



SARVAJANIK UNIVERSITY
Sarvajnik College of Engineering and
Technology
Bachelor of Engineering



B E III Textile Technology: Semester –V

Subject Name: Fabric Structure

Subject Code: BTTT13503

Type of course: Professional Core Course

Prerequisite (if any): The students should have basic knowledge about textiles

List of Courses where this course will be prerequisite:

Rationale: Knowledge of Fabric structure blend with Technological innovations is very important for weaving the fabric of different properties suitable for different end use applications. This subject provides the fundamentals necessary to develop design, draft, peg-plan and denting on Point paper. It covers all the basic weaves, weaves derived from basic weaves and fancy weaves. Fabric Structure improves insight and experience.

Teaching and Examination Scheme:

TEACHING SCHEME				Theory Marks			Practical Marks		Total
L	T	P	C	TEE	CA1	CA2	TEP	CA3	
4	0	2	5	60	25	15	30	20	150

CA1: Continuous Assessment (assignments/projects/open book tests/closed book tests CA2: Sincerity in attending classes/class tests/ timely submissions of assignments/self-learning attitude/solving advanced problems TEE: Term End Examination TEP: Term End Practical Exam (Performance and viva on practical skills learned in course) CA3: Regular submission of Lab work/Quality of work submitted/Active participation in lab sessions/viva on practical skills learned in course

BSC: basic science course /ESC: Engineering Science Course /HSM: Humanities and management /PCC: Professional Core course /PEC: professional Elective course /OEC: Open Elective course/ MD: mandatory non-credit course



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Content:

Sr. No.	Content	Total Hrs
1	Elements of woven design: classification of woven fabrics, Representation of Weave, Draft & Peg-Plan on point paper	7
2	Construction of elementary weaves and its features.: Plain Weave, Twill weave, Sateen. & satin weave Influence of twist direction of yarn on appearance of twill line. Rib & cord effect produced by plain weave	8
3	Development of derivative weaves from elementary weaves: All the Derivatives of plain weave, Twill weave and Sateen & satin weaves	8
4	Miscellaneous Elementary structures I : Diamond and Diaper weaves, Crepe weaves, , Distorted Thread effect, simple spot designs	8
5	Miscellaneous Elementary structures II: Derivatives of Hopsack, Mock leno	6
6	Special Rib and Cord structures: Cork-screw Weave, Bedford cords, welts & Piques	7
7	Toweling weaves: Honey comb, Brighton Honey comb, Huck a back	7
8	Figuring with Extra Threads : Principles of Extra Warp & Weft Figuring, stitching by means of Extra Threads	6
9	Simple colour & Weave Effects	3



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Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
8	10	15	7	5	15

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

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

Reference Books:

Sr no	Title of book /article	Author(s)	Publisher and details like ISBN	Year of publication	Publication Edition
1	Watson's Textile Design &Color: Elementary weaves & Figure"	Grosicki Z.	Blackwell Science, 1-85573-995-X 81-85027-11-0	2004	
2	Grammar of textile Design	H. Nisbet	Tarporevala sons &Co. Pvt. Ltd., Wentworth Press	2016	
3	Textile weaving & Design	W.S. Murphy	Abhishek Publications	2012	1

131

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4	Fabric Structure	James Golak			
6	Fabric Structure and Design	N. Gokarneshan	New Age International (P)Limited, Publishers, NewDelhi	2004	
7	Watson`s Advanced Textile Design: Compound Woven Structures	Grosicki Z.	Blackwell Science, 1-85573-996-8 81-85027-12-9 978-1-85573-996-3	2004	4th

Course Outcomes: After learning the course the students should be able to

Sr. No.	CO statement	Marks % weightage
CO-1	Identify & Classify different types of fabric based on their structure also will be able to weave the fabric.	12
CO-2	Construct different designs of basic weaves their draft and peg plan on point paper	20
CO-3	Represent derivatives of plain, twill and Sateen weaves along with their draft and peg plan on point paper. Produce rib and cord structure	20
CO-4	Construct as well as analyze fancy weaves used for toweling, ornamentation and upholstery.	20

132

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CO-5	Construct as well as analyze figuring fabrics.	8
CO-6	Develop innovative fabric designs by using fancy structure & different colour & weave combination	20

Mapping with POs:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3
CO-1	2	1	1	2	1	1	1	0	1	2	2	1	3	3	3
CO-2	2	1	1	2	1	0	1	0	1	2	2	1	3	3	3
CO-3	2	1	1	1	1	0	1	0	1	2	2	1	3	3	3
CO-4	2	1	1	2	1	1	1	0	1	2	2	1	3	3	3
C0-5	1	1	1	1	1	1	1	0	1	2	2	1	3	3	3
C0-6	2	1	1	2	1	1	1	0	1	2	2	1	3	3	3
Rationale*	2	1	1	2	1	1	1	0	1	2	2	1	3	3	3

Rationale*: This subject provides the fundamentals of Fabric structure . Also it covers how design is link with production process and machinery used for that. Hence this subject correlates with PO's in broader sense.

List of Open learning website: <https://nptel.ac.in>, world wide web, Google search Engine etc.

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FOR LAB SESSIONS:

List of Experiments:

1. Weaving samples of plain weave on sample loom/handloom.
2. Weaving samples of Twill Weave on a sample loom/handloom.
3. Weaving samples of Satin/Sateen Weave on a sample loom/handloom
4. Weaving samples of diamond Weave on a sample loom/handloom
5. Weaving samples of Plain weave derivative on sample loom/handloom
6. Weaving samples of twill weave derivative on sample loom/handloom
7. Weaving samples of different colour & weave effect on sample loom/handloom
8. Samples analysis of Plain structure.
9. Samples analysis of Twill structure
10. Samples analysis of sateen/satin structure
11. Samples analysis of fancy structure
12. Sample analysis of warp /weft Figuring fabrics.
13. Samples analysis of Towelling weaves
14. Samples analysis of spot & its distribution in a woven fabric
15. Samples analysis of colour & weave fabric

Major Equipment Needed:

1. Sample Warping
2. Pick Glass/
3. Reed hook
4. Colour/white yarns
5. Handloom