

**GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT  
COURSE CURRICULUM**

Course Title: Fabric Design - I

Course Code: 3325903

Diploma Programmes in which this course is offered	Semester in which offered
Diploma in Textile Designing	Second Semester

### 1. RATIONALE

Textile design is the process of creating patterns, designs and structures for knitted, woven, non-woven or embellishments of fabrics. Textile designing involves producing for cloth used in clothing (Sarees, Kurta, salwar, dupatta, pants, shirts, etc), household textiles (curtains, bedcovers, sofa covers, table covers, etc), towels and decorative textiles such as carpets. Textile designing is a creative field that bridges fashion design, carpet manufacturing and any other cloth-related field. Textile design is very important in our world due to varying geographical conditions, variety of cultures, religions, psychological factors, attitudes, etc. The Textile designers should have knowledge of different types of weave design and fabric structure for the process of fabric manufacturing for different end uses. This will assist them to create designs during fabric production. This course provides basic knowledge regarding methods of fabric representation, representation of weave design on point paper, construction of different types of weave design, fabric structure, as well as analysis of weave design and different fabric parameters for given fabric sample to be able to manufacture the same by weaving processes for fabric production. It is therefore very important course for every textile designers.

### 2. COMPETENCY

The course content is to be taught and practiced with the aim to develop fabric production related skills so that students are able to acquire following competency-

- i. **Create patterns, designs and structures on knitted, woven, non-woven or decorations of fabrics.**

### 3. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				
				Theory Marks		Practical Marks		Total Marks
L	T	P	C	ESE	PA	ESE	PA	
3	0	2	5	70	30	20	30	150

**Legends:** L-Lecture; T – Tutorial/Teacher Guided Student Activity; P –Practical; C – Credit; ESE - End Semester Examination; PA - Progressive Assessment.

**Note:** It is the responsibility of the institute heads that marks for **PA of theory & ESE and PA of practical** for each student are entered online into the GTU Portal at the end of each semester within the dates specified by GTU.

#### 4. DETAILED COURSE CONTENTS

Unit	Major Learning Outcomes	Topics and Sub-topics
<b>Unit I Elements of woven design &amp; Loom Weaving</b>	1a. Identify fabrics as per their structure. 1b. Describe basic weaving operation. 1c. Present weaves patterns on point paper (Design paper).	1.1 Classification of fabric (structure & manufacturing technique) 1.2 Details of fabric structure elements 1.3 Basic operations of loom weaving 1.4 Methods of fabric representation 1.5 Representation of Weave with Design, Draft, lifting plan & denting
<b>Unit II Elementary weaves</b>	2a. Construct and represent the elementary weaves	Construction of Elementary weaves 2.1 Plain weave 2.2 Twill weave 2.3 Sateen and Satin weaves a)Regular Sateen and Satin b)Irregular Sateen and Satin
<b>Unit III Development of weave on Elementary basis</b>	3a. Construct and represent the derivatives of Plain & Twill weaves	Construction of Derivatives of Plain & Twill weave 3.1 Warp Rib weave 3.2 Weft Rib weave 3.3 Hopsack weave 3.4 Basket or Mat weave 3.5 Waved Twill 3.6 Herringbone Twill 3.7 Curved Twill 3.8 Broken Twill 3.9 Transposed or Re-arranged Twill 3.10 Elongated Twill
<b>Unit IV Fancy Twill &amp; Miscellaneous Elementary structures</b>	4a. Construct and represent the Fancy Twill & Miscellaneous elementary weaves	Construction of Fancy Twill & Miscellaneous Elementary structures in the following weaves: 4.1 Diamond weave 4.2 Diaper weave 4.3 Barley Corn weave 4.4 Stitched Hopsack 4.5 Twilled Hopsack 4.6 Crepe weave 4.7 Ordinary Honey comb weave 4.8 Huck-a-back weave 4.9 Mock Leno weave 4.10 Simple Spot Design 4.11 Ork Screw weaves

<b>Unit V Simple Colour &amp; weave effect</b>	5a. Construct and represent the weaves with colour and weave effects	5.1 General considerations of combination of weave with color 5.2 Representation of colour and weave effects upon design paper 5.3 Construction of simple colour & weave effect for a) Continuous line effects b) Hound's tooth patterns (Dog's tooth) c) Bird's-eye and spot effects d) Hair lines e) Step patterns f) All over effects
<b>Unit VI Introduction to weave design software</b>	6a. Describe features of weave design software and its working	6.1 Common weave design software – brief description

### 5. SUGGESTED SPECIFICATION TABLE WITH HOURS & MARKS (THEORY)

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total
<b>I</b>	Elements of woven design & Loom Weaving	03	02	02	02	06
<b>II</b>	Elementary weaves	07	02	04	06	12
<b>III</b>	Development of weave on Elementary basis	10	04	04	08	16
<b>IV</b>	Fancy Twill & Miscellaneous Elementary structures	10	04	04	08	16
<b>V</b>	Simple Color & weave effect	08	04	04	08	16
<b>VI</b>	Introduction to weave design software	04	02	02	00	04
<b>Total</b>		<b>42</b>	<b>20</b>	<b>22</b>	<b>28</b>	<b>70</b>

**Legends:** R = Remember; U= Understand; A= Apply and above levels (Bloom's revised taxonomy)

**Note:** This specification table shall be treated as only general guideline for students and teachers. The actual distribution of marks in the question paper may vary from above table.

## 6. SUGGESTED LIST OF EXERCISES/PRACTICAL

The practical/exercise should be properly designed and implemented with an attempt to develop different types of skills so that students are able to acquire above mentioned competency.

Sr. No.	Unit No.	Practical /Exercises	Approx Hours Required
1.	I	Study basic operations of loom weaving and Representation of Weave with Design, Draft, lifting plan & denting	01
2.	II	Prepare samples on hand loom of “elementary weaves” (at least one sample for each weave)	03
3.	III	Prepare samples on hand loom of “derivatives of plain & twill weaves” (at least one sample for each weave)	07
4.	IV	Prepare samples on hand loom of “fancy twill & miscellaneous elementary structures” (at least one sample for each weave)	07
5.	V	Prepare samples on hand loom of “simple colour & weave effect” (at least one sample for each weave)	07
6.	VI	Analyse the given cloth samples (samples given for different weaves)	02
7.	VI	Explore weave design software	01
		<b>Total</b>	<b>28</b>

## 7. SUGGESTED LIST OF PROPOSED STUDENT ACTIVITIES

- Collection of fabric samples based on its structure (manufacturing technique), types & end uses.
- At least 12 specimens of textile yarns and fabrics to be submitted during the term.

## 8. SUGGESTED LEARNING RESOURCES

### A. List of Books

S.No.	Title of Books	Author	Publication
1	Textile Design & Colour	Watson	
2	Grammer of Textile Design	Nisbet	
3	Elementary Textile Design	J Reat	
4	Design of woven Fabrics	I.Blinor Shibabaw Belay	

### B. List of Major Equipment/ Instrument

- Handloom, fabric analysis kit (pick glass, ruling scale, forcipex plucker)
- Computer System with Internet, LCD Projector, handloom

### **C. List of Software / Learning Websites**

- Searching engines could be used to locate textile related sites
- i. <http://en.softonic.com/s/fabric-design-software>
- ii. <http://www.freedownloadmanager.org/download/free-textile-design-software-605016.html>
- iii. <http://whipup.net/2011/06/26/guide-to-fabric-design-online/>
- iv. <http://www.2000shareware.com/downloads/textile/weaving/software/>
- v. [www.thetextileblogspot.in](http://www.thetextileblogspot.in)
- vi. [www.textileworld.com/](http://www.textileworld.com/)
- vii. [www.youtube.com/](http://www.youtube.com/)

## **9. COURSE CURRICULUM DEVELOPMENT COMMITTEE**

### **Faculty Members from Polytechnics**

- **Prof. A.C. Dalal**, Lecturer in Textile Designing, Govt. Poly for Girls, Surat
- **Prof.(Smt) U. U. Kothari**, Lecturer in Textile Designing, Govt. Poly for Girls, Surat
- **Prof. P. P. Rana**, Lecturer in Textile Designing, Govt. Poly for Girls, Surat

### **Coordinator & Faculty Members from NITTTR Bhopal**

- **Dr. C. K. Chugh**, Professor & Head Electronic Media