GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Diploma Engineering

Level: Diploma

Branch: Textile Designing

Subject Code : DI04059031

Subject Name : Advance Fabric Design

w. e. f. Academic Year:	2025-26
Semester:	4th
Category of the Course:	PCC

Prerequisite:	Basic knowledge about loom weaving and its function, knowledge about fabric design1 and fabric design 2 subjects with skills to create weave design patterns on paper and woven sample, interest in weave design patterns and willingness to create compound 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, household textiles, towels and decorative textiles. 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 construction of different types of advanced weave design on point paper, fabric structure, as well as analysis of weave design and different fabric parameters for different end uses.

Course Outcome:

After Completion of the Course, Student will able to:

No	Course Outcomes	RBT Level
1	Classify various types of advanced fabric structure.	U
2	Create advanced woven patterns with weave design, draft and lifting plan.	C
3	Interpret the type of given woven structure and create fancy/advanced weave designs.	N, C
4	Create advanced weave design patterns for specific end use applications.	C

**Revised Bloom's Taxonomy (RBT)*

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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(M)	PA(I)	ESE(V)	
3	0	2	4	70	30	20	30	150

Course Content:

Unit No.	Content	No. of Hours	% of Weightage
1.	**Introduction to advanced weave design** 1. Types of advanced weave designs 2. Importance and application of advanced weave designs 3. Analysis of advanced woven fabric structure	4	10
2.	**Development of figured weave designs** 2.1 Types of figures in weave designs 2.2 Construction of figures on design paper 2.3 Insertion of ground weave 2.4 Development of figured weave with extra threads	9	20
3.	**Development of Terry pile weave** 3.1 Introduction to terry pile structure 3.2 Types of terry pile structure 3.3 Construction of terry pile weave on design paper 3.4 Cross section and end use application	10	20
4.	**Development of Velveteen weave design** 4.1 Introduction to Velveteen structure 4.2 Types of Velveteen structure 4.3 Construction of Velveteen weave on design paper 4.4 Cross section and end use application	10	20
5.	**Backed cloth and Doubled cloth** 5.1 Introduction to backed and doubled cloth 5.2 Classification of backed and doubled cloth 5.3 Construction of backed cloth weave on design paper 5.4 Construction of doubled cloth weave on design paper	12	30
	Total	**45**	**100**

Suggested Specification Table with Marks (Theory):

Distribution of Theory Marks (in %)					
R Level	**U Level**	**A Level**	**N Level**	**E Level**	**C Level**
20	**25**	**25**	**5**	**5**	**20**

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

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.	Analysis of various types of advanced fabric structure.	1	03
2.	Prepare a sample for figuring fabric (geometrical design) weave by extra warp.	2	03
3.	Prepare a sample for figuring fabric (free-hand design) weave by extra warp.	2	03
4.	Prepare a sample for figuring fabric (geometrical design) weave by extra weft.	2	03
5.	Prepare a sample for figuring fabric (free-hand design) weave by extra weft.	2	03
6.	Prepare a sample for Terry pile with loops on the face side.	3	03
7.	Prepare a sample for Terry pile with loops on both sides.	3	03
8.	Prepare a sample for the Velveteen fabric structure.	4	03
9.	Prepare a sample for the backed cloth structure.	5	03
10.	Prepare a sample for the doubled cloth structure.	5	03
	Total		**30**

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:

1. Explore weave design software
2. Visit to various weaving units
3. Visit current market and observe weave designs used in various fabrics

Suggested Activities for Students:

i. Collection of fabric samples based on its structure (manufacturing technique), types and end uses.
ii. Work as a designer/team member of a textile design studio.
iii. Creation of woven design as per end use requirement.

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