



SARVAJANIK UNIVERSITY
Sarvajani College of Engineering and
Technology
Bachelor of Engineering



B E IV Textile Technology: Semester –VII

Subject Name: TECHNICAL TEXTILES: MANUFACTURING & APPLICATIONS

Subject Code: BTTT13702

Type of course: ~~BSC/ESC/HSM/PCC/PEC/OEC/MD~~ Professional Core Course

Prerequisite (if any): The students should have basic knowledge of fibre, yarn and fabric manufacturing processes

List of Courses where this course will be prerequisite: Nil

Rationale: Technical textiles has witnessed maximum growth rates in India and elsewhere. The application area are widening every year due to efforts of research activity throughout the globe. Recent developments in some of the important segments of technical textiles are covered in this course.

Teaching and Examination Scheme:

TEACHING SCHEME				Theory Marks			Practical Marks		Total
L	T	P	C	TEE	CA1	CA2	TEP	CA3	
4	0	0	5	60	25	15	0	20	100

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

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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

w.e.f. AY 2023-24



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Content:

Sr. No.	Content	Total Hrs
1	Technical Textiles market: an overview Introduction, Definition and scope for technical textiles, Classification, Present market scenario and future	2
2	Nonwoven fabric for technical applications Definition and classification, Dry, wet and polymer-laid nonwovens, Mechanical bonding, Thermal bonding and Chemical bonding, Characteristics, properties applications of various nonwoven fabrics	10
3	Finishing of technical textiles Coating and lamination, Functional finishes: Flame retardant finish, anti-microbial finish, anti-viral finish, water-proof finish	6
4	Medical textiles Introduction, Types and properties of medical textiles, Fibres used, Non-implantable materials, Extracorporeal devices, Implantable materials, Healthcare and Hygiene products,	10
5	Protective textiles Different types, raw material, important properties and applications	6
6	Geotextiles Geosynthetics: material properties, types and essential properties of Geotextiles; Fibre and fabric selection criteria, Function and application areas	7
7	Mobiltech Introduction, Application Areas and Prerequisites of Automotive Textiles, Air bags, Tyre cord fabric, Seat covers, Seat belts, Car insulation materials, Air filter, Brake liner	8
8	Agrotextiles Introduction, factors influencing agricultural activities, key functional properties	6

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	required for agrotextiles, application of nonwovens as agrotextiles, Agrotextiles market.	
9	Other application areas Sporttech, Oekotech, Buildtech, Indutech, Packtech, Clothtech and Hometech; Functions and applications	5
		60

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	Handbook of Technical Textiles	Edited by A R Horrocks and S C Anand	Woodhead Publishing Ltd., ISBN 1 85573 385 4	2000	

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2	Handbook of nonwovens	Edited by S J. Russell	Woodhead Publishing Ltd ISBN-13: 978-1-85573-603-0 (book),,	2007	
3	Handbook of Medical textiles	Edited by V.T.Bartels	The Textile Institute and Woodhead Publishing ISBN 978-1-84569-691-7 (print)	2011	
4	Application of Nonwovens in TECHNICAL Textiles	Edited by R A. Chapman	The Textile Institute and Woodhead Publishing ISBN 978-1-84569-437-1 (book)	2010	



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

Sr. No.	CO statement	Marks weightage	%
CO-1	To understand Technical textiles market	5	
CO-2	To identify technical applications of nonwoven	15	
CO-3	To acquire knowledge about finishing of technical textiles	5	
CO-4	To acquire knowledge about Medical textiles	15	
CO-5	To identify applications of Protective textile, Geotextiles and Automotive textiles	30	
CO-6	To identify applications of Agrotextiles, Sporttech, Oekotech, Buildtech, Indutech, Clothtech, Hometech	30	

Mapping with POs:

	P O 1	P O 2	P O 3	P O 4	P O 5	P O 6	P O 7	P O 8	P O 9	P O 10	P O 11	P O 12	P S O 1	P S O 2	P S O 3
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

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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 Technical Textiles . Also it covers textiles can be used in various walks of life. 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.