

# GUJARAT TECHNOLOGICAL UNIVERSITY

## TEXTILE PROCESSING (28) TECHNOLOGY OF FINISHING-I SUBJECT CODE: 2162805 B.E. 6<sup>th</sup> SEMESTER

**Type of course:** Textile Processing Engineering

**Prerequisite:** Zeal to learn the subject

**Rationale:** This subject introduces the final processing step i.e. finishing to increase the aesthetic appeal of the fabrics. It covers all the types of chemical finishing of natural fibrous textiles like softening, stiffening, weighing, cross-linking, etc. It also covers the functional chemicals finishing like water repellent, Flame retardant, etc finishes.

### Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks						Total Marks
L	T	P		Theory Marks			Practical Marks			
				ESE (E)	PA (M)		ESE (V)		PA (I)	
		PA	ALA		ESE	OEP				
3	0	2	5	70	20	10	20	10	20	150

### Content:

Sr. No.	Course content	Total Hrs.	% Weightage
1	Historical background and Importance of Finishing	02	5
2	<b>Classification of Finishing Process:</b> I. Temporary, Semi Durable, Durable Finishes. II. Mechanical & Chemical Finishes.	01	2
3	Inherent properties and finishing of cotton, linen, rayon, wool, silk and synthetic fibres.	06	14
4	Chemistry and Application of various finishing agents like Stiffeners, Weighting agents, Binders, Softeners, Latexes etc.	10	24
5	Durable and Semidurable finishes like Wash-n-wear, Antishrink (cross linking agents) Waterproof and Water repellent, Flame Retardant, Soil Release and Soil Repellency Finish, Delustring, Coating, Bonding, Lamination, Antipilling, Antistatic, Antimicrobial, Non slip, Anti picking and Anti snagging, Velvet finish, Foam finishing etc.	20	48
6	Perchmentization - chemistry, methods & applications.	03	7

### Suggested specification table with marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
16	16	16	10	04	08

**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:

1. Technology of Finishing - Shenai V. A.
2. An Introduction to Textile Finishing - Marsh J. T.
3. Textile Finishing Prayag - Mrs. L. R. Prayag

### Course outcome:

After learning the content of the subject the students will be able to:

1. Understand the concept, need and significance of finishing.
2. Know about different types of finishes applicable on textiles like chemical, mechanical, temporary, permanent, etc.
3. Understand the mechanism and kinetics of various chemical finishing techniques.
4. Recognize the advantages and disadvantages of different types of finishes.
5. Formulate the other best alternative to get optimum results.

### List of Experiments:

1. To impart temporary stiff finish to the cotton fabric using maize starch.
2. To make a comparative study of various types of starches to produce stiff handle on the cotton fabric.
3. To study the stiffening effect produced by cellulose derivatives on cotton fabric.
4. To impart permanent stiff finish to the cotton and polyester fabric using synthetic stiffening agents.
5. To carry out softening of cotton fabrics using various types of softeners.
6. To carry out softening of Polyester fabrics using various types of softeners.
7. To impart crease resistant and DP finish to cotton fabrics and its evaluation.
8. To impart flame retardancy to various textile materials and its evaluation.
9. To carry out delusturing of lustrous material.
10. To impart water repellent finish on textiles using aluminum soap.

### Design based Problems (DP)/Open Ended Problem:

1. To develop nano based finishing chemicals,
2. To apply functional finishes on textiles.
3. To apply bio finishing on textile.

### Major Equipments:

Water heating bath, HTHP beaker dyeing m/c, padding mangle, spectrophotometer, etc.

### List of Open Source Software/learning website:

1. <http://www.wto.org/>
2. <http://www.wtin.com/>
3. <http://textileinformation.blogspot.in/>
4. <http://www.fibre2fashion.com/>
5. <http://textilelearner.blogspot.in/>
6. <http://www.fashion-era.com/>

**ACTIVE LEARNING ASSIGNMENTS:** Preparation of power-point slides, which include videos, animations, pictures, graphics for better understanding theory and practical work – The faculty will allocate chapters/ parts of chapters to groups of students so that the entire syllabus to be covered. The power-point slides should be put up on the web-site of the College/ Institute, along with the names of the students of the group, the name of the faculty, Department and College on the first slide. The best three works should submit to GTU.