

CURRICULUM FOR ONE YEAR  
(TWO SEMESTER)  
P. G. DIPLOMA COURSE IN

=====  
: TEXTILE DESIGN :  
: Effective from Session :  
=====

=====  
UNDER DEVELOPMENT  
=====

=====  
:Semester System :  
=====

Prepared By

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: Curriculum Development Cell :  
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INSTITUTE OF RESEARCH DEVELOPMENT  
& TRAINING, U.P., KANPUR

APPROVED BY

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: BOARD OF TECHNICAL EDUCATION :  
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:CORRECTED AS SYLLABUS COMMITTEE OF:  
: B.T.E. MEETING HELD ON 16.06.2017:  
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Approved and Corrected by BTE on Dated 16.06.2017

STUDY AND EVALUATION SCHEME FOR  
ONE YEAR (TWO SEMESTER) POST GRADUATE DIPLOMA COURSE IN TEXTILE DESIGN  
(Effective from session )

I SEMESTER

Curriculum						S U B J E C T	Scheme of Examination								
Periods Per Week							Theory				Practical			Grand	
Le c.	Tut ori al	Dr aw	Lab	Work Shop	Tot al		Examination Dur.	Sess. Marks	Total Marks	Examination Dur.	Sess. Marks	Total Marks	Tot al		
														Marks	Marks
4	-	-	-	-	4	1.1 Textile Materials	2.5	50	20	70	-	-	-	-	70
4	-	-	-	-	4	1.2 Yarn Manufacturing Process	2.5	50	20	70	-	-	-	-	70
6	-	-	-	-	6	1.3 Fabric Construction & Cloth Analysis	2.5	50	20	70	-	-	-	-	70
6	-	-	-	-	6	1.4 Textile Design-I Practicals	2.5	50	20	70	-	-	-	-	70
-	-	-	8	-	8	1.5 Textile Design-I	--	--	--	--	4	100	50	150	150
-	-	-	10	-	10	1.6 Basic Design & Drawing & Study of Objects	--	--	--	--	4	100	50	150	150
-	-	-	10	-	10	1.7 Fabric Construction & Cloth Analysis	--	--	--	--	4	100	50	150	150
20	-	-	28	-	48	<-----TOTAL----->	--	200	80	280	--	300	150	450	730
													Discipline	25	
													TOTAL	755	

II SEMESTER

4	-	-	-	-	4	2.1 Indian Traditional Textile	2.5	50	20	70	-	-	-	-	70
6	-	-	-	-	6	2.2 Fabric Production	2.5	50	20	70	-	-	-	-	70
6	-	-	-	-	6	2.3 Textile Design-II	2.5	50	20	70	-	-	-	-	70
4	-	-	-	-	4	2.4 Introduction To CAD	2.5	50	20	70	-	-	-	-	70
4	-	-	-	-	4	2.5 Environmental Education* & Disaster Management Practicals	2.5	50	--	--	va	--	--	--	--
-	-	-	12	-	12	2.6 Textile Design-II	--	--	--	--	4	100	50	150	150
-	-	-	8	-	8	2.7 Introduction To CAD	--	--	--	--	3	60	30	90	90
24	-	-	20	-	44	<-----TOTAL----->	--	200	80	280	--	160	80	240	520
													Discipline	25	
													100% Carry Over of I Semester	545	
													TOTAL	755	
													TOTAL	1300	

- NOTE :-
- (1) Each period will be of 50 minutes duration.
  - (2) Each session will be of 16 weeks.
  - (3) Effective teaching will be of atleast 14 weeks.
  - (4) Remaining periods will be utilised for revision etc.
  - (5) (\*) It is compulsory to appear & to pass in examination, But marks will not be included for division and percentage of obtained marks.

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II. MAIN FEATURES OF THE CURRICULUM

TITLE OF THE COURSE		P. G. DIPLOMA IN TEXTILE DESIGN
DURATION OF THE COURSE		ONE YEAR (TWO SEMESTER)
TYPE OF THE COURSE		FULL TIME
PATTERN OF THE COURSE		SEMESTER SYSTEM
INTAKE		60
ENTRY QUALIFICATION		GRADUATE
MODE OF ADMISSION		THROUGH JOINT ENTRANCE EXAMINATION

### III.LIST OF EXPERTS

List of experts who contributed in the development of the curriculum in Semester System for the one year (Two Semester) Diploma Textile Design at I.R.D.T., U.P., Kanpur on 15-04-15 are honourable named below :

1. Shri B. D. Dixit Professor  
I.I.C.T., Bhadohi
2. Shri R. K. Srivastava H.O.D.  
Govt. Girls Poly.,Allahabad
3. Shri D. K. Verma H.O.D.  
Govt. Poly. Varanasi
4. Shri Brajesh Misra Lecturer  
Govt. Poly., Mau
5. Shri Pankaj Yadav Professor  
I. R.D. T., U.P. Kanpur

List of experts who contributed in the development of the curriculum in Review and Revision for the one year (Two Semester) Diploma Textile Design at I.R.D.T., U.P., Kanpur on 22 & 23 August 2016 and 19 & 20 September 2016 are honourable named below :

1. Shri B. D. Dixit Retd. Professor  
U.P.T.T.I., Kanpur
2. Shri R. K. Srivastava H.O.D.  
Govt. Girls Poly.,Allahabad
3. Shri Pankaj Yadav Assistant Director  
D.T.E., U.P. Kanpur
4. Shri R. K. Gupta H.O.D./Principal, Govt. Poly.,Furrakhabad
5. Shri Ramakant Yadav Manager, New Civil Lines, Kanpur
6. Shri Rainvijay Singh Industrilist, Shop No 7-8, Sai Market  
Opposite BDB Green, Lucknow
7. Shri Grish Verma Retd. Assistant Director,NITRA,Kanpur
8. Dr. Alka Ali Professor, U.P.T.T.I., Kanpur
9. Shri Brajesh Mishra Lecturer, Govt. Poly, Mau
10. Shri Pavan Chauraisa Lecturer, Govt. Girls Poly., Allahabad
11. Shri H. K. Shau Lecturer, Govt. Poly., Furrakhabad
12. Shri Himanshu Maurya Lecturer, Govt Girls Poly, Allahabad
13. Shri Rahul Singh Lecturer, Govt. Poly., Kanpur
14. Smt. Anubha Gupta Lecturer, G. P., Kanpur
15. Shri Yogesh Singh Professor, I.R.D.T.U.P., Kanpur

#### IV. NEED ANALYSIS & CURRICULUM PROFILE

The process of education is to impart knowledge and skill to the students of a desired need. The need of this desire changes with the objectives and need of the time. At any level, need of the time is more pressing factor, so the development of curriculum of Textile Design with specification in Printing felt necessary due to the fast changing patterns and fashion in textile printing and designs. The curriculum in Textile Design has been running since long and it become invetable now to develop to meet the present demand of the world of work in terms of the skill of the personnel concerned in Textile Design & Printing. For this reason it was decided to develop a curriculum for the One Year Post Diploma In Textile Design

In developing the curriculum, professional of the relevent fields related to our problem were contacted personally and workshop was organised at this institute in which experts from higher technological institutes, fildl organisation and polytechnics participated and a draft curriculum was developed. The experts appreciated the idea introducing a subject of "Advance Textile Printing" in the existing curricula of Textile Design as an additional subject. The content of the subject is so developed as may befit the world of work and suffice enough to serve the purpose.

It is hope that the curriculum of Diploma in Textile Design with will prove useful in producing the desired type of middle level trained manpower for Textile Design as well as Textile Printing industry.

## V. JOB OPPORTUNITIES

After completing the course, students can venture to enter into the under mentioned fields.

- Medium & Small scale industries
- Garment manufacturing industries
- Garment Sales Emporium
- Department of Education
- Orphanage
- Women Prison
- Deaf & Dumb Schools
- Angan bari
- Film Industry
- Advertising industry
- Modelling
- Fashion Designing
- Article Writing in Ladies Fashion magazines
- Painting on Pottery
- Entrepreneur
- I- Textile Designer
- II- Botic/Stencil/Screen Printing
- III- Interior Decoration Courses
- IV- Drawing & Painting Courses
- V- House hold decorative Textile Articles
- VI- Dying/Bleaching
- VII- Garment Manufacturing
- VIII-Consultancy Services.

I Semester

1.1 TEXTILE MATERIALS

(Common to Three year Diploma course in Textile Design, Textile Design(Printing))

L T P  
2 - -

RATIONAL :

The students of textile design have to deal with the different types of designs over variety of textile fabrics. Before going through the design aspect one must know about the different types of materials used in fabric manufacture. The students are expected to know the varieties of different materials of the textile.

TOPICWISE DISTRIBUTION OF PERIODS

Sl.No.	TOPIC	LECTURE	TUTORIAL
1.	TOPIC-I	8	-
2.	TOPIC-II	8	-
3.	TOPIC-III	8	-
4.	TOPIC-IV	8	-
5.	TOPIC-V	8	-
6.	TOPIC-VI	8	-
7.	TOPIC-VII	8	-
TOTAL		56	-

DETAILED CONTENTS

- I- Introduction to world's sources of textile fibres (natural and manmade) and their utilisation General classification of fibres.
- II- Esessential properties and uses of various varieties of cotton. Introduction to bast fibres; Flex, Jute, Hemp and Rammie.
- III- Introduction to natural silk. Rearing of silk worm. Properties and uses of various types of silk, silk reeling, Throwing and weighting.
- IV- Introduction to wool-merino Mohair, Kashmere, Camel and alpaca. sorting and grading of wool. Introduction to wool fibre and elementary idea of different wool.
- V- Introduction to Manmade fibres such as Nylons, Terelene, Acrylic and Rayons - Viscose, Acetate and Cupramonium.
- VI- Introduction various to blends of the fibres, care of fabrics, spots removing, types of removing agent.



VII. Introduction to specialized fibres and technical textiles. Properties of specialized fibers such as Glass fibre, Cabiler fibre Aramide fibre, etc.

## 1.2 YARN MANUFACTURING PROCESS

(Common to Three year Diploma course in Textile Design. Spl In Printing, Textile Design)

L T P  
4 - -

### TOPICWISE DISTRIBUTION OF PERIODS :

Sl.No.	TOPIC	LECTURE	TUTORIAL
1.	TOPIC-I	10	-
2.	TOPIC-II	10	-
3.	TOPIC-III	12	-
4.	TOPIC-IV	12	-
5.	TOPIC-V	12	-
T O T A L		56	-

### DETAILED CONTENTS

- I. Flow chart of the processes involved in the Conversion of fibres into Yarn and objective of different processes.
- II. Brief study and working principles of blow room and carding.
- III. Brief description and working of draw frame, combing and speed frame
- IV. Brief description and working of ring frame, dubling frame and reeling.
- V. Types of yarn and their uses along with brief idea of manufacturing, Numbering system and characteristics such as strength, twist and evenness of yarn. (No numerical question should be asked in the examination).

### 1.3 FABRIC CONSTRUCTION & CLOTH ANALYSIS

(Common to Three year Diploma course in Textile Design. Spl In Printing, Textile Design)

L T P  
6 - -

#### RATIONALE :

The importance of the paper lies in the fact that it introduces the reader with different varieties of the fabric and designs and related technical terminology. Knowledge of these things very base of textile designer's working.

#### TOPICWISE DISTRIBUTION OF PERIODS :

Sl.No.	TOPIC	LECTURE	TUTORIAL
1.	TOPIC-I	6	-
2.	TOPIC-II	8	-
3.	TOPIC-III	10	-
4.	TOPIC-IV	10	-
5.	TOPIC-V	12	-
6.	TOPIC-VI	8	-
7.	TOPIC-VII	10	-
8.	TOPIC-VIII	10	-
9.	TOPIC-IX	10	-
T O T A L		84	-

#### DETAILED CONTENTS :

- I. Classification of woven fabrics.
- II. Introduction to technical terms used in cloth construction. Warp, weft, ends, picks, weave, design, repeat of design draft, pegplan and denting plan
- III. Methods of ornamenting a fabric.
- IV. Plain weave and its derivatives ie, warp rib, weft rib, and matt or hopsack or basket.
- V. Regular twill weaves and their derivatives such Pointed, Herring bone, Zigzag-wavy, Curved, Broken, Re-arranged, Fancy twill, Combined twill and Diamonds.
- VI. Satin and sateen weaves, cork screw twills etc.
- VII. Towelling weaves-Huckaback, honeycomb and brighten honeycomb.
- VIII. Plain faced, Twill faced & wadded bed-ford cords.
- IX. Crepe Weaves.

#### 1.4 TEXTILE DESIGN-I

(Common to Three year Diploma course in Textile Design. Spl In Printing, Textile Design)

L T P  
6 - -

#### RATIONAL :

This paper deals with generating self designs in the fabrics. Use of free hand sketching and their enlargement and fabric finishing activities.

#### TOPICWISE DISTRIBUTION OF PERIODS

Sl.No.	TOPIC	LECTURE	TUTORIAL
1.	TOPIC-I	10	-
2.	TOPIC-II	12	-
3.	TOPIC-III	15	-
4.	TOPIC-IV	10	-
5.	TOPIC-V	10	-
6.	TOPIC-VI	10	-
7.	TOPIC-VII	9	-
8.	TOPIC-VIII	8	-
T O T A L		84	-

#### DETAILED CONTENTS :

1. Free hand sketching, enlargement and reduction of designs.
2. Composition of Bi-symmetrical and Multi-symmetrical figures suitable for corner and centre placement.
3. Development of stripe and check pattern -
  - i. Simple - Regular and Irregular pattern.
  - ii. Counter change pattern.
  - iii. Graduated pattern.
  - iv. Modified form.
4. Development of design - suitable for dobby
5. Development of design suitable for Jacquards.
6. Development of decorative geometrical designs.
7. Development of all over design of different form - Natural, Abstract, Geometrical and traditional modified.
8. Introduction to Electronic Jacquard.

1.5 TEXTILE DESIGN-I

(Common to Three year Diploma course in Textile Design. Spl In Printing)

L T P  
- - 8

RATIONAL :

This paper deals with generating self designs in the fabrics. Use of free hand sketching and their enlargement and fabric finishing activities.

Preparation of 12 drawing sheets on the basis of theory syllabus to be ornamented by different colours and system.

RATIONAL :

Basic design aims at bringing about various attributes to the viewer sensitive to environment. The students should be assigned appropriate learning exercises so as to enable them to discover the principles and elements of design. Emphasis should be laid on exercises pertaining to the study of nature and environment. Student should be exposed to nature and environment through performing arts, rural environment, natural scenery, landscapes etc. The emphasis should be on creativity rather than sticking to rules or preconceived notions.

By the study of this subject the students will be skilled in free hand sketching of the various types of objects generally used in the textile designs. They will also be acquainted in using colours including poster colours in the variety of objects. They will be trained in taking photographs and finding the motive from them.

BASIC DESIGN :

1. INTRODUCTION TO ALL MEDIAS OF EXPRESSION, TOOLS AND ART MATERIALS

Pencils.  
Types of colour.  
Paper and other materials.  
Equipment for creating textures.  
T-Squares, set-squares, drawing board.  
Compass and liner.  
Use of Epidiascope and Photocopier for enlargement and reduction of forms and figures.

2. OBSERVATION AND RECALL AS AIDS TO EXPRESSION :

Observing and recapitulating a given object or situation using any mode of expression.

3. IMPORTANCE OF ELEMENTS OF BASIC DESIGN :

Dots, Lines and shapes, Tint, Shade and Tones.  
colour and texture.

4. PRINCIPLES OF BASIC DESIGN |

Relationship of negative and positive space, Balance.  
Proportion, scale, harmony, contrast, variety unity,  
Rhythm.

5. CONCEPT OF ILLUSTION IN ART EXPRESSION |

Three dimensional effect.  
Optical Illusion.

6. SKETCHING :

All the following to be done in different mediums i.e.  
pencil/ ink/felt pen/crayon

- A. Sketches of flowers and twigs.
- B. Sketches of vegetables and fruits.
- C. Sketches of trees and foliage.

Study of the following in pencil with light and shade.

- 7. Wooden Blocks.
- 8. Bottles, Earthen pots
- 9. Plates.
- 10. Bowl.

## 1.7 FABRIC CONSTRUCTION & CLOTH ANALYSIS

(Common to Three year Diploma course in Textile Design. Spl In Printing, Textile Design)

L T P  
- - 6

### RATIONALE :

The importance of the paper lies in the fact that it introduces the reader with different varieties of the fabric and designs and technical terminology knowledge of these things vary base of textile designer's working.

Analysis of fabrics Covered in the course for their manufacturing particulars. Construction particulars such as identification of warp and weft, direction, face and back of the fabric ends per inch, warp and weft, warp and weft twist direction and ply. Warp crimp percentage and weft crimp percentage, weave weight per square yard and meter of common use fabrics.



II Semester

2.1 INDIAN TRADITIONAL TEXTILE

(Common to Three year Diploma course in Textile Design. Spl In Printing, Textile Design)

L T P  
4 - -

RATIONALE :

The developmental history of textiles proves many times more enlightening to deal and solve even the present day problems. So its importance can not be ignored.

TOPICWISE DISTRIBUTION OF PERIODS :

Sl.No.	TOPIC	LECTURE	TUTORIAL
1.	Topic 1	12	-
2.	Topic 2	12	-
3.	Topic 3	20	-
4.	Topic 4	12	-
T O T A L		56	-

DETAILED CONTENTS

1. INTRODUCTION TO INDIAN WOVEN TEXTILE :

Historical significance, Construction techniques, Styles, Colours and Motifs, Centers of production.

2. DYEING AND PRINTING IN INDIA :

Historical significance, Construction techniques, Styles, Colours and Motifs, Centers of production.

3. The following topics should be covered in History of textile.

1. Phulkari
2. Kashmir embroidery
3. Chickankari
4. Bengal Kantha
5. Sanganari
6. Kalamkari
7. Patola
8. Bandhani
9. Ikat
10. Kullu Shawls
11. Brocades
12. Jamdani

13. Chanderi
14. Dharmavaram
15. Kanchipuram
16. Baluchar
17. Tanchoi
18. Madhubani

4. INTRODUCTION TO INDIAN CRAFT :

A brief introduction to the following craft with special reference to their location tools and materials used, and their special features.

Wood Work(Block Printing), Mirror Work (Embroidered), Fabric Painting (Printed and Painted textiles of India), Metal work (Pottery (Ceramics), Ivory and stone work, Carpet and Floor covering.

## 2.2 FABRIC PRODUCTION

(Common to Three year Diploma course in Textile Design. Spl In Printing, Textile Design)

L T P  
6 - -

### RATIONALE :

From the title of the paper, it is evident that the knowledge of manufacturing process is matter of imparitive importance to textile designer. So is the importance of the paper.

### TOPICWISE DISTRIBUTION OF PERIODS

Sl.No.	TOPIC	LECTURE	TUTORIAL
1.	TOPIC-I	17	-
2.	TOPIC-II	17	-
3.	TOPIC-III	17	-
4.	TOPIC-IV	17	-
5.	TOPIC-V	16	-
T O T A L		84	-

### DETAILED CONTENTS

- I. Flow chart of the process involved in the conversion of yarns into fabrics and objective of different processes.
- II. Brief study and working principles of cheese winding, warp winding, weft winding, weft winding, warping and sizing.
- III. Classification of various size of weaving machine. Study of handloom, power loom and elementary knowledge of automatic looms.
- IV. Brief study of drop box, doobby and jacquard.
- V. Introduction to knitted fabrics and various types of knitting machines ( Warp knit and Weft knit machines only)
- VI. Introduction of air-jet repier and projectile loom.

2.3 TEXTILE DESIGN - II

(Common to Three year Diploma course in Textile Design. Spl In Printing, Textile Design)

L T P  
6 - -

RATIONAL :

RATIONAL :

This paper mostly deals with decorative designs, development & printing and their transfer to fabrics.

TOPICWISE DISTRIBUTION OF PERIODS

Sl.No.	TOPIC	LECTURE	TUTORIAL
1.	TOPIC-I	9	-
2.	TOPIC-II	12	-
3.	TOPIC-III	12	-
4.	TOPIC-IV	12	-
5.	TOPIC-V	12	-
6.	TOPIC-VI	9	-
7.	TOPIC-VII	6	-
8.	TOPIC-VIII	4	-
9.	TOPIC-IX	8	-
T O T A L		84	-

DETAILED CONTENTS

1. Development of pattern by colour and weave effect.
2. Construction of motif suitable for printing and weaving.
3. Preparation of motif, figures and their arrangement. Graph designs suitable for Dobbies and jacquards.
4. Elements and principles of preparing decorative designs for woven and printed fabrics for various uses. Basis of textile design like diamond ogee, curved line half drop, reverse etc. Ways of modifying colours in textiles.
5. Transferring of design of shirting sarees, brocades etc to the point paper. Ways of arrangement of figures or motifs.
6. Transferring of design on graphic (Point), Paper, edging and insertion of weaves in figured protion and on ground.
7. Brief idea of special and complex fabries e.g. Double cloth, Brocades, Tapesteries adn Damarks.
8. Brief idea of Turkish Towelling fabric and their ornamentation.
9. Types of design functional items designed for a specific

purpose that may include examples from the following focus areas.  
Apparel, Furnishing textile arts aesthetic surface decoration.

2.4 INTRODUCTION TO CAD

L T P  
4 - -

Rationale:

Computers are being used for design and information processing in all branches of engineering. An exposure to fundamentals of computer programming is very essential for all diploma holders. This subject has been included to introduce students in the use and application of computers in engineering.

TOPIC WISE DISTRIBUTION OF PERIODS

Sl.No.	Units	Coverage Time		
		L	T	P
1.	Introduction to Computer	5	-	-
2.	DOS/Windows	6	-	-
3.	Introduction To MS Office	15	-	-
4.	Ms-Word	12	-	-
5.	Computer Aided Woven Design	12	-	-
6.	Computer In Garment Industry	6	-	-
		56	-	-

DETAILED CONTENTS

1. Introduction to Computer:

Block Diagram of Computer, Types Of Computer Central Processing unit (Control unit, A.L.U.) & memory Unit. Types of Input and Output devices and memories. Visual Display Unit, Keyboard, Floppy disk drive, Hard disk drive, CD-ROM Drive, Magnetic & Number system( Conversion) Binary, Octal, Hexa decimal number system, Bit, Byte and Word.

2. DOS/WINDOWS:

Internal & External Commands of DOS, Features Of Windows.

3. INTRODUCTION TO MS OFFICE :

MS POWERPOINT, MS PROJECT

4. MS WORD PROCESSING:

File : Open, Close, Save and Find File, Print and Page Setup

Edit : Cut, Copy, Find, Replace

Insert: Page Insert, Page No., Symbols

Font : Paragraph, Tabs, Border & Shading, Change Case

Tools : Spelling, Mail Merge

Table : Insert Table, Delete Cells, Merge Cell, Sort Text

5. COMPUTER AIDED WOVEN DESIGN :

Introduction to software for textile woven design with windows platform, Study of software for Dobby/Jacquard

- Design.
6. COMPUTER IN GARMENT INDUSTRY:  
Software for pattern making, grading and sorting.

2.5 ENVIRONMENTAL EDUCATION & DISASTER MANAGEMENT

L T P  
4 - -

RATIONALE:

A diploma student must have the knowledge of different types of pollution caused due to industrialisation and construction activities, so as he may help in balancing of eco-system and control pollution by providing controlling measures. They should be also aware of the environmental laws for effectively controlling the pollution of environment. The topics are to be taught in light of legislation Para-3.

TOPIC WISE DISTRIBUTION OF PERIODS:

SL. NO.	TOPIC	L	T	P
1.	Introduction	6		
2.	Pollution	4		
2.1	Water Pollution	8		
2.2	Air Pollution	8		
2.3	Noise Pollution	4		
2.4	Radio Active Pollution	6		
2.5	Solid Waste Management	6		
3.	Legislations	4		
4.	Environmental Impact Assessment	4		
5.	Disaster Management	6		
TOTAL		56	-	-

DETAILED CONTENTS

1. INTRODUCTION :
  - Basics of ecology, Ecosystem, Biodiversity Human activities and its effect on ecology and eco system, different development i.e. irrigation, urbanization, road development and other engineering activities and their effects on ecology and eco system, Mining and deforestation and their effects.
  - Lowering of water level , Urbanization.
  - Biodegradation and Biodegradability, composting, bio remediation, Microbes .Use of biopesticides and biofungicides.

- Global warning concerns, Ozone layer depletion, Green house effect, Acid rain, etc.
2. POLLUTION :
- Sources of pollution, natural and man made, their effects on living environments and related legislation.
- 2.1 WATER POLLUTION :
- Factors contributing water pollution and their effect.
  - Domestic waste water and industrial waste water. Heavy metals, microbes and leaching metal.
  - Physical, Chemical and Biological Characteristics of waste water.
  - Indian Standards for quality of drinking water.
  - Indian Standards for quality of treated waste water.
  - Treatment methods of effluent (domestic waste water and industrial/ mining waste water), its reuse/safe disposal.
- 2.2 AIR POLLUTION :
- Definition of Air pollution, types of air pollutants i.e. SPM, NOX, SOX, CO, CO<sub>2</sub>, NH<sub>3</sub>, F, CL, causes and its effects on the environment.
- Monitoring and control of air pollutants, Control measures techniques. Introductory Idea of control equipment in industries i.e.
    - A. Settling chambers
    - B. Cyclones
    - C. Scrubbers (Dry and Wet)
    - D. Multi Clones
    - E. Electro Static Precipitations
    - F. Bog Fillers.
  - Ambient air quality measurement and their standards.
  - Process and domestic emission control
  - Vehicular Pollution and Its control with special emphasis of Euro-I, Euro-II, Euro-III and Euro IV.
- 2.3 NOISE POLLUTION :
- Sources of noise pollution, its effect and control.
- 2.4 RADISACTIVE POLLUTION :
- Sources and its effect on human, animal, plant and material, means to control and preventive measures.
- 2.5 SOLID WASTE MANAGEMENT :
- Municipal solid waste, Biomedical waste, Industrial and



Hazardous waste, Plastic waste and its management.

3. LEGISLATION :

Preliminary knowledge of the following Acts and rules made thereunder-

- The Water (Prevention and Control of Pollution) Act - 1974.
- The Air (Prevention and Control of Pollution) Act - 1981.
- The Environmental Protection (Prevention and Control of Pollution) Act -1986. Rules notified under EP Act - 1986 Viz.
  - # The Manufacture, Storage and Import of Hazardous Chemical (Amendment) Rules, 2000
  - # The Hazardous Wastes (Management and Handling ) Amendment Rules, 2003.
  - # Bio-Medical Waste (Management and Handling) (Amendment) Rules, 2003.
  - # The Noise Pollution (Regulation and Control) (Amendment) Rules, 2002.
  - # Municipal Solid Wastes (Management and Handling) Rules, 2000.
  - # The Recycled Plastics Manufacture and Usage (Amendment) rules, 2003.

4. ENVIRONMENTAL IMPACT ASSESSMENT (EIA) :

- Basic concepts, objective and methodology of EIA.
- Objectives and requirement of Environmental Management System (ISO-14000) (An Introduction).

5. DISASTER MANAGEMENT :

Definition of disaster - Natural and Manmade, Type of disaster management, How disaster forms, Destructive power, Causes and Hazards, Case study of Tsunami Disaster, National policy- Its objective and main features, National Environment Policy, Need for central intervention, State Disaster Authority- Duties and powers, Case studies of various Disaster in the country, Meaning and benefit of vulnerability reduction, Factor promoting vulnerability reduction and mitigation, Emergency support function plan.

Main feature and function of National Disaster Management Frame Work, Disaster mitigation and prevention, Legal Policy Frame Work, Early warning system, Human Resource Development and Function, Information dissemination and communication.

2.6 TEXTILE DESIGN - II

(Common to Three year Diploma course in Textile Design. Spl In  
Printing, Textile Design)

L T P  
- - 12

RATIONAL :

This paper mostly deals with decorative designs, development  
& printing and their transfer to fabrics.

Transfer of paper design on print paper and to produce a cloth on  
the loom using the same. Market surveying and production of  
fabrics using original designs. Preparation of sheet on the basis  
of theory Syllabus.

## 2.7 APPLICATION OF CAD (PRACTICALS)

L T P  
- - 8

1. Document preparation using MS Word.
2. Presentation technique by using MS Power Point.
3. Get into the window. Draw a picture in accessories. Paint and copy that picture to another place through window explorer.
1. Creating, Editing, Modifying database file, Label, Report, Format & Query.
2. Use All commands of DOS.
3. Use all the features and utilities of MS Word.
4. Selection of command using Windows.
5. Practices on E-Mail & Websites.

IX.

STAFF STRUCTURE

INTAKE Pattern		10 Annual
S.No.	Name of Post	No.
1.	Principal	1
2.	HOD	1
3.	Lecturer(*)	3
4.	Lecturer in Communication Tech.	1 (Part-time)
5.	Instructor	2
6.	Computer Programmer	1
7.	Steno Typist	1
8.	Accountant/Cashier	1
9.	Student/Library Clerk	1
10.	Store Keeper	1
11.	Class IV	6
12.	Sweeper	Part time as per requirement
13.	Chaukidar & Mali	As per need with justification

NOTE :

1. The number of staff required for individual institution shall be worked out in accordance with the norms laid down in G.O.No. 2281/Pra. Shi. -3-1989-60 (B)/85 dated June 27, 1989.
2. Services of the staff of other disciplines of the Institute may be utilised.
3. The post of "Computer Programmer" is not needed in the institutions where diploma in "Electronics Engineering" is running.
4. QUALIFICATIONS OF STAFF : As per Service Rules.

\*: Lecturer - One - First Class B. Tech. (Textile Technology)  
Lecturer - One - First Class B. Tech. (Textile Chemistry)



X. SPACE REQUIREMENTS

[A] ADMINISTRATIVE BLOCK

S.NO.	Details of Space	Floor Area Sq.m.	Remark
1.	Principal's Room	30	
2.	Confidential Room	10	
3.	Steno's Room	6	
4. (a)	Office Including Drawing Office	80	
(b)	Record Room	20	
5.	Staff Room	20	
	(a) Head 1	15	
	(b) Lecturer 10 Sq.m./Lect. for 3 Lecturers	30	
6.	Library and Reading room	150	
7.	Store	100	
8.	Students Common room	80	
9.	Model Room	90	

[B] Academic Block

S.NO.	Details of Space	No.	@ Sq.m.	Floor Area Sq.m.
1.	Class Room	2	60	120
2.	Drawing Hall	1	90	90
3.	Design Theater	1	100	100
4.	Textile Testing Lab.	1	40	40
5.	Textile Designing (Fabric Design & Printing Design.)	1	150	150
6.	Computer Lab. (Air Cond. Glass Partition and Special type pvc flooring and false ceiling).	1	60	60

[C] Student's Amenities

1.	Hostel	40 %	of Strength of St.
2.	Cycle Stand	50 %	of Strength of St.
3.	Canteen and Tuck shop	50	
4.	N.C.C. Room	70	
5.	Dispensary	40	
6.	Guest Room (Attached Bath) including kitchen & store	45	

[E] STAFF RESIDENCES

1.	Principal	1	100	100
2.	Head of Department	1	100	100
3.	Lecturer	3	80	240
4.	Non-teaching & Supporting Staff	8	60	480
5.	Class IV	6	30	180

Priority to be given in following order.

- (1)
  - a. Administrative Building
  - b. Labs.
  - c. Over head Tank
  - d. Boundary Wall
  - e. Principal Residence
  - f. Fourth Class Quarters (2/3)

- (2)
  - a. Hostel.
  - b. Students Amenities
3. Residences of employee.

XI. LIST OF EQUIPMENT FOR DIPLOMA IN  
TEXTILE DESIGN

1. Only those of the equipments given below which are essentially required for performing the practicals mentioned in the curriculum and are not available in the institute are to be procured by the institutions.
2. "Machines/Equipments/Instruments of the old BTE list which are not included below are to be retained in the Lab. for demonstration purpose but not to be demanded a fresh for purchase."

S.NO.	NAME OF EQUIPMENT	QTY. REQUIRED	APPROX.COST (Rs.) RATE
1.	Handloom 36" Reed space with two boxes on either side	1 No.	25,000=00
2.	Handloom with dossy 36" Reed space	1 No.	55,000=00
3.	Handloom with Jacquard (1005 Side) Reed space	1 No.	60,000=00
4.	Pirn winding machines with electric Motor and empty pirns & bobbins	1 No.	60,000=00
5.	Hand Driven Charkha	1 No.	5,000=00
6.	Sectional warping (ordinary) Machine with creel	1 No.	45,000=00
7.	Cone Winding Machine	1 No.	50,000=00
8.	Piano Card cutting Machine for Card Punching	1 No.	30,000=00
9.	Power loom 36" reed space with 8 jacks doobby	1 No.	75,000=00
10.	Model of mini carding plant	1 No.	3,00,000=00
11.	Model of mini spinning plant	1 No.	2,00,000=00
12.	Standard Vertical Lea Tester (Yarn strength tester)	1 No.	40,000=00
13.	Microscope	4 Nos.	10,000=00
14.	Physical Balance	4 Nos.	1,500=00
15.	Reeling Machine	1 No.	30,000=00
16.	Speedy Moisture testing Machine	1 No.	10,000=00
17.	Pick Counting Glass	4 Nos.	75=00
18.	Knowels Yarn Balance	4 Nos.	12,000=00
19.	Beesely Yarn balance	4 Nos.	3,000=00



20.	Dry & wet bulb Hydrometer	1 No.	1,000=00
21.	Cloth Strength testing Machine	1 No.	50,000=00
22.	Shirley Air permeability tester (Shirley crease recovery tester)	1 No.	50,000=00
23.	Shirley Stiff tester	1 No.	50,000=00
24.	Yarn Assonting Balance	1 No.	50,000=00
25.	Black Board (Graph)	1 No.	500=00
26.	WATER BATH : (Electrically heated/Stoves Vessel)	15 Nos.	250=00
27.	Dye post porceline ; Stainless steel	60 Nos.	50=00
28.	Glass rods per	L.S.	100=00
Kg.			
29.	MEASURING CYLINDER		
	(a) 5 C.C.	30 Nos.	N.A.
	(b) 100 C.C.	30 Nos.	25=00
	(c) 500 C.C.	5 Nos.	100=00
30.	Winchester Bottle (5 litres)	5 Nos.	150=00
31.	THERMOMETERS		
	(a) 0-100 C	2 Nos.	150=00
	(b) 100-200 C	2 Nos.	200=00
32.	Weighing Balance (physical)	1 No.	1000=00
33.	Open Balance	1 No.	300=00
34.	Buckets	5 Nos.	70=00
35.	Mugs	10 No.	8=00
36.	Cement Plateform with three sinks fitted in centre 20'X 5'X 2'	1 No.	5,000=00
37.	Printing Table (5' X 20')	1 No.	5,000=00
38.	Exposing Table	1 No.	10,000=00
39.	Screens of Various sizes	10 Sets	single 200=00 Double 300=00 Triple 400=00
40.	Electrically heated steam ager	1 No.	50,000=00
41.	Transfer Printing machine flat bat	1 No.	2,50,000=00
42.	Sample cutting machine	1 No.	10,000=00
43.	No. of blocks of various Design	10 Sets	Single 75=00 Double 120=00 Triple 175=00

Four colour 225=00

44.	Bhigona Large Size (Stainless Steel)	2 No.	250=00
45.	Dyes and Chemicals	L.S.	25,000=00
46.	Electric Iron Large (100 watt)	2 Nos.	250=00
47.	MODELS OF :		
	(a) Jigger	1 No.	75,000=00
	(b) Pudding Mangle	1 No.	75,000=00
	(c) Winch	1 No.	10,000=00
48.	Miscellaneous item required for craft practice and Drawing and Rendering Lab	L.S.	50,000=00
	DESIGN STUDIO		
49.	Epidiascope	1 No.	10,000=00
50.	Photocopier with enlargement and reduction facility	1 No.	1,25,000=00

INTRODUCTION TO CAD  
COMPUTER CENTRE

S.No.	DESCRIPTION	QTY.	APPROX. COST (in Rs.)
1.	Core-2 Quad Processor, 4GB RAM 1 GB SATA HDD, 19" TFT Mointor OS-Windows 2007/2008/Latest Version	02 Server	1,20,000=00
2.	General Desktop Computer-Intel i5 60 node or Higher, 2GB RAM, 320 GB SATA HDD, 17" TFT/LCD/LED Monitor, DVD Wirter Multi Media Kit with Key Board- Multimedia, Mouse- Optical Scrool or Latest, 32 Bit PCI ETHERNET CARD (10/100) Mbps, Internet Modem, Pen Drive 16 GB, Pre loaded latest Anti Virus with Life time Subscription, Licence Media and Manual with UPS 660 VA  OR  Computer of latest Specification		36,00,000=00
3.	Software :		
	i. MS OFFICE 2010		LS LS
	ii. COMPILER 0 'C', C++, JAVA-7		LS LS
	iii. Personal Web Server, HTML, IIS		LS LS
4.	Hardware		4,50,000.00 LS
	i. Switch-32 Port	02	
	ii. Router	02	
	iii. Hub	04(8 Port)	
	iv. Ext. Modem	02	
	v. Wireless N/W Adaptor	02	
	vi. Series Access Point	02	
	vii. LAN Cable Meter	05	
	viii. LAN Cable Analyzer	05	
	ix. Crimping Tool and all other accessories related to Networking	15	
5.	Scanner- Flat Bed A4/Auto Lighter (Bit depth 48)	02	20,000
6.	132 Column 600 CPS or faster 9 Pin dot matrix printer with 500 million character head life	02	50,000
7.	Laser Jet-A4 All In one 20 page per min (2 Each)	04	50,000
8.	Desk Jet-A4 Photo Smart (2 Each)	04	40,000
9.	5 KVA on line UPS with minimum 30 minute battery backup along with sealed maintenance free	04	8,00000

batteries. Provision for connecting external batteries with network connectivity.(For 2 Labs)

10.	Split Air Conditioner 1.5 tones capctity with ISI mark alongwith electronic voltage stablizer with over viltage and time delay circuit	08	35,0000
11.	Room preparation and furniture	LS	
12.	19" rack, 24-port switch. connector RJ-45 Cat-6 cabling for network	LS	10,0000
13.	2 KVA Inverter Cum UPS	02	6,0000
14.	Fire Extinguisher (2 Kg.)	04	15000
15.	Fire Extinguisher (5 Kg.)	04	25000
16.	Vaccum Cleaner	02	25000
17.	LCD Projector 3000 Lument with all accessories	02	350000
18.	Pen Drive 16 GB	10	10000
19.	DVD Writer External	02	10000
20.	HDD External 500 GB	02	15000
21.	PAD (Latest Configuration)	02	15000
22.	Boardband For Internet(Speed Min. 8mbps)	04	LS
23.	USB Modemeaner	02	8000
24.	Generator 15 KVA Water Coolent	01	450000

7.	LEARNING RESOURCE MATERIALS			
1.	LCD Projector with Screen	1	--	20000
2.	Handicam	1	--	30000
3.	Cutting, Binding & Stitching equipment.	1	--	30000
4.	Desk Top Computer with Internet Core i5/i7- 760, Processor, Genuine Windiw 7, Professional 18 inch HD, Flat Panel Monitor Optical Mouse, Key Board & all related media or latest version	1	--	40000
5.	Home Theater Support Disc type CD. CDR/CDRW DVDR/DVDRW, VCD Supported with USB Port Support-DIVX/JPEG/MP3	1	--	25000
6.	Commerical P A System 16 W-220W output, AC & 24V DC Operated, 5 Mic. & 2 Auxilary input, Speaker output 4 Ohm, 8 Ohm, 17 V & 100 V	1	--	20000
7.	Interactive Board	1	--	50000

ote :

1. This center will be only one at the institute level irrespective of all branches.

INSTITUTE OF RESEARCH, DEVELOPMENT AND TRAINING U.P. KANPUR-208024

SUBJECT : Questionnaire for ascertaining the job potential and activities of diploma holder in P. G. Diploma In Textile Design.

1. Please answer the questions to the points given in the questionnaire.

2. Any other point or suggestion not covered in this questionnaire may be written on a separate paper and enclosed with the questionnaire.

1. Name of the organisation : \_\_\_\_\_  
\_\_\_\_\_
2. Name & Designation of the officer filling the questionnaire. \_\_\_\_\_  
\_\_\_\_\_
3. Name of the department/section/shop. \_\_\_\_\_  
\_\_\_\_\_
4. Important functions of the department/section/shop. \_\_\_\_\_  
\_\_\_\_\_
5. Number of diploma holder employees under your charge in the area of P. G. Diploma In Textile Design \_\_\_\_\_
6. Please give names of modern equipments/machines handled by a diploma holder in P. G. Diploma In Textile Design.
  1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_
  4. \_\_\_\_\_ 5. \_\_\_\_\_ 6. \_\_\_\_\_
7. What proficiencies are expected from a diploma holder in P. G. Diploma In Textile Design.
  1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_
  4. \_\_\_\_\_ 5. \_\_\_\_\_ 6. \_\_\_\_\_
8. Mention the approximate percentage of the following desired in Diploma teaching.
  1. Theoretical knowledge -----%
  2. Practical knowledge -----%
  3. Skill Development -----%
9. Do you think " on the job training " / Industrial training should form a part of curriculum. (Yes/No)

if yes then

- (a) Duration of training -----  
(b) Mode of training 1. Spread over different semesters  
2. After completion of course  
3. Any other mode

10. What mode of recruitment is followed by your organisation.
1. Academic merit
  2. Written test
  3. Group discussion
  4. Interview
  5. On the job test.
11. Mention the capabilities/ Qualities looked for while recruiting diploma holder in P. G. Diploma In Textile Design
- (a) Technical knowledge -----  
(b) Practical skill -----  
(c) Etiqueties and behaviour -----  
(d) Aptitude -----  
(e) Health habit and social background -----  
(f) Institution where trained -----
12. Does your organisation have any system for the survey of P. G. Diploma In Textile Design measures of different countries/States. Yes/No
13. Does your organisation conduct field survey to know users views regarding. Yes/No
1. Textile Design measures.
  2. Effect of climatic conditions.
  3. Any other
- If yes ; Please give brief account of each.
14. Which type of assignment do you suggest for an entrepreneur in P. G. Diploma In Textile Design.
15. In which types of organisations can a diploma holder in P. G. Diploma In Textile Design can work or serve.
1. 2. 3.
  4. 5. 6.
16. Job prospects for the diploma holder in Textile Design with specialisation in Printing in the next ten years in the state / country.
17. In your opinion what should be the subjects to be taught to a diploma student in P. G. Diploma In Textile Design.

Theory

Practical

18. Kindly mention particulars regarding topics/areas which should be given more emphasis in the curriculum.

Theory

Practical

19. Kindly state whether your organisation can contribute towards improvement of curriculum in above field. Yes/No  
If yes : Please give names of experts in your organisation to whom contact.
20. Kindly give your valuable suggestions for being considered at the time of finalisation of curriculum.
21. What changes in technologies are to be incorporated in the development of curriculum in P. G. Diploma In Textile Design.

(Signature)

Kindly mail the above questionnaire duly filled to :-

Mr. Yogesh Singh  
Professor  
Institute of Research, Development & Training, U.P.  
Govt. Polytechnic Campus  
Kanpur - 208024

(Please note that all information in this survey is confidential for the use of curriculum design only).