


**MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION, MUMBAI**
**TEACHING AND EXAMINATION SCHEME**
**COURSE NAME : DIP IN FASHION & CLOTHING TECHNOLOGY**
**COURSE CODE : DC**
**DURATION OF COURSE : SIX SEMESTERS**
**WITH EFFECT FROM**
**SEMESTER : THIRD**
**DURATION : 16 WEEKS**
**PATTERN : FULL TIME - SEMESTER**
**SCHEME : G**

SR. NO.	SUBJECT TITLE	Abbreviation	SUB CODE	TEACHING SCHEME			EXAMINATION SCHEME									SW (17300)
				TH	TU	PR	PAPER HRS.	TH (1)		PR (4)		OR (8)		TW (9)		
								Max	Min	Max	Min	Max	Min	Max	Min	
1	Textile Testing	TTE	17334	03	--	02	03	100	40	--	--	--	--	25@	10	<b>50</b>
2	Pattern Making - II	PMA	17335	02	--	04	03	100	40	50#	20	--	--	25@	10	
3	Fabric Structure	FST	17336	03	--	02	03	100	40	50#	20	--	--	25@	10	
4	Clothing Construction	CCO	17337	04	--	04	03	100	40	50#	20	--	--	25@	10	
5	Textile Design	TDE	17338	02	--	02	03	100	40	--	--	--	--	25@	10	
6	Professional Practices-I	PPT	17029	--	--	03	--	--	--	--	--	--	--	50@	20	
7	Basics to Embroidery	BTE	17032	--	--	02	--	--	--	--	--	--	--	25@	10	
<b>TOTAL</b>				<b>14</b>	<b>--</b>	<b>19</b>	<b>--</b>	<b>500</b>	<b>--</b>	<b>150</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>200</b>	<b>--</b>	<b>50</b>

 Student Contact Hours Per Week: **33 Hrs.**
**THEORY AND PRACTICAL PERIODS OF 60 MINUTES EACH.**

 Total Marks : **900**

 @ Internal Assessment, # External Assessment, #\* Online Examination,   No Theory Examination.

Abbreviations: TH-Theory, TU- Tutorial, PR-Practical, OR-Oral, TW- Termwork, SW- Sessional Work.

- Conduct two class tests each of 25 marks for each theory subject. Sum of the total test marks of all subject are to be converted out of 100 marks as sessional work (SW).
- Progressive evaluation is to be done by subject teacher as per the prevailing curriculum implementation and assessment norms.
- Code number for TH, PR, OR and TW are to be given as suffix 1, 4, 8, 9 respectively to the subject code.

**Course Name : Diploma in Fashion & Clothing Technology**

**Course Code : DC**

**Semester : Third**

**Subject Title : Textile Testing**

**Subject Code : 17334**

**Teaching & Examination Scheme:**

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS	TH	PR	OR	TW	TOTAL
03	--	02	03	100	--	--	25@	125

**NOTE:**

- **Two tests each of 25 marks to be conducted as per the schedule given by MSBTE.**
- **Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work (SW).**

**Rationale:**

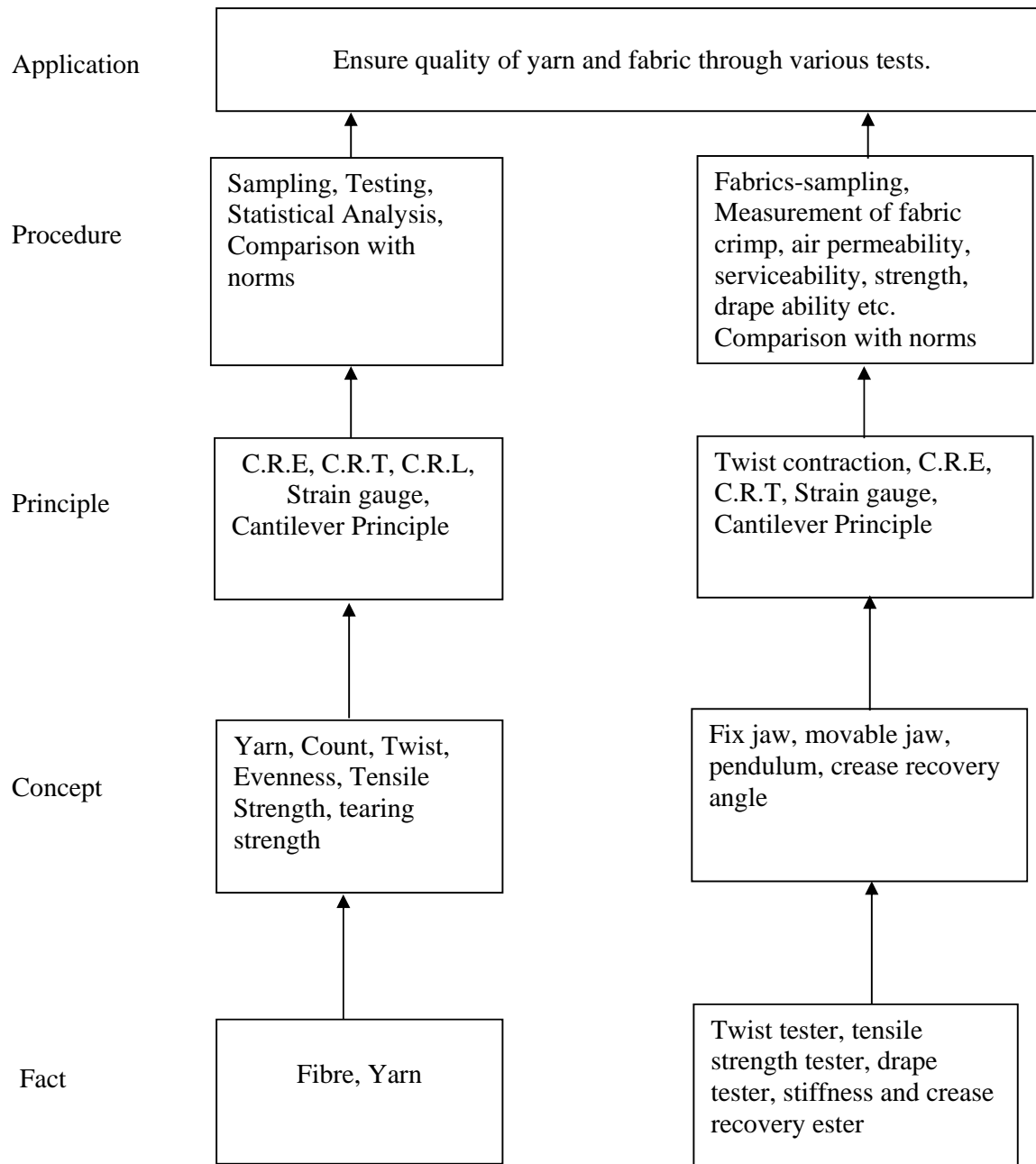
Different fibers are used in textile manufacturing, such as Cotton, Silk, Synthetic etc. These raw materials are used individually or mixed in different proportions to form a yarn of desired quality. The raw materials are to be tested for numerous characteristics like fiber length, fineness, strength, maturity etc. Intermediate products like sliver, roving etc. are also required to be tested for controlling the process, for optimizing the process parameters or for developing existing process. To ensure the quality of final product like yarn, fabric or garment, testing is imperative. This subject will equip students with the concepts, principles and methods of testing of various textile fiber and yarns, which is helpful in selection of raw materials, process control, process optimization and quality assurance.

Since textile is a continuous process, variations in product quality are likely to occur. Results obtained from number of observations are to be analyzed, interpreted and used for best outcomes. Therefore, students are equipped with the methods to analyze the testing results statistically.

**General Objectives:**

1. Understand principle & concept of Testing of Yarns / Fabric
2. Measure Count Twist, Evenness and Strength of yarn.
3. Measure strength, Cover factor, Air permeability of fabric.
3. List standard methods used for testing textile material.
4. Define various terms used in yarn & fabric testing.
5. Correlate the result of the tests to the application of material.

**Learning Structure:**



**DETAILED CONTENTS:**

Chapter	Contents	Hours	Marks
1	<p><b>Yarn Testing:</b>  <b>Specific Objectives</b></p> <ul style="list-style-type: none"> <li>➤ Select yarn count measuring system.</li> <li>➤ Describe the process testing of yarn twist.</li> <li>➤ List different methods of twist measurement.</li> <li>➤ Interpretation of effects of twist on fabric properties</li> <li>➤ Know effects of unevenness.</li> </ul> <p><b>1.1 Yarn Count:</b></p> <ul style="list-style-type: none"> <li>• Different systems of yarn numbering.(direct, indirect)</li> <li>• Definition : British count, Metric, Tex, Denier count</li> <li>• Standard method of determination of yarn count with electronic balance</li> </ul> <p><b>1.2 Yarn twist:</b> Definition, direction twist, effect of twist on yarn and fabric properties.  Measurement of yarn twist -</p> <ul style="list-style-type: none"> <li>• Twist Contraction principle</li> <li>• Untwisting principle</li> </ul>	10	16
	<p><b>1.3 Yarn evenness:</b> Concept, Types of variations in yarn (random&amp; periodic), Expressions used for unevenness: U%, C.V. %, Imperfections. Effect of yarn unevenness on yarn &amp; fabric properties.</p>	06	08
2	<p><b>Fabric Testing:</b>  <b>Specific Objectives</b></p> <ul style="list-style-type: none"> <li>➤ Know different fabric properties to be tested.</li> <li>➤ List importance of fabric testing.</li> <li>➤ Interpretation of test results.</li> <li>➤ Selection of Testing Methods as per End use.</li> </ul> <p><b>2.1 Fabric Sampling Method</b>  <b>2.2 Fabric Dimensional Properties:</b> Fabric Length, Width, Thickness, Weight measurement. Warp Count, Weft Count, and Threads/Unit length, Cover factor (only formula), Crimp in Warp and Weft.</p>	06	16
	<p><b>2.3 Stiffness &amp; Drape of fabric:</b>  Measurement of drape &amp; stiffness.</p> <p><b>2.4 Crease Recovery</b>  Measurement by crease recovery angle</p>	04	14
	<p><b>2.5 Serviceability of fabric</b>  Definition: serviceability, wear, and abrasion. Measurement of wear: Martindales Abrasion tester.  Pilling of fabric: factors responsible for pilling of fabric.  Measurement of pilling ICI Pill box tester.</p>	06	12

	<b>2.6 Water and Air relation to fabric</b> Definitions : Waterproof, shower proof fabrics, water Repellent fabrics Measurement: <ul style="list-style-type: none"> <li>• Spray test,</li> <li>• Hydrostatic water head test.</li> </ul> Definition : Air-permeability, Air resistance, Porosity Measurements of air permeability, Factors affecting air-permeability.	08	12
3	<b>Specific Objectives</b> <ul style="list-style-type: none"> <li>➤ Describe the process of tensile strength testing of yarn and fabric</li> <li>➤ Describe the process of tearing strength, bursting strength testing of fabric.</li> <li>➤ Use appropriate method of testing of tensile, tearing strength.</li> </ul> <b>3.1 Tensile Strength Testing:</b> Definitions : load, elongation, Mass Stress, tenacity, work of rupture, work factor, elastic recovery.	04	10
	<b>3.2 Yarn Strength:</b> Measurement of single yarn strength &lea strength. Count Strength Product (CSP)		
	<b>3.3 Fabric Strength Testing</b> Sample size, principle, working of testers for Fabric tensile strength, Tearing strength, Bursting strength.	04	12
<b>TOTAL</b>		<b>48</b>	<b>100</b>

**Skills to be developed:****1) Intellectual skills:**

1. Proper selection of measuring instruments depending upon the data and precision required.
2. Analyze properties of matter & their use for the selection of material.
3. To interpret the results from observations and calculations.
4. To use these results for corrective actions in mechanical and wet processing.

**2) Motor skills:**

1. Proper handling of instruments.
2. Measuring physical properties of yarn and fabric accurately.
3. To observe the phenomenon and to list the observations in proper tabular form.
4. To adopt proper procedure while performing the experiment.

**Practical:****Skills to be developed:****List of Practical:**

1. Determination of yarn count.

2. Determination of twist in single and doubled yarn.
3. Determination of breaking load and elongation of yarn.
4. Determination of lea strength & count strength product (CSP) of cotton yarn
5. Determination of tensile strength of fabric.
6. Determination tearing strength of fabric.
7. Determination of fabric stiffness.
8. Determination of drape of fabric.
9. Assessment of abrasion resistance and pilling propensity of fabric.

**References:****1. Books:**

<b>Sr. No.</b>	<b>Author</b>	<b>Title</b>	<b>Publisher</b>
1	Angappan	Textile Testing	SS Textile Inst, Coimbatore
2	J. E. Booth	Principles of Textile Testing	--
3	Kothari	Testing and Quality Management	IAFL, New Delhi
4	B. P. Saville	Physical Testing of Textiles	--

**2. Websites:**

- 1) [www.scribd.com](http://www.scribd.com)
- 2) [www.fibre2fashion.com](http://www.fibre2fashion.com)

**Course Name : Diploma in Fashion & Clothing Technology**

**Course Code : DC**

**Semester : Second**

**Subject Title : Pattern Making - II**

**Subject Code : 17335**

**Teaching and Examination Scheme:**

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL
02	--	04	03	100	50#	--	25@	175

**NOTE:**

- **Two tests each of 25 marks to be conducted as per the schedule given by MSBTE.**
- **Total of tests marks for all theory subjects are to be converted out of 100 and to be entered in mark sheet under the head Sessional Work (SW).**

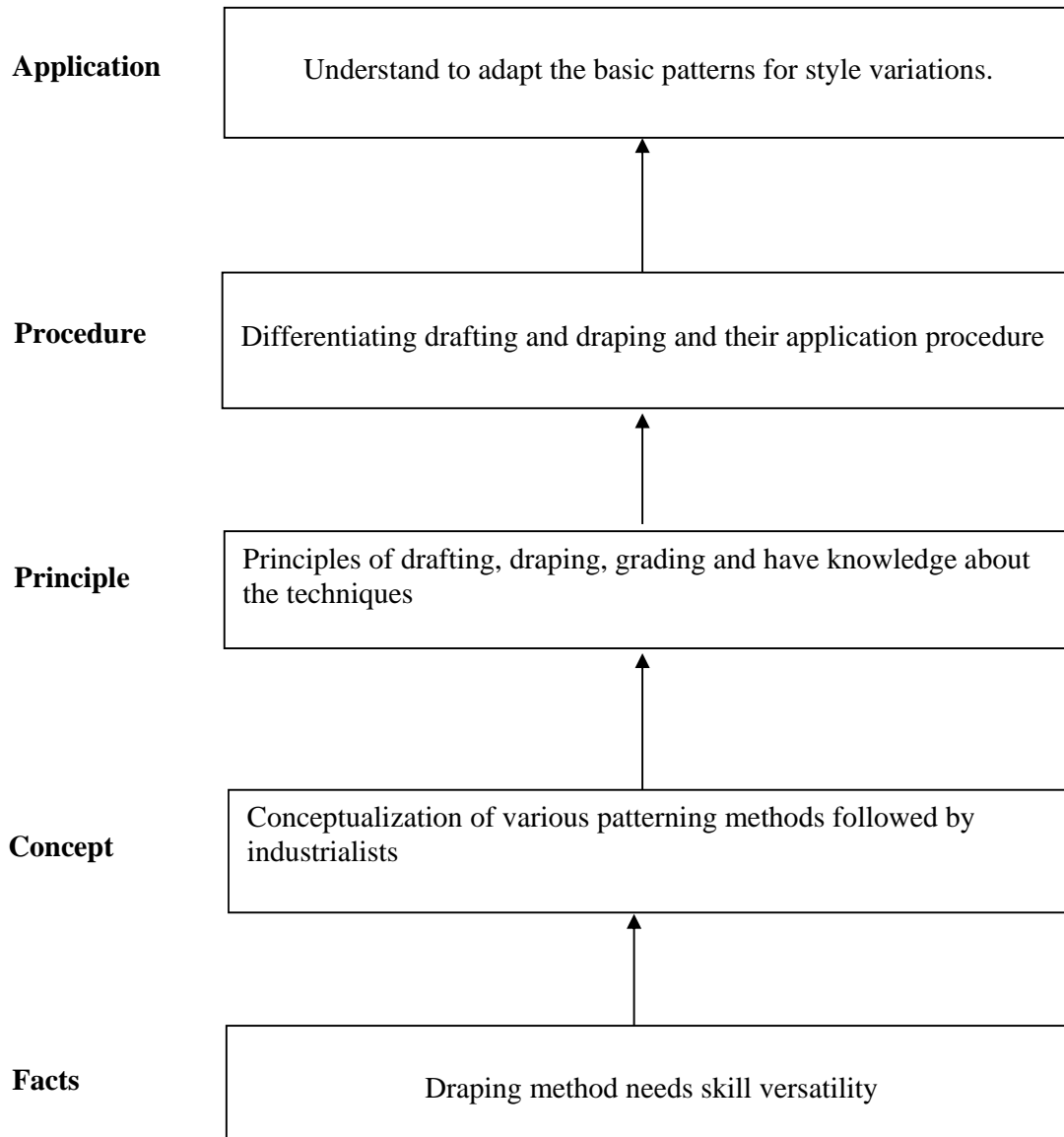
**Rationale:**

To get more exposure to the patterning field, how industrially advanced patterns are prepared, the problems associated with Adaptation, the different Sizing charts of various clients.

**General Objectives:**

- To impart knowledge on various sizing charts.
- To impart knowledge about patterning procedure in depth.
- To impart knowledge of various garment styles and grading.
- To develop commercial patterns, advanced styles of kids wear, women's wear and men's wear.

**Learning Structure:**





**Theory:**

Topic and Contents	Hours	Marks
<p><b>Topic 1: DRAFTING OF ADVANCED PATTERNS</b></p> <p><b>Specific Objectives:</b></p> <ul style="list-style-type: none"> <li>• To understand drafting for kids wear for various garment styles</li> <li>• To understand drafting for women's wear for various garment styles</li> <li>• To understand drafting for men's wear for various garment styles</li> </ul> <p><b>Contents:</b></p> <p><b>1.1 Understanding and drafting advanced patterns for Kids: (08 Marks)</b></p> <ul style="list-style-type: none"> <li>• Jump Suit</li> <li>• Shirt and Knickers</li> </ul> <p><b>1.2 Understanding and drafting of advanced patterns for Women: (12 Marks)</b></p> <ul style="list-style-type: none"> <li>• Salwar and Kameez</li> <li>• Chudidar</li> <li>• Empire and Princess line Tops</li> <li>• Fish Tail Skirt</li> </ul> <p><b>1.3 Understanding and drafting of advanced patterns for Men: (12 Marks)</b></p> <ul style="list-style-type: none"> <li>• Formal Shirt</li> <li>• Casual Jeans</li> <li>• Boxer Shorts</li> <li>• Kalidar Sherwani</li> <li>• SB Coat</li> </ul>	09	32
<p><b>Topic 2: DART MANIPULATION:</b></p> <p><b>Specific Objectives:</b></p> <ul style="list-style-type: none"> <li>• To understand principles of dart manipulation techniques</li> <li>• To understand the skills required for draping</li> <li>• To understand Styling through darts</li> </ul> <p><b>Contents:</b></p> <p><b>2.1 Introduction: (02 Marks)</b></p> <ul style="list-style-type: none"> <li>• Types of Darts, Dart terminology</li> </ul> <p><b>2.2 Techniques of dart manipulation (08 Marks)</b></p> <ul style="list-style-type: none"> <li>• Slash and Spread method</li> <li>• Pivotal method</li> </ul> <p><b>2.3 Creating styles through dart manipulation. (06 Marks)</b></p> <ul style="list-style-type: none"> <li>• Conversion of darts into tucks</li> <li>• Conversion of darts into Seams</li> <li>• Conversion of darts into Pleat</li> </ul>	04	16

<p><b>Topic 3: ADAPTATION FOR SPECIALTY PURPOSE</b></p> <p><b>Specific Objectives:</b></p> <ul style="list-style-type: none"> <li>To understand the relation of fit with garment</li> <li>To understand fitting problems and remedies</li> <li>To understand various figure types and their pattern needs</li> </ul> <p><b>Contents:</b></p> <p><b>3.1 Fitting Principles: (08 Marks)</b></p> <ul style="list-style-type: none"> <li>Principles of fit</li> <li>Types of fit</li> <li>Relationship of fit with desired appearance</li> </ul> <p><b>3.2 Fitting problems: (08 Marks)</b></p> <ul style="list-style-type: none"> <li>Fitting problems associated with Kid's garments and their remedies</li> <li>Fitting problems associated with women's garments and their remedies</li> <li>Fitting problems associated with men's garments and their remedies</li> </ul> <p><b>3.3 Adaptation of patterns for various figure types: (04 Marks)</b></p> <ul style="list-style-type: none"> <li>Oval Figure- Characteristics, Considerations and Adaptation</li> <li>Rectangular figure- Characteristics, Considerations and Adaptation</li> <li>Triangular figure- Characteristics, Considerations and Adaptation</li> <li>Inverted Triangular Figure- Characteristics, Considerations and Adaptation</li> <li>Wedge Shaped Figure- Characteristics, Considerations and Adaptation</li> </ul>	06	20
<p><b>Topic 4: DRAPING</b></p> <p><b>Specific Objectives:</b></p> <ul style="list-style-type: none"> <li>To impart knowledge about Draping and fabric</li> <li>To impart knowledge about Draping techniques and principles</li> </ul> <p><b>Contents:</b></p> <p><b>4.1 Introduction to Draping: (04 Marks)</b></p> <ul style="list-style-type: none"> <li>Draping Terminology</li> <li>Tools used for Draping</li> <li>Understanding dress form and its parts</li> <li>Principles of Draping and fitting methods</li> </ul> <p><b>4.2 Study of Draping Material: (04 Marks)</b></p> <ul style="list-style-type: none"> <li>Types of Draping Material</li> <li>Selection of Material for Draping</li> <li>Preparation of fabric for Draping</li> </ul> <p><b>4.3 Draping the basic Garment Components: (12 Marks)</b></p> <ul style="list-style-type: none"> <li>Draping Female basic bodice block and basic skirt</li> <li>Draping of sleeves and Collars</li> <li>Draping of Men's Basic Pant</li> </ul>	08	20

<b>Topic 5: GRADING</b>			
<b>Specific Objectives:</b>			
<ul style="list-style-type: none"> <li>To understand Grading principles and Merits</li> <li>To understand Grading rules and types</li> </ul>			
<b>Contents:</b>			
<b>5.1 Introduction to grading:</b>	<b>(04 Marks)</b>		
<ul style="list-style-type: none"> <li>General principles, Grade Rules</li> <li>Zero Point and Cardinal Points</li> </ul>		05	
<b>5.2 Methods of grading:</b>	<b>(04 Marks)</b>		
<ul style="list-style-type: none"> <li>Track grading</li> <li>Nested grading</li> </ul>		12	
<b>5.3 Grading the basic Garment Components:</b>	<b>(04 Marks)</b>		
<ul style="list-style-type: none"> <li>Grading basic bodice block and basic skirt</li> <li>Grading of sleeves and Collars</li> </ul>			
<b>Total</b>		<b>32</b>	<b>100</b>

**Practical:****Skills to be developed:**

- Taking body measurements
- Knowledge of proper body land marks
- Patterning coding and decoding
- Idea of adaptation

**Intellectual Skills:**

- Breathing eases
- Logical adaptation
- Patterning sense

**Motor Skills:**

- Measuring appropriately
- Draft the pattern
- Adapt the patterns

**List of Practical:**

- Drafting Children's Jump Suit-4years (1/4<sup>th</sup> Scale)
- Drafting for Shirt and Knickers-7 Years(1/4<sup>th</sup> Scale)
- Drafting for Salwar & Kameez (1/4<sup>th</sup> Scale)
- Drafting for Chudidar (1/4<sup>th</sup> Scale)
- Adaptation from basic bodice to Women's One Piece Dress with Princess Cut (1/4<sup>th</sup> Scale)
- Drafting for Women's Katori Saree Blouse (1/4<sup>th</sup> Scale)
- Drafting for Men's T- Shirt with Raglan Sleeve (1/4<sup>th</sup> Scale)
- Drafting for Men's Jeans (1/4<sup>th</sup> Scale)
- Drafting for Men's DB Coat (1/4<sup>th</sup> Scale)
- Draping Female Basic Bodice block and Sleeves
- Draping of Basic Skirt

12. Draping of Men's Basic Pant
13. Grading Basic Bodice block (Draped Block)

**List of Assignments:**

1. Convert basic block with Shoulder and Waist line dart into Fish dart.
2. Convert basic block with Shoulder and Waist line dart to four Radial darts at neckline using Slash and Spread method.
3. Relocate Shoulder dart to French dart using Pivotal Method.
4. Grade the Sleeve Block to next two increasing sizes. (Full Scale)
5. Grade the Skirt Block to one increasing and one decreasing size. (1/4<sup>th</sup> Scale)

**Learning Resources:****1. Books:**

Sr. No.	Author	Title	Publisher
1	Zarapkar K.R.	Zarapkar System of Cutting	Sale Publishers, Bombay
2	Helen Joseph Armstrong	Pattern Making for fashion Design	Harper Collins, LA
3	Winifred Aldrich	Metric Pattern Cutting	Balckwell Science Ltd., London
4	Gillian Holman	Pattern Cutting Made Easy	Balckwell Science Ltd., London
5	Natalie Bray	More Dress Pattern Designing	Balckwell Science Ltd., London
6	Mary Mathews	Practical Clothing Construction	--
7	Gayatri Verma & Kapil Dev	Cutting & Tailoring Practical (Drafting)	--
8	Master Designer, Chicago	Modern Garment Design and Grading	Master Designer
9	Connie Amaden-Crawford	The Art of Fashion Draping	Fair Child Books

**2. CD's and PPT's Models Charts:**

- Draping demonstration by Emi
- Reach Technologies Grading Demo

**3. Websites:**

- [www.biep.co.in](http://www.biep.co.in)
- [www.fiber2fashion.com](http://www.fiber2fashion.com)
- [www.vidoemo.com](http://www.vidoemo.com)

**Course Name : Diploma in Fashion & Clothing Technology****Course Code : DC****Semester : Third****Subject Title : Fabric Structure****Subject Code : 17336****Teaching and Examination Scheme:**

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL
03	--	02	03	100	50#	--	25@	175

**NOTE:**

**Two tests each of 25 marks are to be conducted as per the schedule given by MSBTE.**

**Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional work (SW).**

**Rational:**

The fabrics are to be produced to serve certain end uses. These end uses determine the properties and the quality of the fabric that it should possess. The quality of the fabric depends on its 'functional' and 'aesthetic' properties. These in turn are governed by raw material selection (fibre), yarn used, fabric construction, structure and texture, and ornamentation of fabric.

Some of the end uses give emphasis only on the functional aspects and others on both functional and aesthetic aspects. Fabric structure, design, and colour is therefore important part of study.

**Objectives:**

The students are taught about the methods of fabric design and structure and their production on the looms. They are also taught the methods of ornamenting the fabric with attractive figures during weaving process with the help of special mechanisms like Dobby, Drop box, and Jacquards. The fabrics can also be embellished with the coloured prints in chemical processing. The students are taught about the use of colours and methods of developing the attractive figures, which can be used to decorate the fabrics.

**Contents: Theory**

<b>Chapter</b>	<b>Contents</b>	<b>Hours</b>	<b>Marks</b>
1	<b>Fundamental of Fabric Structure</b> 1.1 Fabric Quality particulars Meaning of the terms i) Threads/cm or Threads/Inch EPI-EPcm-EPdm PPI-PPcm-PPdm ii) Warp count Tex, Denier, English cotton count Weft count iii) Warp cover factor Weft cover factor Fabric cover factor iv) Weight in gms/m <sup>2</sup> or oz/yd <sup>2</sup> 1.2 Concept of Design, Draft, Lifting plan, Denting order 1.3 Characteristics features of following fabric; Poplin, Voile, Cambric, Chiffon, Corduroy, Crepe, Denim, Dhoti, Drill, Felt, Lawn, Organdie, Sheeting Muslin.	06	12
2	<b>Characteristics of Plain Weave</b> 2.1 Concept of balanced & unbalanced cloth 2.2 Marking design, draft, peg plan for Warp & Weft Rib weave (Regular & Irregular). Matt/Hopsack weave (Regular & Irregular)	08	16
3	<b>Methods of Ornamentation of plain cloth</b> i) Use of colour, Balancing of warp pattern ii) Variation of twist iii) Shadow effect iv) Count, Sett and Twist variation v) Seersucker / Cocked / Blistered effect with description and application.	04	08
4	<b>Characteristics of Twill Weave</b> 4.1 i) Simple Twill (Balanced & Unbalanced) ii) Warp faced, Weft faced iii) Right hand, Left hand 4.2 Design, Draft, Peg plan for the derivatives of Twill Weave- i) Pointed ii) Herring bone iii) Transposed iv) Diamond	08	16
5	<b>Characteristics of Sation, Sateen, Weaves</b> Principles, rules & drawing of Design, Draft, Peg plan for Satin and Sateen (Regular & Irregular weaves)	04	08
6	<b>Marking Design, Draft, Peg plan &amp; Denting order for Fancy structures</b> i) Huck-a-back ii) Mockleno iii) Crepe iv) Honey comb v) Brighten Honey comb Special features of above cloth.	08	16
7	<b>Principles of Bedford Cord &amp; Pique</b> 7.1 Marking Design, Draft, Peg plan & Denting order for Plain faced Bedford cord & ordinary Welt, Special loom equipments and motions required. Concept development with line sketch and characteristics of 7.2 i) Backed cloth ii) Double cloth iii) Extra Warp & Weft cloth Classification of Double cloth.	06	16

8	Characteristics of Leno, Gauze, Warp pile, Weft pile, Terry Towel. 8.1 Principles of Leno structure 8.2 Basic shades required for Leno structure 8.3 Classification of Velveteen & Velvet. 8.4 Design of Standard plain back Velveteen and Fast pile Structure 8.5 Concept of density of piles /cm <sup>2</sup> 8.6 Manufacturing and formation of 3-pick Terry structure with piles on both sides. 8.7 Concept of Warp pile production on face to face principle.	04	08
<b>TOTAL</b>		<b>48</b>	<b>100</b>

**Practical:**

Sr. No.	Practical
1	Fabric analysis of plain weave and to find design draft, peg plan & EPI,PPI, count of yarn, cover factor & weight of fabric in gm/mt.square. (4 hrs.)
2	Fabric analysis of Rib or Matt weave (2 Hrs.)
3	Fabric analysis of Twill weave its derivatives (2 Hrs.)
4	Fabric analysis Satin or Sateen woven structures (2 Hrs.)
5	Fabric analysis of Ornamentation Combination of Plain, Twill or Satin Weaves. (2 Hrs.)
6	Fabric analysis of Crepe/Honey comb/Huck-a-back samples (2 Hrs.)
7	Introduction to Bedford cord /pique (2 Hrs.)
8	Introduction to double cloth-extra warp & extra weft (2 Hrs.)

**References:****Books:**

Sr. No.	Author	Title	Year of Publication	Publication & Publisher
1	Watson	Elements of Textile Design	1989	Universal Publishing co. Mumbai.
2	Nisbet	Textile Design	1957	West Duxbury Manchester U.K.
3	Grovisicki	Textile Design & Colour	2004	Universal Publishing Co. Mumbai.
4	Ajgaonkar & Talukdar	Weaving Mechanism Machines & Management	--	Mahajan Publishers Pvt. Ltd., Ahmedabad
5	K. T. Aswani	Fancy Weaving	1990	Mahajan Publishers Pvt. Ltd., Ahmedabad
6	Seema Sekhri	Textbook of Fabric science	2011	PHI Learning Private Ltd., New Delhi-10001.
7	N. Gokarheshan	Fabric Structure & Design	2009	New Age, International Publisher Delhi.
8	Charu Swami	Textile Design	2011	New Age, International Publisher Delhi.
9	Banergee	Weaving Vol. I Weaving Vol. II	1992	Textile Book House Behrampore, West Bengal

**Websites:**

[http :// www. jdinsttue.com](http://www.jdinsttue.com)

[fabric structures.com.au](http://fabricstructures.com.au)

[http:// www.docin.com/p.](http://www.docin.com/p)

Weaves-Google Search

[http: // www. google.com/...](http://www.google.com/...)



**Course Name : Diploma in Fashion & Clothing Technology**

**Course Code : DC**

**Semester : Third**

**Subject Title : Clothing Construction**

**Subject Code : 17337**

**Teaching and Examination Scheme:**

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL
04	--	04	03	100	50#	--	25@	175

**NOTE:**

- **Two tests each of 25 marks to be conducted as per the schedule given by MSBTE.**
- **Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work (SW).**

**Rational:**

There are various types of garments available in the market. Students should know the construction of these garments in a systematic way. Types of seams stitches, sewing threads & its relation with accessories will be understood well.

**General Objectives:**

Students should understand different Seams, Stitches, Sewing threads. Sewing problems & its solutions related to sleeves collars. Yokes plackets, pockets & waist band.

**CONTENTS: Theory**

<b>Chapter</b>	<b>Name of the Topic</b>	<b>Hour</b>	<b>Marks</b>
1	<b>Seams &amp; Stitches</b> Specific Objectives: to understand various types of seams & stitches Seams: - Definition, Types of seams, seam quality, seam performance, factors for seam selection, seam finishes, seam defects. Stitches: - Definition, stitch classes, Types, subclasses, stitch parameters, factors for selection of stitches.	12	20
2	<b>Sewing Thread:</b> Specific Objectives: to understand various types of sewing threads & their properties Sewing Thread:-Types, construction, sewing thread quality, selection of sewing thread. Ticket number, packages. Sewing problems: Stitching problems, problems of puckering	04	08
3	<b>Sleeves:</b> Specific Objectives: to know the various types of sleeves & method of attaching sleeves Sleeves: Types of sleeves, plain, puffs, gathered, bell, Raglan, bishop, circular, leg-o-mutton, Magyar sleeves, dolman, kimono One piece, two piece Method of construction of various sleeves.	12	14
4	<b>Collars :</b> Specific Objectives: to know the various types of collars & methods of construction & attaching collars Collars : Classification, full, flat, roll, partial roll, puritan collar, sailor collar, square collar ripped collar, scalloped collar, mandarin convertible, tie, shawl reverse, notch collar. Method of construction of various collars.	10	10
5	<b>Fullness :</b> Specific Objectives: to understand the various types of fullness & method of imparting fullness in garments Fullness : Definition and Types Yokes: Definition, selection of yoke design, different styles of yoke. Simple yoke, yoke with or without fullness, midriff yokes, methods of attaching yokes. Darts : single, double pointed darts, Tucks: pin tucks , cross tuck, piped tuck, shell tucks, Pleats: knife pleats, box pleats, inverted box pleats, kick pleats, Flare godets, gathers, stirrings, Single & double frills, ruffles. Different places where these are used.	11	20
6	<b>Hemming Techniques &amp; Application of Accessories</b> Specific Objectives: to know the various hemming techniques & attaching various accessories for garment closure Hemming Techniques: Definition, Selection of hem, types of machine, stitched hem, hand stitched hem. Garment closure, Application of Accessories: Zippers - fly, Button & button holes, Velcro, Professional Sewing Standards	05	08
7	<b>Plackets :</b>	04	10

	Specific Objectives: to understand the various types of plackets & methods of sewing plackets. Plackets : Types regular, top stitched, edge stitched, concealed plackets, kurta plackets, faced placket, continuous bound & diamond plackets		
8	<b>Pockets:</b> Specific Objectives: to understand the various types of pockets & waistbands & methods of sewing them Pockets: Types patch pocket, with lining flap, front hip, seat in, seam, slash pocket with flap, single lip, double lip. Waist Band: One piece, two piece, tailor waist band, elastic applied.	06	10
<b>TOTAL</b>		<b>64</b>	<b>100</b>

**List of Practical:**

Sr. No.	Practical	
1	To prepare samples for hand stitches, darts & pleats	12 hrs
2	Preparing samples for plackets continuous bound plackets, Two piece plackets, tailor plackets Fly opening & zipper	12 hrs
3	Samples for Necklines – Bias facing, Bias binding & fitted facing.	12 hrs
4	Samples for collars – Peter pan collar, full shirt collar, shawl collar.	12 hrs
5	Samples for pockets – Patch pockets, bound pocket, front hip pocket	8 hrs
6	Samples for sleeves – plain, puff, Raglan, kimono	8 hrs

**Learning Resources:**

Author	Title	Year of Publication	Place of Publication & Publisher
Cooklin Gerry	Garment Technology for fashion designers	1997	Black well science Ltd , England
Terry Cooklin	Sewing for Apparel Industry	2000	prentice Hall ,Eng.
Mervinger	Step by step dress making course.	1992	BBC Books , Eng.
Harold carr & Barbara latham	The Technology of clothing Manufacture	1994	Om book Service. England

**Course Name : Diploma in Fashion & Clothing Technology**

**Course Code : DC**

**Semester : Third**

**Subject Title : Textile Design**

**Subject Code : 17338**

**Teaching and Examination Scheme:**

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL
02	--	02	03	100	--	--	25@	125

**NOTE:**

- **Two tests each of 25 marks to be conducted as per the schedule given by MSBTE.**
- **Total of tests marks for all theory subjects are to be converted out of 50 and to be entered in mark sheet under the head Sessional Work (SW).**

**Rational:**

The field of fabric decoration now commonly called surface design has seen a great deal of growth and development. Design units, broadest aspects, affects all phases of our life today. One must have knowledge of art and Principles of textile design right from the history to modern develop designing with CAD system.

**Objectives:**

The students will be able to:

- Understand & develop different elements of art.
- Appreciate principles of textile design & use the same during practicals.
- Learn different colour harmonies & use the colours as per the need of designing
- Development his creativity & use it with the help of CAD system.

**Detailed Contents:**

<b>Contents</b>	<b>Hours</b>	<b>Marks</b>
<p><b>Elements of Art</b> Specific Objectives:</p> <ul style="list-style-type: none"> <li>* Identify elements of art</li> <li>* Draw art work.</li> </ul> <p>Line - Concept , definition, Types of lines Direction – Types Shape – definition , different types Size – Concept development – types of sizes Texture – Concept &amp; application Value – Concept , use of the element in art Colour – definition , sensation process &amp; use</p>	02	08
<p><b>Principles of Textile design</b> Specific Objectives :</p> <ul style="list-style-type: none"> <li>* Use principles of design during design development process.</li> <li>* Identify principles of textile design.</li> </ul> <p>Repetition - Technical concept Alternation - Size, direction , Colour shape, permutation, combination Harmony – Pure &amp; discard Gradation – Shape, size &amp; colour Contrast – Hue, colour &amp; value contrast Unity – Concept development Balance – Formal &amp; informal balance Dominance &amp; Sub-ordination – concept &amp; application</p>	06	20
<p><b>Colour Theories</b> Specific Objectives :</p> <ul style="list-style-type: none"> <li>* Draw charts of theories of colour.</li> <li>* Distinguish pigment and light theory of colour with reference to primary and secondary colours.</li> <li>* Develop hig key, mid key and low key</li> <li>* Use colour harmonies during textile design development</li> </ul> <p>3.1 i) Light theory of colour - concept &amp; application Chormatic circle Colour vision ii) Pigment theory of colour - concept &amp; application Colour wheel iii) Complementary colours iv) Attributes of primary &amp; secondary colours. 3.2 Colour Modification - concept, need &amp; requirements.</p> <p>High key Mid key Low key Change in hue Change in value Neutralized colour</p> <p>3.3 Colour Harmony – Concept, Need &amp; Requirements. Achromatic colour harmony Monochromatic colour harmony</p>	10	28

Analogues colour harmony Complementary colour harmony Polychromatic colour harmony		
<b>Influence of fabric characteristics on appearance of colour</b> Specific Objectives:  * list Influence of fabric characteristics on appearance of Colour * Identify combination of differently colour threads in stripes and check fabrics  Mixed colour effects Fibre mixture yarns Twist yarn mixture Combinations of differently colour threads Colour strips & checks	02	08
<b>Effect of weave and colour on the appearance and ornamentation of fabrics.</b> Specific Objectives:  * Select the fabric design with Effect of weave and colour on the appearance and ornamentation of fabrics. * Compare different colour and weave effects. ➤ Simple colour & weave effects ➤ Continuous line effect ➤ Hound's tooth effect ➤ Bird's i effect ➤ Hair line effect ➤ Step pattern	02	08
<b>History of Textile Design</b> Specific Objective : * List Indian brocades, shawls and embroideries developed in history of Indian textiles. Indus Valley Civilization Indian brocades Shawls of India Indian Embroidery Indian dyed & printed fabrics	04	08
<b>Methods of Composing all-over Textile Design</b> Specific Objective: * Sketch textile design with different methods of composition. * Compare regular and irregular sating based textile design All over repeating design Half drop design Full drop design  Rectangular drop reverse, universe design Diamond base design Ogee basic design Sateen base design (System of distribution regular & irregular)	03	12
	03	08

<b>Computer Aided Textile design.</b> Specific Objective : * Use creativity in design textile patterns with use of CAD soft * Compare woven textile design and printed textile design  Need & requirement of software Creativity utilizations with the tools of computer Computer aided woven textile design Computer aided printed textile design		
<b>Total</b>	<b>32</b>	<b>100</b>

**PRACTICAL:**

(Total 10 Sheets to be submitted)

Sr. No.	Practical
1	Units of design - development of motif - 1 sheet
2	Colour modification chart - 1 sheet
3	Light theory of colour chart - 1 sheet
4	Pigment theory of colour chart - 1 sheet
5	Colour wheel development - 1 sheet
6	Colour Harmonies - to be used for different textile designs – 2 sheet Achromatic Monochromatic Analogues Complementary Polychromatic
7	Composition of all over textile design - 1 sheets Diamond base design Ogee base design Sateen base design Half drop base design
8	Indian Traditional Motif development - 1 sheet
9	Tint, Tone & shade development sheet - 1 sheet

**Learning Resources:****Books:**

Author	Title	Year of Publication	Place of Publication & Publisher
Z. Grosicki	Watson's Textile Design & Colour	1988	Universal Publishing Corp. India - London
V.A. Shenal	History of Textile Design	1977	Sevaak Publication, Mumbai
C.R. Sadhale	Instruction package on application of art & Design to textile	1993-94	Private Circulation TTTI, Bhopal & DKTE – Ichalkaranji

**Web Sites:**

[www.designdiary.nic.in/relevant...](http://www.designdiary.nic.in/relevant...)  
[www.studiosmrit.com/](http://www.studiosmrit.com/)  
[www.vaishalidesigns.com/jobs.html](http://www.vaishalidesigns.com/jobs.html)  
[www.printpattern.blogspot.com](http://www.printpattern.blogspot.com)  
[www. Designer.com/directory/cat/....](http://www.Designer.com/directory/cat/...)

**Course Name : Diploma in Fashion & Clothing Technology**

**Course Code : DC**

**Semester : Third**

**Subject Title : Professional Practices-I**

**Subject Code : 17029**

**Teaching and Examination Scheme:**

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL
--	--	03	--	--	--	--	50@	50

**Rationale:**

Most of the diploma holders join industries for jobs. Due to globalization and competition in the industrial and service sectors the selection for the job is based on campus interviews or competitive tests.

While selecting candidates a normal practice adopted is to see general confidence, ability to communicate and attitude, in addition to basic technological concepts.

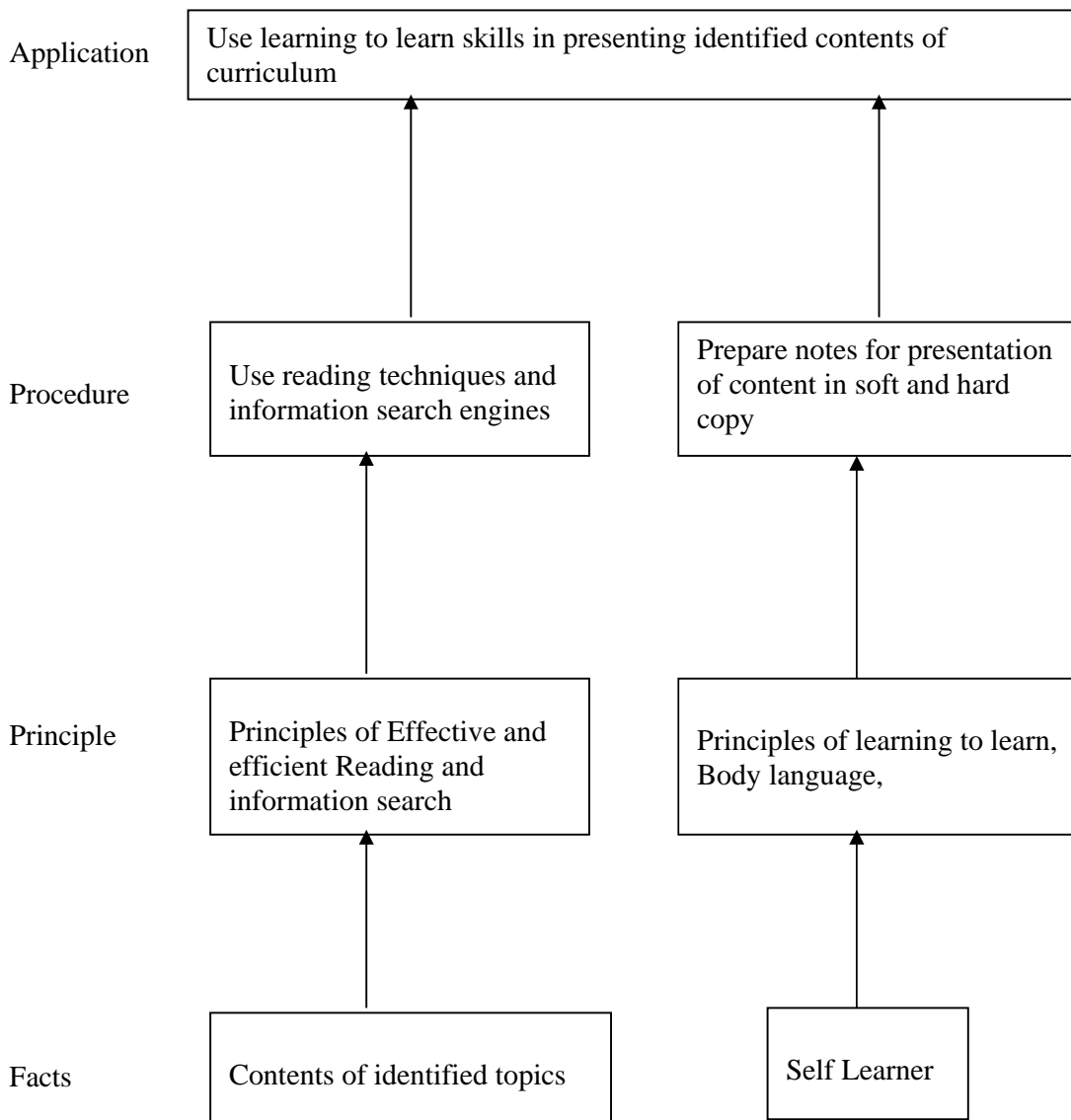
The purpose of introducing professional practices is to provide opportunity to students to undergo activities which will enable them to develop confidence. Industrial visits, expert lectures, seminars on technical topics and group discussion are planned in a semester so that there will be increased participation of students in learning process.

**Objectives:** Student will be able to:

1. Acquire information from different sources.
2. Prepare notes for given topic.
3. Present given topic in a seminar.
4. Interact with peers to share thoughts.
5. Prepare a report on industrial visit, expert lecture.



**Learning Structure:**



Serial No.	Activities
1	<p><b>Industrial Visits</b> Structured industrial visits be arranged and report of the same should be submitted by the individual student, to form a part of the term work. <b>TWO</b> industrial visits may be arranged in the following areas / industries :</p> <ol style="list-style-type: none"> <li>1) Manufacturing organizations for observing various manufacturing processes of Garment Production.</li> <li>2) Quality Testing laboratories of Garments in industries or reputed organizations</li> <li>3) Fashion Merchandising</li> <li>4) Fashion Marketing</li> <li>5) Manufacturing organizations for observing various manufacturing processes of Yarn &amp; Fabric Production.</li> <li>6) Knitting Industry.</li> <li>7) Textile Chemical processing industry.</li> </ol>
2	<p><b>Lectures by Professional / Industrial Expert be organized from ANY THREE of the following areas:</b></p> <ol style="list-style-type: none"> <li>1) Computer aided designing (CAD/ CAM).</li> <li>2) Fashion Merchandising</li> <li>3) Export marketing of Garments</li> <li>4) Fashion Design Sketching</li> <li>5) Garment Production process</li> <li>6) Safety Precautions &amp; Waste Elimination in garment industry</li> <li>7) Garment Chemical Processing.</li> </ol>
3	<p><b>Individual Assignments:</b> <b>Any two</b> from the list suggested</p> <ol style="list-style-type: none"> <li>1) Process sequence of Garment Manufacturing.</li> <li>2) Write material specifications for Garment Manufacturing.</li> <li>3) Collection of samples of different garment produced with different materials i.e. fabrics.</li> <li>4) Collection of needle specifications and needle samples.</li> <li>5) Collection of different embroidered samples.</li> <li>6) Value addition of apparels.</li> </ol> <p style="text-align: center;"><b>OR</b></p> <p>Conduct <b>ANY ONE</b> of the following activities through active participation of students and write report</p> <ol style="list-style-type: none"> <li>1. Rally for energy conservation / tree plantation.</li> <li>2. Survey for local social problems such as mal nutrition, unemployment, cleanliness, illiteracy etc.</li> <li>3. Conduct aptitude , general knowledge test , IQ test</li> <li>4. Arrange <b>any one</b> training in the following areas: A) Yoga. B) Use of firefighting equipment and First aid</li> </ol>
4	<p><b>Modular courses ( Optional ):</b> A course module should be designed in the following areas for max. 12 hrs.</p>

	<p>Batch size - min. 15 students. Course may be organized internally or with the help of external organizations.</p> <ol style="list-style-type: none"><li>1) Garment technology.</li><li>2) CAD-CAM related software.</li><li>3) Fashion design.</li><li>4) Personality development.</li><li>5) Entrepreneurship development.</li></ol>
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**Course Name : Diploma in Fashion & Clothing**

**Course Code : DC**

**Semester : Third**

**Subject Title : Basics of Embroidery**

**Subject Code : 17032**

**Teaching and Examination Scheme:**

Teaching Scheme			Examination Scheme					
TH	TU	PR	PAPER HRS.	TH	PR	OR	TW	TOTAL
--	--	02	--	--	--	--	25@	25

**Rationale:**

Numerous fabrics are required to be known to the students on which embroidery is done. Also the Indian state wise hand embroidery and modern machine embroidery.

**Objectives:**

To develop following skills:

Students in this subject will learn different embroidered cloths & its techniques, Ornamentation & machines required for it .They should understand hand & machine embroidery needles, threads, structures.

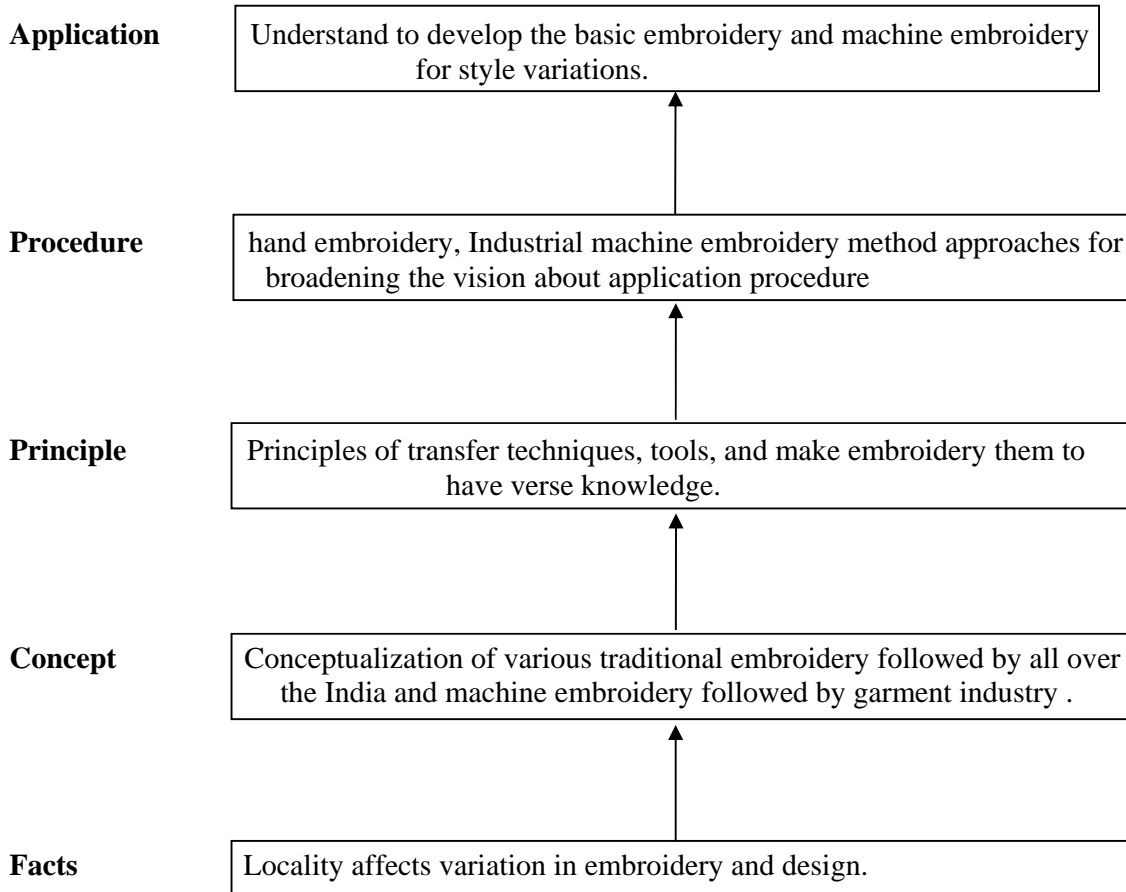
**Intellectual Skills:**

- Students will be able to understand history of embroidery.
- Students will be able to make traditional embroideries.
- Students will be able to understand machine embroidery.

**Motor Skills:**

- Students will be able to design transfer technique and tools.
- Students will be able to make historical embroideries.
- Students will be able to develop machine embroidery.

**Learning Structure:**



**Theory: to be taught during practical hrs.**

<b>Contents</b>
• History of Embroidery
• General rules for hand embroidery
• Design transfer techniques
• Tools for hand embroidery
• Selection of needle, threads, and fabric for embroidery
• Selection of method of design transfer
• Phulkari Embroidery: motifs: Camel, elephant, flowers, sun, nandi, shivalaya, tulsivridavan Colors: red, orange, yellow, purple, blue, green Material: khaddar material
• Kasuti Embroidery: motifs: elephant, flowers, suryamukhi, shivling, tulsivridavan peacock, chess square, flower pot, swastick Colors: red, orange, yellow, purple, blue, green Material: cotton, jute, silk, synthetic
• Kantha Embroidery: motifs: elephant, flowers, peacock, temples, human figures, spirals, trees, whirls, mirror, umbrella, lotus Colors: red, yellow, blue, green Material: muslin cotton
• Kashmiri Embroidery: motifs: lili, lotus, grapes, birds, flowers, badami butta, kalaka, Colors: yellow, blue, green, white, black, red Material: cotton, wool, silk, chinon, linen
• Kutch Embroidery: Motifs: birds, flowers, creepers, foliages, parrots, peacock, human figure, dancing doll, Colors: red, orange, yellow, purple, blue, green Material: khaddar material, satin, silk, gajji silk, atlash
• Chikankari Embroidery: motifs: kalka, floral, badami butta Colors: red, orange, yellow, purple, blue, green, white Material: cotton like organdie, chiffon, mulmul, cambray, voile, jeogettes, nets & sheer fabric
• Ornamental Techniques: Eyelet work Lace work Cut work Patch work Bead work Sequins work

<ul style="list-style-type: none"> <li>• Introduction to various types of embroidery machines</li> <li>• Introduction to various types of embroidery software</li> <li>• Different input methods: Floppy CDs</li> <li>• Various types of stitches: Satin Running Zigzag Chain</li> <li>• Various types of material: Woven Knits</li> </ul>
<ul style="list-style-type: none"> <li>• Design in computerized embroidery machines: Study of tools in embroidery software for designing</li> </ul>
<ul style="list-style-type: none"> <li>• Study of difference between hand embroidery and machine embroidery</li> </ul>

**List of Practicals:**

1. Study of design transfer techniques.
2. Study of historical background motifs, colors & materials used in embroideries of Phulkari.
3. Study of historical background motifs, colors & materials used in embroideries of Kasuti.
4. Study of historical background motifs, colors & materials used in embroideries of Kantha.
5. Study of historical background motifs, colors & materials used in embroideries of Kashmiri.
6. Study of historical background motifs, colors & materials used in embroideries of Kutch in Gujarat.
7. Study of historical background motifs, colors & materials used in embroideries of Chikankari in Uttar Pradesh.
8. Study of ornamental Techniques- Eyelet work, Lace work, Cutwork, Patchwork, Bead work, Sequins work
9. Study of computerized embroidery machines threads, needles, frames and fabric for embroidery.
10. Study of computerized embroidery machines and software.
11. Develop the design in computerized embroidery machines-alphabetical design.
12. Develop the design in computerized embroidery machines-creative design.
13. Assignment on differentiate the basic hand embroidery stitches with machine stitches.

**Learning Resources:****Books:**

Sr. No.	Author	Title	Publisher
1.	Shailaja D. Naik	Traditional Embroideries of India	A.P.H Publishing Corporation, New Delhi, 1996.

2.	Sheila Paine	Embroidered textiles	Thames and Hudson Ltd.,1990.
3.	Gail Lawther	Inspirational Ideas for Embroidery on clothes and Accessories	Search Press Ltd., 1993.

**List of Machines and Equipments:**

1. Embroidery Needle
2. Embroidery Frames
3. Embroidery Threads
4. White carbon paper
5. Embroidery machine
6. Embroidery software (Wilcom)