

GUJARAT TECHNOLOGICAL UNIVERSITY

BRANCH NAME: TEXTILE PROCESSING
SUBJECT NAME: GARMENT PROCESSING
SUBJECT CODE: 2172804
B.E. 7th SEMESTER

Type of course: Textile Processing Engineering

Prerequisite: Zeal to learn the subject

Rationale: This subject deals with the study of manufacturing and processing of garments. This subject includes the ornamentation of different types of garments by various art works, embroidery, dyeing printing and finishing. This subject also covers detailed study of manufacturing and processing of denim fabric and garment.

Teaching and Examination Scheme:

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

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment; OEP-Open Ended problem; AL-Active learning.

Content:

Sr. No.	Content	Total Hrs.	Weightage (%)
1.	Introduction to garment processing: Basic need for setting up of garment processing, general principles of garment manufacturing technology including embroidery and traditional art work.	05	12
2.	Raw materials and accessories used for manufacturing garments.	05	12
3.	Pretreatments For Garments: Scouring, bleaching, mercerization and machineries required for these processes.	05	12
4.	Dyeing Of Garments: Type of fabric, dyestuff selection, dyeing with direct dyes, dyeing with eractive dyes, dyeing with sulphur dyes, dyeing with vat dyes, dyeing with azoic pigments, dyeing with pigments.	07	17
5.	Printing of garments: Different styles of printing on garments such as tie & dye, boutique, transfer, direct etc.	04	9
6.	Garment finishing: Finishing of denims, knitted garments, hosiery goods and ready-made garments- Chemical finishes, mechanical finishes, denim washing, laser cutting etc.	06	14
7.	Different machineries for garment processing.	05	12

8.	Difficulties and rectifications in garment processing.	03	07
9.	Advantages and limitations of garment processing.	02	05

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
12	14	14	8	6	16

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. New wave in Garment Exports: Garment Processing (ATIRA) - R.M. Mittal
2. Processing of cotton knitted fabrics (NITRA) - M. Chakraborty
3. AATCC Garment wet processing Technical Manual – AATCC
4. Chemical Finishing (GAPS) (NITRA) - J.V.Rao

Course Outcome:

After learning the course the students should be able to:

1. Understand the garment making technology and its embellishment.
2. Understand the preparatory processes of garment.
3. Understand the dyeing of garment.
4. Understand the printing
5. Understand the various finishing treatments on garments.
6. Understand the complete processing denim fabric and garments.

List of Experiments:

1. To carry out bio-polishing of denim fabric using enzymes.
2. To carry out bio-polishing of denim fabric with the use of acid cellulase combined with softening agent.
3. To impart acid wash to denim fabric using rotary drum washer and using thermocol ball (Ball blast).
4. To produce ice wash effect on denims using potassium permanganate.
5. To carry out denim bleaching with sodium hypochlorite.
6. To carry out dyeing of bleached denim fabric with indigo dye.
7. To carry out dyeing of bleached denim fabric with reactive dye.
8. To carry out dyeing of bleached denim fabric with sulphur dye.
9. To carry out dyeing of knitted polyester fabric with disperse dye.
10. To produce khadi prints on denim fabric for value addition.
11. To produce prints on polyester garment by transfer printing method.

Design based Problems (DP)/Open Ended Problem:

1. To make garment sample to cope the latest fashion.

2. To produce fancy designs on garments by dyeing with different colours.
3. To produce fancy designs on garments by printing.
4. To produce fancy designs on denim garments by different washes.
5. To make a model of garment washing.
6. To make a model of garment dyeing machine.

Major Equipments: Water heating bath, H.T.H.P beaker dyeing machine, Tumble washer, scientific balance 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.