practical : 02
 4. Total Practical Marks: 100
 5. Total marks of Sessionals: 180
 Progressive assessment & Practicals.

6. Ratio of theory marks 100:180 and sessional+Prog. assess. +Practical.
 7. Total Marks : 280

Passing Marks for :
 8(a) Theory : 33%
 8(b) Practical: 40%
 8(c) Sessional: 60%

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FIRST SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
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COURSE :: COMMUNICATION SKILL

R A T I O N A L E

English is yet the strongest language of communication both within and outside the country and one's command in english reflects one's personality. Moreover, the literature available in textile subjects is entirely in english and therefore the capacity to learn, understand and write in english is also essential. The aim of this course is not only to provide basic education in english but also to make the students capable of good conversation, writing formal and informal letters, inter-departmental memos, communicate with sales, marketing, finance etc. deptts.

The topics of national interest such as environment pollution, population growth, adult-literacy, family planning, rural development etc. are included in form of precis writing and essays.

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FIRST SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
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COURSE :: COMMUNICATION SKILL.

C O N T E N T S

(A) Prose

Text from 'A Course in Pre-degree English' -

1. The Eleph.
2. The Golden Goose.
3. The World Population.
4. I said I'D Pack.
5. My strange Visitor
6. What is a Newsman
7. Fathers Room
8. The Escape from Agra
9. Travelling through India.
10. Dusk.

(B) Applied Grammer.

1. Countables and Uncountables.
2. Articles.
3. Use of "Some" & "Any" & other Determiners.
4. Present Tense.
5. Auxiliary verbs.
6. Present Continuous.
7. Perfect Tense.
8. Use of "Since" & "For".
9. Present Perfect & Perfect Continuous
10. Past Indefinite.
11. Use of "Shall", "Will", and "going to".

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- 12. Past Perfect Tense
- 13. Use of "If" & "Unless".
- 14. Narration. 15. Voice 16. Preposition.

(C) Letter Writing

- 1. Application for job.
- 2. Letter seeking enquiry, placing orders.
- 3. Writing inter-departmental memos.
- 4. Letter of complaints.
- 5. Letters related with Sales & Purchase.

(D) Translation: From Hindi to English & English to Hindi.

(E) Precis writing.

(F) Paragraph writing.

(G) Essays ; on topics of National importance, such as ;
Environmental pollution; population growth;
Adult literacy; Rural Development, & etc.

NOTE:

Text : Prose.

- i) Short Questions based on the Text.
- ii) Composition Type Questions based on the Text.
- iii) Vocabulary based on the Text.
 - Use of words & phrases.
 - One word substitution
 - Prefixes and suffixes.

BOOKS RECOMMENDED

- 1. 'A Course in Pre-Degree English' by Macmillan Co. of India.
- 2. 'Living English Structure' - W.S. Allen.

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FIRST SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
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COURSE ::: BASIC DESIGN

C O N T E N T S

- Medias of expression, tools and art materials and their use; Pencils, T-Squares, set-squares, drawing board, Compass and liner; Paper for sketching and painting; Equipment for creating textures; Enlargement and deduction of designs and figures by Epidiascope and Photocopier.
- Elements and principles of basic design - Dots, lines and shapes; Tone, colour and texture; Relationship of negative and positive space; Proportion; scale harmony, relationship, contrast, variety, unity, Rhythm, etc.
- Observation of art forms and objects; tradition and modern Folk and geometric, realistic and abstract.
- Element of Illusion; Three dimensional effect; Time, rhythm and movement.

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FIRST SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
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COURSE :: FREE HAND SKETCHING AND DRAWING

R A T I O N A L E

A lot of ideas in designing are inspired by nature and surroundings. Since designing is basically an art, the skill to draw various types of objects by freehand sketching and drawing in different mediums is necessary, so that they can understand the use of colour, shading etc in order to generate fascinating motives for textiles.

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FIRST SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
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COURSE ::: FREE HAND SKETCHING AND DRAWING

C O N T E N T S

- Free Hand Sketching - Sketches in line drawing, brush strokes, broken lines, shading with pencils and coloured sketches ink/crayon/water colour. Sketches for following- Flowers, trees, leaves, building, monuments, rivers, boats, market scenes.
- DRAWING = Object Drawing : Basic geometrical shapes, expression of opaque and transparent objects, solidity of objects through shading. Composition of still life objects in different mediums such as pencil, crayons and poster colours.
- Nature Drawing : Study of natural objects for understanding of colours, form, texture, Drawing in different mediums for flowers, creepers, leaves, birds, fishes, feathers, etc.

At least five sheets per topic to be submitted from Sketching, object and Nature drawings.

M.P. BOARD OF TECHNICAL EDUCATION

SECOND SEMESTER DIPLOMA PROGRAMME IN "TEXTILE DESIGN"

S. N.	NAME OF COURSE	SCHEME OF STUDY		SCHEME OF EXAMINATION				REMARKS					
		Contact hours per week (Semester)		PROGRESSIVE ASSESSMENT		BOARD EXAMINATION							
		Theory	Lab. Total	I.	II.	Theory Paper	Practical		Duration	Marks			
1.	DESIGN OF INDIAN TEXTILE	6 (96)	8 (128)	20	20	10	10	01	3Hrs.	01	05		
2.	TEXTILE FIBRES AND YARNS	6 (96)	-	20	-	10	10	01	3Hrs	100	-		
3.	EMBROIDERY WORK	4 (64)	12 (192)	20	20	10	10	01	3Hr.	100	01	3hrs	50
TOTAL		16 (256)	20 (320)	60	40	30	30	03	-	300	02	-	100

Note: 1. No. of Theory Papers : 03
 2. Total theory marks : 300
 3. No. of Practicals : 02
 4. Total practical marks: 100
 5. Total marks of sessionals: 260
 Progressive assessment & Practicals.

6. Ratio of Theory marks : 300:260
 and sessionals: Prog. assess. : 1
 + Practical.
 7. Total Marks : 560

Passing marks for -
 8(a) Theory : 33%
 8(b) Practicals: 40%
 8(c) Sessionals: 60%

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SECOND SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
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COURSE : DESIGN OF INDIAN TEXTILES

R A T I O N A L E

India has centuries old tradition of manufacturing exotic textile goods which have been appreciated worldwide. The traditional art of tie and dye, Batik; the figured and embroidered muslins, Chikan; Benarsi, Ikat, Patola and other fabulous sarees; Kashmiri and Kullu's shawls are some to quote. There is a marvellous treasury of artistic designs in these traditionally old articles from which a textile designer can generate her own ideas, taking abstracts from this vast stock of woven & Printed designs.

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SECOND SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
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COURSE : DESIGNS OF INDIAN TEXTILES

C O N T E N T S

Study of traditional Indian textile, their specialities
 brief manufacturing process and designs, from the followings:-

- Handwoven Cotton Fabric - Jamdani, Chanderi, Maheshwari.
- Silk Brocades - Benarasi, Baluchari Buttidar, Tanchui.
- Embroidery - Phulkari, Kashidakari, Bengal Kantha,
 Benarasi embroidery, Zari, Kathiwar and
 Kutch embroidery.
- Dyed, Printed and Painted - Tie dyed Bandhani or Chunari,
 Kalamkari, Kalamdar, Ikat, Madhubani, Patola.
- Shawls - - Kashmiri shawls - Pashmina, Jamiawar.

Note: The study shall include specifically the
 designs used in traditional fabrics, in sarees, Border,
 Corner, Centre, Pallav and allover.

PRACTICALS : The motifs of various designs in traditional
 textile shall be drawn on paper with colour. At least one
 design each from the fabrics studied in theory.

REFERENCES:

- Masterpieces of Indian Textile - Tareporevala & Sons.
- Series of India - Wiley Eastern.

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SECOND SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
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COURSE :: TEXTILE FIBRES & YARNS

R A T I O N A L E

The fibre is a starting material for manufacturing fabrics. The physical and chemical properties of fibre greatly affect the fabric appearance, feel, recovery from crease, resistance to ball formation(Pilling), strength fabric cover, light and chemical resistance, washability etc. The selection of dyestuff for dyeing and printing purposes is also made according to the type of characteristic of fibre. Hence a designer should have sufficient knowledge about the fibre and yarns which are used for making a particular design either woven or printed. Therefore, the topics of making of doubled, fancy and novelty yarns are also included.

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SECOND SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
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COURSE :: TEXTILE FIBRES & YARNS

C O N T E N T S

- Classification of textile fibres

PART -A NATURAL FIBRES

- Cotton, Varieties of cotton, Flowsheet and brief study of method of production of Carded and Combed yarns. (Objectives only); Physical, Chemical properties and end uses.

- Wool; Qualities and Grades of wool, Flowsheet and brief study of method of production of Woolen and Worsted yarns; Physical, Chemical properties and end uses.

- Speciality hair fibres; Classification, brief study of Mohair and Cashmere wool fibres.

- Silk; Degumming, Reeling, Throwing and Weightening, Physical, Chemical properties and end uses.

PART - B MAN MADE FIBRES

- General idea of fibre structure, Polymers & fibres, Degree of polymerisation, crystallinity & orientation.

- Fundamental of Spinning processes for man made fibres; Dry, Wet and Melt Spinning, Drawing and Twisting.

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- Brief study of manufacturing processes for Viscose Polynosic, RWN, Acetate and Triacetate, Polyester, Nylon, Acrylics & Modacrylics, and Polypropylene (Outline and Flowsheet only); Physical, Chemical properties and end uses.
- Yarn Terminology - Spun, Filament and Texturised filaments; Object of Doubling, Types of doubled yarns, Method and Styles of Doubling, Brief study of method of manufacturing fancy yarns.

R E F E R E N C E S

1. Textile Fibres - Matthews
2. Man Made Fibres - F.W. Moncieff
3. Essentials of Practical Cotton Spinning -
- T.K. PATTABHIRAM
4. FABRICS -

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SECOND SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
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COURSE :: EMBROIDERY WORK

R A T I O N A L E

Embroidery is an old art of decorating the fabrics and garments. The exquisite traditional embroidery like Phulkari of Punjab, Kentha of Bengal and Chiken work of Lucknow are very popular, The main aim of introducing embroidery is to provide basic skills to the students so that they can have the idea to use it with woven and printed designs/fabrics as and where desired.

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SECOND SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
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COURSE :: EMBROIDERY WORK

C O N T E N T S

- Equipment for hand embroidery such as needle, frame, scissors, Thread - holder thimbles carbon paper, Tracing paper, Brown paper, yarn, D.C.M. Anker and Rayon skeins.
- Transferring the design on fabric; by carbon paper; by pounce method; rubbing method; tracing table method; pressing method.
- Brushing and airing; clean storage, immediate repairing stain removal, proper laundry, methods, Intelligent choice of cleaning materials, proper pressing and storage.
- Patch work; material required design for patch work method of work; Smocking - material used and methods of smocking and honey comb; Cut work - material used and methods; Applique work;
- Basic stitches of embroidery such as runing, coaching chain, stom, herring-bone fern, feather, wheat fishbone, flat, roumanian, laxy-daizy, long and short, mirror work - Their knowledge and application on fancy articles, or on garments.

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- Selvage, count of cloth, Balanced construction and straightening of material, washing and pressing before cutting.

PRACTICALS

- Knowledge of different types of Embroidery.
- Detail study of basic embroidery stitches and their application.

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THIRD SEMESTER DIPLOMA PROGRAMME IN "TEXTILE DESIGN"

S. N.	NAME OF COURSE	SCHEME OF STUDY		SCHEME OF EXAMINATION			REMARKS						
		Contact hours per week (semester)		SESSIONAL MARKS	PROGRESSIVE ASSESSMENT			BOARD EXAMINATION					
		Theory	Lab. Total		I.	II.		Dura Marks	Prac Marks				
1.	FABRIC CONSTRUCTION & ANALYSIS-I.	4 (64)	10 (160)	20	10	10	01	3hrs.	100	01	3hrs	50	
2.	ELEMENTS OF HANDLOOM WEAVING.	6 (96)	10 (160)	20	10	10	01	3hrs	100	01	3hrs	50	
3.	DRAWING AND PAINTING.	-	10 (160)	-	-	-	-	-	-	01	3hrs.	50	
	TOTAL	12 (192)	24 (384)	40	20	20	02	-	200	03	-	150	

NOTE: 1. No. of theory papers : 02
 2. Total theory marks : 200
 3. No. of practicals : 03
 4. Total practical Marks:150
 5. Total marks of sessional progressive assessment and Practical. : 290

6. Ratio of theory Marks : 200:290 and sessional + Practical. : 90:290
 7. Total Marks : 490

8. Passing marks for
 8(a) Theory : 33%
 8(b) Practicals:40%
 8(c) Sessionals:60%

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THIRD SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
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COURSE :: FABRIC CONSTRUCTION & ANALYSIS - I.

R A T I O N A L E

Fabric structure is the very basis of woven textile design. Different weaves and their derivatives like Plain, Twill, Crepe are included. The cloth-analysis component will empower the students to understand the familar weaves and weaving particulars. Several new samples can be developed and a library can thus be maintained having samples and their analysis report.

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THIRD SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
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COURSE :: FABRIC CONSTRUCTION AND ANALYSIS - I.

C O N T E N T S

- Elements of Woven Design; Classification of Woven fabrics, Basic operations in woven cloth production, Methods of fabric presentation, Weave repeat unit, Construction of drafts and lifting plans - Methods of indicating drafts and lifting plans, Relations between Design, drafts and lifting plans, construction of drafts and lifting plans from design; draft from given designs and lifting plan and designs from given drafts and lifting plans, system of drafting, Heald calculations and Denting.
- Construction of Elementary Weaves; Plain weave and its derivatives.
 - (a) Warp rib weaves (b) Weft rib (c) Hop sack mat or basket weaves (d) Mock rib effects; ornamentation of plain weaves,
- Twill on 3-, 4-, 5-, 6-, 7-, 8- ends and picks, systematic construction of twill weaves.
- Derivatives of twill weaves - elongated twills, broken and ~~trapezoidal~~ twills, pointed, waved or Zig-zag twills, Herring-bone twills, diamond and dieper designs, Construction of diamond designs upon pointed drafts.
- Seteen and satin - regular and irregular.
- Barley-corn weaves, Stitched hopsacks, Twilled hopsacks.

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- Read count calculations - Stock port system.
- Yarn diameters and cover factor related to cloth setting.
- Cost estimation related to different weaves and constructional particulars.

PRACTICALS

- Analysis of following fabrics samples;
 Plain weaves; Rib weaves; Mat weaves; Ordinary
 Twill weaves; Broken Twill weaves; Transposed Twills,
 Zig-zag twill weaves; Diamond weaves; Hucks Back
 weaves; Honey comb weaves; Moch leno weaves; Crepe
 weaves; for design, draft and peg plan; ends and picks
 per inch, count in warp and weft, pattern in warp and
 weft, weight, assessment of finishing, etc.

BOOKS RECOMMENDED:

1. Watson's Textile Design & Colour by Z. Groscki.
2. Grammer of Textile Design by Nisbet.

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THIRD SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
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COURSE : ELEMENTS OF HANDLOOMS WEAVING

R A T I O N A L E

The handlooms are the most primitive weaving machines and the quality of fabrics produced is very soft and supple in feel. The silk fabrics are exclusively made on handloom because of the soft nature of fibres. The handlooms fabrics cover a wide market both domestic and abroad. The handlooms (sample looms) are also used for making designs - samples. Hence the knowledge and skills to operate a handloom is important for a student working for woven design work.

The textile industry and powerloom sector require textile designer who can provide fascinating and innate designs which should be both practically and economically feasible. Therefore the knowledge of preparatory processes of weaving equipped with Dobby & Jacquard, is an essential component for a prospective Textile Designer. The skill is not desired for the production purpose but how to set parameters of make changes in designs in order to improve efficiency waste reduction, best possible use of residual stock of raw materials, economic feasibility etc.

THIRD SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
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COURSE : ELEMENTS OF HANDLOOMS WEAVING

C O N T E N T S

- Winding; object, types of winding machine.
- Warping; Object, types of warping machine, Brief study of sectional warping machine.
- Drawing-In; manual and semi mechanical methods of drawing-In.
- Pirn Winding; Object of Pirn winding advantages of rewound weft.

HAND LOOM WEAVING:

- Importance and scope of handloom weaving, types of handloom fly shuttle-looms, Path of wearp through handloom.
- Study of handlooms; Primary and secondary motions, Brief study and brief description of handloom parts such as heald shaft, lifting, sley, shuttle box, shuttle, Picker, Read, Beam, Back rest, Front rest, Temples etc.
- Different kinds of shedding; Bottom close shedding, centre close shedding, open shedding and semi open shedding; their advantages and uses.
- Types of healds; Limitation in heald shedding.

CALCULATIONS:

- Definition of count of yarn.
- Indirect system of counting such as English cotton, French cotton, spun silk, Linen, Worsted and metric hank.

- Direct system of counting such as Denier and Tex, relation between English cotton, Denier and Tex, Calculations as regards count, length and weight of yarn in indirect and direct systems of numbering yarns.
- Read count calculations; stock port system.
- Calculation related to warping i.e. Total No. of ends, total sections of beams, beam-length, section width and weight of warp.

Construction of Elementary Weaves:

- Classification of woven fabrics.
- Plain weave and its derivatives (a) Warp rib weaves (b) Weft rib weaves (c) Mat or Hop sack or basket weaves (d) Mock rib effects; Ornamentation of plain weaves.
- Basis of twill weaves and their derivatives; pointed Herring bone, Zigzag or wavy twills, broken and transposed twills, Diamond twills.
- Satin and sateen weaves - regular, irregular.
- Construction of draft, Peg plan and denting plan of the above designs.

P R A C T I C A L S

- Practice of yarn knotting.
- Practice of winding by hand on charkha.
- Practice of winding on machine.
- Practice of warping on machine.
- A practice of drawing-in and denting of warps.
- Practice of winding of weft on pirn winding machine.

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- Practice of Beam preparation on handloom.
- Practice of weaving of various designs on handlooms, and sample looms;
 - (i) Plain weave
 - (ii) Warp and weft rib.
 - (iii) Twill weaves
 - (iv) Satin and Sateen weaves.
- Practice of weaving of various fabrics on sample looms:
 - (i) Plain cloth; Long cloth, certians, Handkerchief, Poplin, veil, mulls, etc.
 - (ii) Twill cloth; Drill, Jean, Gaberdine, Denim, etc.
- Practice in the preparation of warping beams on sectional warping machine.

R E F E R E N C E S

- Weaving Mechanism - Vol. I. - by N.N. Benetjee.
- Watson's Textile Design and Colour by - Z. Grosicki.
- Weaving calculations by - R. Sen Gupta.
- Cotton Yarn Weaving (TAI), R.N. Kanungo & A.R. Garde.

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THIRD SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
XX

COURSE :: DRAWING & PAINTING

R A T I O N A L E

The use of skills generated through free hand sketching, object and nature drawings and ideas derived from traditional textile design, sculpture etc. in making designs and painting on fabrics is the objectives of this course.

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THIRD SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
XX

COURSE : DRAWING & PAINTING

C O N T E N T S

- Understanding valid space through live from colour and texture. Developing designs (placement and repeat), Design for Paisley, ogee and centre line pattern, geometrical designs, folk art, photographic image; composition of basic objects, keeping in mind harmony, Balance & Space.
- Texture medium creation by Thread pulling, Stencil spray, thread rolling, ink drops, blowing of coloured inks, marble effects etc.
- Fabric Painting : Practicising febric painting by acrylic colours. Floral patterns, Butties; Natural scenes, abstracts from sculpture, etc. Articles to be selected for Wall hangings, table cloth, Chunaries, sarees, etc.

M.F. BOARD OF TECHNICAL EDUCATION, BHOPAL

FOURTH SEMESTER DIPLOMA PROGRAMME IN "TEXTILE DESIGN"

S. N.	NAME OF COURSE	SCHEME OF STUDY		SCHEME OF EXAMINATION					REMARKS					
		Contact hours per week (semester)		SESSONAL MARKS	PROGRESSIVE ASSESSMENT		BOARD EXAMINATION							
		Theory	Lab. Total.		I.	II.	Theory Paper.	Dura tion		Pract ical. tion	Dura tion			
1.	COLOUR AND DESIGN	06 (96)	06 (96)	20	-	10	10	01	3hrs.	100	-	-		
2.	CHEMICAL PROCESSING-I.	06 (96)	10 (160)	20	20	10	10	01	3hrs.	100	01	3hrs.	50	
3.	COMPUTER LITERACY & APPLICATIONS	06(96)	08 (128)	20	20	10	10	01	3hrs.	100	01	3hrs.	50	
TOTAL				18 (288)	36 (576)	60	40	30	03	-	300	02	-	100

NOTE: 1. No. of theory papers : 03
 2. Total theory marks : 300
 3. No. of practicals : 02
 4. Total practical marks : 100
 5. Total marks of sessionals: 260
 and progressive assessment and practicals.

6. Ratio of theory marks : 300:260
 and sessional + Prog. assess.
 + Practical. s.

7. Total Marks : 560
 8.

Passing marks for-
 8(a) Theory: 33%
 8(b) Practical: 40%
 8(c) Sessionals: 60%

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FOURTH SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
XX

COURSE :: COLOUR AND DESIGN

R A T I O N A L E

Colours play a very important role in textile designing, both in woven and printed designs. In woven designs, the application of colours is constrained by rules of weaving whereas in Printing, the designs and colours are limited by one's imagination only. Hence it is assumed whereas the 'theory of colours' is concerned, the knowledge is required both for Woven & Printed designs but the Woven designs will have some technological considerations whereas the Printed designs will have artistic considerations. accordingly, the topics are included.

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FOURTH SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
XX

COURSE : COLOUR & DESIGN

C O N T E N T S

ELEMENTS OF COLOUR

- Colour Vision & light theory of colours, Colour terminology-Hue, Chrome, Value, Intensity & tones.
- Complimentary colours
- The chromatic Circle
- Pigment theory of colours, Attributes of Primary and Secondary colours; Neutral Colours; Warm & Cool colours.
- Modification of Colours
- Coloured greys
- Colours in combination - Colour contrast, Contrast of hue, Contrast of tone.
- Colour Harmony; Basis of Colour Harmony.
- Relative spaces occupied by colours.
- Divisional Colours.
- Influence of fabric characteristics on appearance of colour.

COLOUR APPLICATION IN WOVEN DESIGN

- Mixed colour effects, fibre mixture yarns, Twist yarn mixtures, Combination of differently coloured threads, Coloured Stripes & Checks, Simple regular patterns, Simple irregular patterns; Compound orders of colouring, Counter-change patterns, Graduated patterns, Modification of Stripes & Checks pattern, Balance of contrast in pattern range designing, Colour combination in relation to weave.

SIMPLE COLOUR & WEAVE EFFECTS

- General considerations arising from the combination of Weave with colour -
Representation of colour & weave effect on design paper,
Classification of colour & weave effects, Methods of producing variety of effect in the same weave & colouring.
- Examples of Simple weave & Colour combination -
Continuous line effects, Hound's tooth pattern, Bird's eye and Spot effects, Hairlines, Step patterns, All-over effects.

COMPOUND COLOUR AND WEAVE EFFECTS

- Stripe Colour & Weave Effects
- Check Colour & Weave Effects
- Special Colour & Weave Effects
- Figured Colour & Weave Effects

P R A C T I C A L S

- Analysis of woven coloured samples and identifying the pattern in warp and weft and the weave.
- Preparation of samples using colour and weave effects.

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FOURTH SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
CX CX

COURSE: CHEMICAL PROCESSING - I.

(Bleaching & Dyeing)

R A T I O N A L E

A grey fabric prepared on loom has not of much value until it is bleached, sometimes dyed or printed and finally finished. All this area is covered under 'Chemical Processing'. Since this area is quite wide, the course is covered in two parts. This part covers 'Bleaching & Dyeing'. The skill to do bleaching and dyeing on yarn and fabric samples of different fibres and also in small lots or in bulk form, is main objective of this course.

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FOURTH SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
XX

COURSE : CHEMICAL PROCESSING - I

(Bleaching & Dyeing)

C O N T E N T S

PART - A

- Stitching, shearing & Singeing, Mercerisation (Objects only) Natural and other impurities in fibre, yarn and cloth and principles behind their removal; Purpose of Desizing, Use of acids and enzymes for desizing, their respective advantages/disadvantages. (Fibres: Cotton, Regenerated fibres, Synthetics & blends)
- Object of scouring, Chemicals required in scouring cotton and wool, Other conditions-Time, Temp. Conc. pressure, quantity of water etc.
- Bleaching of cotton goods, Bleaching agents for cotton materials - Bleaching powder, Sod. Hypochlorite, Sodium Chlorite and Hydrogen peroxide. Bleaching of cotton hank by Sod. Hypochlorite. Bleaching of coloured goods, Formation of algae and its prevention, Faults in bleaching & their removal. Brief study of bleaching of wool & silk. Blueing and Optical Whitening agents & their uses.

PART - B

- Classification of Dyes according to method of their application, Importance of Time, Temperature and concentration; Mass liquor ratio and %age shade.
- Outline of application of direct dyes to cotton, Viscose rayon, Jute and wool - fastness to washing and light.
Advantages/disadvantages of direct dyes.

- Application of azoic colours on cotton & Viscose rayon materials. Tub-liquoring and vat methods for yarn.
- Application of sulphur dyes, particularly sulphur black - standing bath method - fastness and other properties.
- Application of various classes of Vat dyes on cotton. Importance of vat dyes and difficulties in thier application, causes and remedies of uneven dyeing - fastness properties.
- Application of reactive dyes on cotton & wool, Special dyeing method of turquoise blue shades, Acid dyeing of wool.
- Dyeing of aniline black, mineral khaki and pigment colours.
- Acquaintance with the principles of dyeing Nylch, (Acid & Disperse), Polyester and acrylic material with Disperse dyes.

Note:

In this part, the aim is to provide sufficient knowledge and skills so that the students can himself do dyeing of yarn samples with different classes. Hence, only the method of application of colour is to be discussed with no details about chemistry or development of techniques/milli machinery etc.

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PRACTICALS

- Application of various classes of dyes on cotton, silk, wool, Nylon, Viscose and Acrylic yarns and fabric samples. Demonstration of pressure dyeing of Polyester. Dyeing of blends-PC, Acrylic Wool, Cotswool.

All steps viz. Selection of dyestuff, Calculation of quality of dyestuff, mass-liquor ratio, preparation of recipe, dyeing conditions etc. are to be covered. Preparation of shade cards.

REFERENCES

1. Chemical processing of cotton and PC blends - TA(I)
2. A Glimpse on chemical tech. of textile fibres -
- R.R. Chackraverty.

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FOURTH SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
XX

COURSE : COMPUTER LITERACY & APPLICATIONS

C O N T E N T S

- Introduction to Computer System.

Block diagram of a computer - CPU, INPUT AND OUTPUT devices primary and secondary storage devices, computer peripherals such as digitals, scanners, mouse; printers, dot-matrix, ledger and ink-jet printers. Brief study of a simple computers; idea about PC, mini, main frame and Super computers.

- Introduction to Operative system.

'DOS' Operative System : How to Start, DOS Basics; The Command Prompt, Typing a Command, Viewing the Contents of a Directory, Changing Directories, Changing Back to the Root Directory, Creating a Directory, Deleting a Directory, Changing Drives, Copying Files, Renaming Files, Deleting Files, Formatting a Floppy Disk; MS-DOS Organize - Files, Directories, Drives and Paths to Specify location of files, Naming files and directories, HELP, MS-DOS Shell help. (The latest version of the DOS should be taught).

Windows Operative System - Understanding various commands under 'Windows'.

- Word processing - Creation, Editing, Formatting of Document, Search & Replacement of Text, Block Operation, Mail-merge, Spelling Checker, Save, Print.

- Spread Sheet - Understanding Lotus 1,2,3 or equivalent.
 Commands: Worksheet, Copy, Graph, Range, Move, Print, Data, File and Printgraph. Making complex spread sheets using formulae, conditions etc. Execution, making graph and familisation with various commands.
- Introduction to Programming Languages - Brief idea about various programming languages, learning of 'BASIC'.
- Commands in BASIC ; Input Output statements, Control Statements, Operators and Built-in functions, String and string variables, subscripted variables, Looping, Files, String functions and formated printing, Printer Control statements.

R E F E R E N C E S

- Operation Manuals.

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M.P. BOARD OF TECHNICAL EDUCATION, BHOPAL
 FIFTH SEMESTER DIPLOMA PROGRAMME IN "TEXTILE DESIGN"

S. N.	NAME OF COURSE	SCHEME OF STUDY		SCHEME OF EXAMINATION				SEM ARKS.					
		Contact hours per week (semester)		SESSIONAL MARKS	PROGRESSIVE ASSESSMENT		BOARD EXAMINATION						
		Theory	Lab. Total		I.	II.	Theory Paper		Dura Marks	Practical Marks	Dura tich Marks		
1.	FABRIC CONSTRUCTION AND ANALYSIS-II.	4 (64)	08 (128)	20	20	10	10	01	3hrs	100	01	3hrs	100
2.	HANDLOOM TECHNOLOGY	04 (64)	10 (160)	20	20	10	10	01	3hrs.	100	01	3hrs	100
3.	CHEMICAL PROCESSING-II.	04 (64)	12 (128)	20	20	10	10	01	3hrs	100	01	3hrs	100
4.	COMPUTER AIDED TEXTILE DESIGN	-	6 (96)	-	20	-	-	-	-	-	01	3hrs	100
TOTAL		12 (192)	24 (360)	60	60	30	30	03	-	300	04	-	400

NOTE: 1. No. of theory papers : 03
 2. Total theory marks : 300
 3. No. of practicals : 04
 4. Total practical marks : 400
 5. Total marks of sessionals: 580
 Progressive assessment and Practical.

6. Ratio of Theory Marks : 300:580
 and Sessional+Prag. assess.
 †Practicals.
 7. Total Marks : 880

Passing marks for
 8(a) Theory: 33%
 8(b) Practical: 40%
 8(c) Sessionals: 60%

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Figured Designs:

- Basic idea of Damask and Brocade designs.
- Construction of Damask and Brocade designs on graph paper in various styles for different purposes.

Yarn Diameter and Cover factor related to Cloth Setting Calculations :

- Cost estimation of weight of warp and weft yarn, Labour charges, waste and overhead cost etc.

PRACTICALS

- Analysis of various fabrics samples for designs, draft and peg plan, ends per inch, picks per inch, count in warp and weft, pattern in warp and weft, assessment of finishing, weight.
- Study of all such design which can be constructed on 12 healds.
- Colour patterns and colour weaves effects (Study), the samples for analysis will be choosen from standard fabrics and those envisaged in theory.

BOOKS RECOMMENDED :

- Watson's Textile Design & Colour. by - Z. Groscki.
- Watson's Advance Textile Design. by - Z. Groscki.

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FIFTH SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
XX

COURSE :: HANDLOOM TECHNOLOGY

R A T I O N A L E

Advanced designing, and their application on hand looms equipped with dobby, jacquard and multiple boxes is the main feature of this course. Understanding of Cloth defects and their identification is also important from the point of view of selection of cloth. Narrow weaving may be one area where the scope for entrepreneurship exist. The concept of sizing is also introduced.

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FIFTH SEMESTER ' DIPLOMA IN TEXTILE DESIGN'
XX

COURSE :: HANDLOOM TECHNOLOGY

C O N T E N T S

- Sizing; Object, various system of sizing, brief description of sizing, An introduction and classification of sizing ingredients with brief details.
- Dobby; - Scope of doobby, uses of doobby, brief study of single lift doobby as used on handloom, Methods of pegging the lags.
- Jacquard; Scope of Jacquard, Brief study of single lift single cylinder jacquard as used on handloom. Card cutting and card lacing(Transferring the design on pattern cards and lacing. Mounting on Jacquard.
- Multiple Box Loom; uses of multiple box motion, brief study of multiple box motion.
- Semi Automatic loom; Advantages of semi auto handloom, Brief description of Chitaranjan loom, Tara loom and other semi automatic Handloom.

Cloth defects

Classification of cloth defects;

- (a)Warp defects:- Broken ends, wrong ends, wrong denting, wrong pattern, selvedge defects, stitching and floats.
- (b)Weft defects :- Weft bar, miss picks, Thick and thin places Tight picks, shuttle marks, design cut, double pick.

(c) Cloth defects :- Oily spots, dirty cloth, hairy cloth, read and temple marks.

Narrow Weaving :

- Scope of narrow weaving, various types of narrow weaving
- Brief study of needle loom, various manufacturing methods of narrow fabrics such as spindle tap, elastic fabrics etc.

P R A C T I C A L S

- Practice of hank sizing
- Practice of Pegging the legs on dobby and weaving on handloom.
- Practice of Jacquard design and practice of card cutting and card lacing.
- Weaving practice on semi autohandloom and multiple box motion.
- Practice of weaving of various designs on handlooms and sample looms.

- (i) Towelling fabrics
- (ii) Sari with Sari border.
- (iii) Combination of weaves etc.

BOOKS RECOMMENDED:

- Cotton Yarn Weaving(A.T.A.) by - R.N. Kenugo & A.R. Garde.
- Weaving Mechanism(Vol.I&II). by- N.N. Banerjee.
- Sizing material-Machine-Methods. by-Prof.D.B.Ajgoanker.
- Handloom weaving Technology - Allen A. Pannin.

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FIFTH SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
XX

COURSE : CHEMICAL PROCESSING-II.
(Printing & Finishing)

R A T I O N A L E

Printed designs are equally important part of textile design as woven designs. The details study of hand and screen printing techniques and numerous styles of printing are the main topics of this course. The market value of a product is determine mainly on its finishing. Hence a basic idea about various popular finishing treatment is also included. It should be clear that the aim is to provide sufficient knowledge and skills for entrepreneurship purposes and therefore the mill machinery or large scale processing and details of mechanisms of machinery is excluded.

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FIFTH SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
XX

COURSE ::: CHEMICAL PROCESSING -II.
(Printing & Finishing)

C O N T E N T S

PART - A

- Methods of Printing, Hand block, Screen, aerograph, Stencil and Machine printing; Transfer method, Polychromatic dyeing and Maya Printing.
- Basic requirements for Printing - preparation of cloth, choice of dyestuff, choice of thickening agents and fixing methods. A brief study of above.
- STYLES OF PRINTING : Direct Style - Vat Dyes, Indigosol dyes, Rapidgen dyes; Rapid fast colours; Naphthols, Bases and alcyan colours, Pigment dyes, Reactive dyes, Aniline black, Fluorescent dyes, Khadi print, Metallic powder print, Phthalogen Blue, Caustic Print, Carbonise print.
- (A brief study of printing ingredients, process, composition, merits and demerits)
- Discharge Style - White and colour discharge from azoic, reactive and Indigosol ground.
- Resist Style - Resist under Indigosol ground, AZOIC ground, aniline black, Phthalogen blue, and reactive grounds.
- Printing of PC blends.
- ~~Basic Printing~~ - Ingredients used and process
- Study of methods of metal & wooden block printing.

- Detailed study of screen printing - Equipment and material, Types of screen printing, Faults and their rectification, Study of rotary and flat screen and hand screen printing.

PART - B : FINISHING.

- Finishing of textile materials, Finishing of cotton materials, Temporary finish, heavy, medium and light finish, Conditions for getting desired finish.
- Chemicals and auxiliaries for temporary finishes - **Stiffeners, Softeners, Thermoplastic resins, Wetting agents, Blueing agents and optical Brighteners.**
- Back-filling type finish, Ordinary starch finishing, Calender finish.
- DURABLE FINISHES - Anti-shrink finishing; Resin finishing, chemicals for resin finishing; Anti-crease and Wash & Wear finishing, Durable press, Flame-resistant finishes, Water repellent and water-proof finishes, Soil-release finishes.
- REMOVAL OF STAINS FROM ALL TYPES OF TEXTILE FIBRES

R E F E R E N C E S

1. Chemical Processing of Cotton and PC blends -
The Textile Association(I).
- 2- A Glimpse on the Chemical Technology of Textile Fibres -
- R.R. Chackraverty.

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CHEMICAL PROCESSING - II.

PRACTICALS

- Practice of block and screening printing on various textile articles using different themes and colour schemes.
- Finishing of bleached goods.
- Finishing of dyed and printed articles.
- Water proofing of textile articles.

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FIFTH SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
XX

COURSE : COMPUTER AIDED TEXTILE DESIGN

R A T I O N A L E

CAD/CAM are now most User's friendly tools in most of disciplines in Engg. & Technology. These softwares are also available for woven (Dobby & Jacquard) and Printed fabrics. The computer simulates the fabric on the monitor or on paper - both mono and in colour depending upon the Printer used. Millions of shades are possible and the desired fabric is produced by just operating some commands. Databases can be prepared where information regarding thousand's of samples can be stored. Though there are certain limitations in the existing software, this is an emerging area where lot of imagination can be visualised in shortest time. Fabric Printing is not being used on computers because the cost of fabric printers is very high. However, unlimited designs for print can be generated and there is possibility of screen making as is done with Desk Top Printers now being commonly used for paper printing. The aim of this course is to enable the students to practise their learning of Fabric Structure and Printing, on computers, so that they may be in phase with the fast moving world.

FIFTH SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
XX

COURSE : COMPUTER AIDED TEXTILE DESIGNING.

C O N T E N T S

P R A C T I C A L S

- Features of available CAD tools for Textile Designing, e.g. 'Texstyle', 'Design Desk', 'Jay Cadtex', 'Cadventure' for Woven Fabrics and 'Cadventure-Printex', 'Design Studio' for Printed Fabrics.
- Peripherals available with CAD tools for Textile Designing, and their use.
- Understanding Commands for Woven Designs-
Designing for 16, 24 and 40 shaft Dobby, Editing features like COPY, MIRROR, REPLICATE; Instant Preview of Fabric, Designing of Fabrics having extra Warp; Float Checking; Automatic generation of Drafting, Warp & Weft patterns; Simulation of Complex Yarns like Space Dyed, Capsule Dyed, Printed, Summer-cool, Roving Grindrelle, Display of different designs at one time, Preview of three matching of the same fabric design on Screen and others (depending upon latest developments, Calculation of Weaving particulars, weight and cost.
- Understanding Commands for Printed Designs-
Scanning an artistic concept on paper, fabric or photograph into digitally controlled images on monitor, use of Computer aided drawing & Painting tools for modifications/creation of design, colour replication, colour separation.

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- Understanding operation of Computerised Sample.
- Understanding operation of Computerised Sample Dobby loom.

P R A C T I C A L S :

- Development of Woven Dob by Designs on computer system.
At least 30 hard copies of different designs (from course of 'Second Year Fabric Structure & Analysis) to be prepared.
- Development of Dobby Samples on computerised sample loom.
- Development of Printed Design on computer system
At least 20 hard copies on paper and transparencies to be prepared, using 'Print' software.
- Development of Printed samples by Screen Printing.

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M.F. BOARD OF TECHNICAL EDUCATION, BHOPAL
SIXTH SEMESTER DIPLOMA PROGRAMME IN "TEXTILE DESIGN"

S. N.	NAME OF COURSE	SCHEME OF STUDY		SCHEME OF EXAMINATION				REMARKS					
		Contact hours per week (Semester)		SESSIONAL MARKS	PROGRESSIVE ASSESSMENT		BOARD EXAMINATION						
		Theory	Lab.		I.	II.	Theory Paper		Dura tion	Practical	Dura tion	Marks	
1.	TEXTILE TESTING	6(96)	6(96)	20	20	10	10	01	3hrs	01	3hrs	100	
2.	MANAGEMENT AND ENTREPRENEURSHIP DEVELOPMENT.	6(96)	-	20	-	10	10	01	3hrs.	-	-	-	
3.	PROJECT	-	-	-	-	-	-	-	-	-	01	3hrs.	150
TOTAL		12(192)	24(384)	40	40	20	20	02	-	200	02	-	250

NOTE: 1. No. of theory papers : 2
2. Total theory marks : 200
3. No. of practicals & Project : 02
4. Total Practical & Project Marks : 250
5. Total marks of sessionals: 370 and prog. assess. & Project and Practicals.

6. Ratio of Theory Marks : 200:370 and Sessional+Prog. assess. +Pract.+Project.

7. Total Marks : 570

Passing marks for
8(a) Theory : 33%
8(b) Practicals : 40%
8(c) Sessionals : 60%
8(d) Project : 40%

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SIXTH SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
XX

COURSE :: TEXTILE TESTING

R A T I O N A L E

At present, the people are quite quality conscious. The fabric behaviour in actual life or use entirely depends upon type of fibre, %age of component fibres, types of yarns in warp & weft, and wet processing treatments on fabric. The product testing is of immense importance like fabric Strength, Crease Recovery, Drape, Pilling, Shrinkage determination establishes the quality of a product. It is not possible to export in certain potential countries if the product does not conform to ISO series. The ECOMARK scheme of ISI for environment conscious is also coming. Hence awareness about these topics is necessary and hence included.

The idea is to generate awareness about current issues and to provide sufficient knowledge and skills to the students for conducting simple tests on textile. It is required the topics are to be taught to the extent they are included in the curriculum. Theoretical emphasis for detailed study is to be avoided.

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SIXTH SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
XX

COURSE : TEXTILE TESTING

C O N T E N T S

- Objectives of testing
- Various Methods of Fibre Identification - Physical appearance, Burning Tests, Microscopical Views, Burning Tests and Solubility Tests.
Fibre identification in blends and measurement of blend ratio.
- Humidity & its importance, Absolute and relative humidity, Moisture Regain & content, Standard and Testing atmosphere, Correct Invoice Weight, Effect of regain on fibre properties.
- Various Tests on Yarns - Yarn Count & its determination by Knowles Balance, Quadrant Balance and Beesley balance.
- Yarn diameter, twist, direction of twist and its determination by take-up twist tester. Effect of twist on fabric texture & properties.
- Yarn Strength, Single yarn & leas strength; determination by CRT machine.
- Fabric Testing : Length, Width & Thickness, Fabric weight, Threads per inch, Yarn count from woven fabric, Crimp, Shrinkage.
- Method of measurement of Tensile strength of fabric.
Importance of Tearing & Bursting Strength.

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- Crease Recovery & its determination.
- Fabric Wear & Abrasion; Method of determination.
- Fabric drape, determination of fabric stiffness.
- Importance of Quality control; ISO 9000 series
ECOMARK SCHEME for indian textile industry.

PRACTICALS

- To identify fibres in following blends;
PV; PC; PVC; Terrywool; Acrylic-wool.
- To determine blend ratio in the above blends;
- To determine count of yarn by Quadrant Balance.
- To determine count of yarn by Beesley Balance.
- To determine count of yarn from given fabric sample.
- To measure twist per inch in a given yarn by take-up
twist tester.
- To find out Crimp % in a given sample of yarn.
- To determine Single Double yarn strength by Yarn
Strength Tester.
- To determine lea strength by Lea strength Tester.
- To measure tensile strength of a fabric by Fabric
Strength Tester.
- To determine Crease Recovery Angle of a given fabric
sample.
- To determine Fabric Stiffness by Stiffness Tester.
- To determine Abrasion & Pilling resistance of a fabric
by Pilling Test.

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- Crease Recovery & its determination.
- Fabric Wear & Abrasion; Method of determination.
- Fabric drape, determination of fabric stiffness.
- Importance of Quality control; ISO 9000 series
ECCOMARK SCHEME for indian textile industry.

P R A C T I C A L S

- To identify fibres in following blends;
PV; PC; PVC; Terrywool; Acrylic-wool.
- To determine blend ratio in the above blends;
- To determine count of yarn by Quadrant Balance.
- To determine count of yarn by Beesley Balance.
- To determine count of yarn from given fabric sample.
- To measure twist per inch in a given yarn by take-up
twist tester.
- To find out Crimp % in a given sample of yarn.
- To determine Single Double yarn strength by Yarn
Strength Tester.
- To determine lea strength by Lea strength Tester.
- To measure tensile strength of a fabric by Fabric
Strength Tester.
- To determine Crease Recovery Angle of a given fabric
sample.
- To determine Fabric Stiffness by Stiffness Tester.
- To determine Abrasion & Pilling resistance of a fabric
by Pilling Test.

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- To determine Shrinkage% of a fabric sample.
- To determine Washing fastness of a fabric by Laundrometer.
- To determine light fastness of a fabric by light Fastness Tester.

R E F E R E N C E S

- Principles of Textile Testing - J.E. Booth
- Handbook of Methods of Tests - C.T.R.L., Bombay.
- Textile Testing - Skinkle
- Methods of Tests on Textiles - Indian Standards Institution.

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SIXTH SEMESTER 'DIPLOMA IN TEXTILE DESIGN'

XX

COURSE : MANAGEMENT & ENTREPRENEURSHIP DEVELOPMENT

C O N T E N T S

- Organisation of textile industries in composite and decentralised sector. A brief idea about spread of textile industries in India, scope for textile designer.
- Site selection and plant-layout, objectives of scientific layout, factors influencing layout, types of sheds, factory lighting, wages and insentives.
- Types of management and their functions, principles of marketing management, meaning of marketing, Marketing techniques and skills, market research, product planning, types of market survey, techniques of field survey, data analysis and preparation of market survey report; elements of cost, fixed and variable costs, pricing, break-even analysis, marketing management for small business, scale promotion, credit to customers, channels of distributions.
- Enterpreneurship - definition and related terms, charms of being an entrepreneur, entrepreneurial qualities.
- Roles and function of various support agencies, like district industries centre, M.P. Financial Corporation, banks, employment exchange, S.T.C., MPLUN, Khadi Board, Directorate of Handlooms, State Textile Corp., Handicraft corporation, etc; State and Central Govt. policy towards textiles.

- Communication skill/transactional analysis, hurdles in communications and their removal, importance of transactional analysis, PAC transaction, liasing with different agencies and peoples/clients, study of human behaviours, personality development.
- Steps involved in setting up small scale industry -
 First Stage: Readiness to become entrepreneur, selection of item, market survey, selection of site;
 Second Stage: PPR preparation, Prov. Regn., land/bldg., arrangement, NCC's from departments, assurance from electricity boards, quotations for machinery to ready guarantees, detailed project report, sources of finance, liason with financial institution and sub mission of applications for financial help.
 Third stage : Sanction from financial institution, submission of application for soft loan, to deposit margin money, construction of building for factory, elect. conn. sources of technology and its selections, purchase of machinery, direction, start commercial productions, arrangement for marketing, permanent registration.
- Accounting, Taxation, Book-keeping, etc.

R E F E R E N C E S

1. E.D.I.-I, Vill-Bhat; Via airport Road, Ahemedabad.
2. NIESBUD, NSIC Campus, New Delhi.
3. Marketing Management; Dr. Phillips Kotler,

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SIXTH SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
XX

COURSE : PROJECT

R A T I O N A L E

The purpose of introducing project work in Sixth Semester is to enable the students make their future planning by preparing a sample plan incorporating the knowledge and skills learnt by them during the course of their studies. The students will also be required to visit industrial units and market survey to prepare their project.

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SIXTH SEMESTER 'DIPLOMA IN TEXTILE DESIGN'
XX

COURSE :: P R O J E C T

S E M T E N T S

After acquiring the desired level of knowledge and skills, the students shall be required to submit a project report on problem selected by her own choice and in consultation with subject teacher. The problem shall be based on -

1. Development of woven design with weaving particulars and preparation of a fabric sample on sample loom, handloom or/and computerised sample loom. The design selected should preferably be dobby or jacquard.
2. Development of a multi colour printed design on a textile articles by using block of screen printing. Taking into account the principles of designing.
3. Development of complex designs (minimum 5) with CAD software using different colour and weave effects.
4. Development of complex design on computer by CAD print and transferring it to transparency. Use of transparency in screen making.
5. Preparation of a preliminary project report for establishing a small uscale unit incorporating all features of an enterpris.

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MEMBER OF BOARD OF STUDIES IN
TEXTILE DESIGN

1. Shri R.G. Kansal, - Convenor
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2. Shri D.D. Gupta - Member
I/c. H.O.D. Textile
S.V. Polytechnic, Indore
3. Shri Shashi Vikasit - Member
Lecturer Textile Technology
4. Shri Alok Agrawal - Member
Lecturer Textile Technology
Govt. Polytechnic, Gwalior
5. Shri G.P. Sharma - Member
Lecturer Textile
S.V. Polytechnic, Indore.
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General Manager
Grasim Industries,
Gwalior
7. Shri Sunil Agrawal - Member
Proprietor
Polyplast Industries
37, Ravinagar, Gwalior.
8. Representative from - Member
M.P. State Textile
Corporation Ltd.
9. Representative from - Member
National Textile Corporation,
N.T.C. House,
27, Yashwant Road,
Indore.

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LIST OF PARTICIPANTS
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- 2. Shri V.K. Gupta
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- 3. Shri Gopal Gupta
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Birlanagar, Gwalior
- 4. Shri Sunil Agrawal
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Polyplast Industries
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