GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Engineering

Level: Diploma

Branch: Textile Designing

Course / Subject Code : DI02C59021(Only for C to D Students)

Course / Subject Name : Fabric Design-1

w. e. f. Academic Year:	2024-25
Semester:	2nd
Category of the Course:	PCC

Prerequisite:	Basic knowledge about loom weaving and its function, interest in weave design patterns and willingness to create woven design for fabrics using principles of woven design and fabric structure.
Rationale:	Fabric design is the process of creating patterns, designs and structures for woven fabrics. It involves producing fabric 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. It is a creative field that bridges fashion design, carpet manufacturing and any other cloth related field. 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 subject provides 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 samples to be able to manufacture the same by weaving processes for fabric production.

Course Outcome:

After Completion of the Course, Student will able to:

No	Course Outcomes	RBT Level
01	Interpret the type of given fabric based on its structure.	U & N
02	Create weave design on the point paper.	C
03	Create woven design patterns for elementary weaves.	C
04	Create woven design patterns for derivatives of elementary weaves.	C

**Revised Bloom's Taxonomy (RBT)*

Teaching and Examination Scheme:

Teaching Scheme (in Hours)			Total Credits L+T+ (PR/2)	Assessment Pattern and Marks				Total Marks
				Theory		Tutorial / Practical		
L	T	PR	C	ESE (E)	PA / CA (M)	PA/CA (I)	ESE (V)	
2	0	4	4	70	30	50	50	200

Course Content:

Unit No.	Content	No. of Hours	% of Weightage
1.	**Elements of woven design** 1.1 Working of handloom 1.2 Different types of fabrics (based on structure) 1.3 Details of woven fabric structure 1.4 Elements of woven fabric structure	4	10
2.	**Representation of Weave Design on Paper** 2.1 Methods of fabric representation 2.2 Representation of Weave with Design 2.3 Representation of Weave with Draft 2.4 Representation of Weave with lifting plan 2.5 Making denting plan for weave	4	15
3.	**Elementary weaves** 3.1 Construction of Plain weave 3.2 Construction of Twill weave (Z Twill, S Twill, Warp way Twill, Weft way Twill) 3.3 Construction of Sateen and Satin weaves (Regular Sateen, Irregular Sateen, Regular Satin, Irregular Satin)	6	20
4.	**Development of weave on Elementary basis (Plain Weave)** 4.1 Classification of derivatives of Plain weave	6	20

	4.2 Construction of Rib weave 4.3 Construction of Hopsack weave 4.4 Construction of Basket weave		
5.	**Development of weave on Elementary basis (Twill Weave)** 5.1 Classification of Derivatives of Twill weave 5.2 Construction of Waved Twill 5.3Construction of Herringbone Twill	4	20
6.	**Simple colour and weave effect** 6.1 Representation of colour and weave effect on design paper 6.2 Classification Simple colour and weave effect 6.3 Continuous line effects 6.4 Hound's tooth patterns 6.5 Bird's-eye and spot effects 6.6 Hair lines 6.7 Step patterns and All over effects	6	15
	Total	**30**	**100**

Suggested Specification Table with Marks (Theory):

Distribution of Theory Marks(in %)					
R Level	**U Level**	**A Level**	**N Level**	**E Level**	**C Level**
15	**15**	**25**	**15**	**-**	**30**

Where R: Remember; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create (as per Revised Bloom's Taxonomy)

References/Suggested Learning Resources:

(a) Books:

S. No.	Title of Book	Author	Publication with place, year and ISBN
1	Watson's Textile Design and Colour: Elementary Weaves and Figured Fabrics	William Watson and Z Grosicki	Woodhead CBSPD,1975, New Dehli, ISBN: 978-1855739956

2	Advanced Textile Design and Colour	William Watson and Z Grosicki	Woodhead CBSPD,1977, New Dehli, ISBN: 978-1855739963
3	Grammer of Textile Design	Harry Nisbet	Wentworth Press, 1906, ISBN: 978-1362902478
4	Elementary Textile Design and Fabric Structure	John Read	Read Books, 1931, ISBN:978-1447401100
5	Woven Textile Design	Jan Shenton	Laurence King Publishing, 2014, ISBN: 978-1780673370

(b) Open source software and website:

1. https://www.textileworld.com/
2. https://nptel.ac.in/courses/
3. www.thetextileblogspot.in
4. https://www.textileschool.com/453/woven-design/
5. https://www.youtube.com/watch?v=DdwhvbxMiD4

Suggested Course Practical List:

S. No.	Practical Outcomes (PrOs)	Unit No.	Approx. Hrs. required
1	Draw basic operations of loom weaving.	1	04
2	Represent Weave with Design, Draft, lifting plan & denting on point paper	2	04
3	Prepare weave samples for elementary weave - Plain weave	3	04
4	Prepare weave samples for elementary weave - Twill weave (Warp/ Weft)	3	04
5	Prepare weave samples for elementary weave - Twill weave (S/Z)	3	04
6	Prepare weave samples for elementary weave - Satin weave	3	04
7	Prepare weave samples for elementary weave - Sateen weave	3	04
8	Prepare weave samples for Derivative of elementary weave - Rib weave	4	04

9	Prepare weave samples for Derivative of elementary weave - Hopsack weave	4	04
10	Prepare weave samples for Derivative of elementary weave - Basket weave	4	04
11	Prepare weave samples for Derivative of elementary weave – Waved Twill weave	5	04
12	Prepare weave samples for Derivative of elementary weave – Herringbone Twill weave	5	04
13	Prepare weave samples for Simple colour and weave effect patterns (Continuous line effect/ Hairline effect)	6	04
14	Prepare weave samples for Simple colour and weave effect patterns (Hound's tooth pattern/ Bird's eye effect)	6	04
15	Analyze the given fabric samples for different weaves and interpret its EPI, PPI and weave design.	All	04
	Total		**60**

List of Laboratory/Learning Resources Required:

S. No.	Equipment Name with Broad Specifications	PrO. No.
1	Basic stationary material Pencil, scale, eraser, sketchpen/highlighter etc.	All
2	Fabric analysis kit (pick glass, ruling scale, forcipes plucker)	All
3	Point paper/ Design paper	All
4	Handloom/ Cardboard	All
5	Yarn for weaving, Needle, etc	All

Suggested Project List:

a) Explore weave design software
b) Visit to various weaving units
c) Visit current market and observe weave designs used in various fabrics

Suggested Activities for Students:

a) Collection of fabric samples based on its structure (manufacturing technique), types & end uses.

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