

GUJARAT TECHNOLOGICAL UNIVERSITY

BRANCH NAME: TEXTILE PROCESSING
SUBJECT NAME: DYE HOUSE MANAGEMENT
SUBJECT CODE: 2182803
B.E. 8th SEMESTER

Type of course: Textile Processing Engineering

Prerequisite: Zeal to learn the subject

Rationale: This subject involves requirements of setting up the new dye house. It further includes the idea of consumption and conservation of various basic and allied auxiliaries used for the wet processing. Machine maintenance and audit are the other important section of the subject. The need and role of Information technology is also covered in the same.

Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks						Total Marks
L	T	P		Theory Marks			Practical Marks			
			ESE (E)	PA(M)		PA (V)		PA (I)		
				PA	ALA	ESE	OEP			
3	0	0	3	70	20	10	00	00	00	100

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	Selection of Site for Process House. An Over All Plan for the Building of the Various Departments like Grey Room, Singeing Room, Bleach House, Dye House, Printing Department, Finishing Laboratory, Folding, Stores, Boilers and Power House, etc.	6	14.5
2	Planning / Programming for Every Day Production from Grey Department to Folding Department. Dyes, Chemicals and Other Raw Materials Requirement for the Planned Productions Periodical Stock Checking. Water, Steam and Power Requirements for Planned Production. Quality of Water, Water Treatments, Ion Exchange, Effluent Treatments, Recycling, etc.	6	14.5
3	Methods of Calculations for Consumption of Water, Steam & Electricity.	4	9.5
4	Maintenance of Machinery - Preventive and Breakdown. Importance of Preventive Maintenance. Functions of Maintenance.	4	9.5
5	Energy Conservation Areas - Electrical Energy Conservation, Mechanical Energy Conservation, Optimization and Minimization of Consumption of Dyes and Chemicals, Process Modification. Adoption of Non Conventional Energy Sources, Fuel Consumption and Conservation. Heat Economy and Waste Heat Recovery.	6	14
6	Control and Assessment of Pollution. Pollution Load of Various Chemicals, Air Pollution, Water Pollution, Noise Pollution, Radiation Pollution, Oil Pollution, etc. - Causes And Remedies.	6	14
7	Hazard in the Process House. Fumes of Chemicals, Electrical	5	12

	Hazards, Pressure Vessels-Safety Precautions.		
8	Dye House Management: ERP, MIS, IT, TQM, M/C Auditing Implementations Of ISO 9000 Series, etc.	5	12

Suggested specification table with marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
10	24	16	8	2	10

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. Chemistry of the Textile Industry - C.M. Carr
2. Occupational Health & Safety in Textile Mills - V. A. Shenai
3. Introduction to Management in Dyeing Industry - Park J.
4. Industrial Organization - Teredesai P. L.
5. Energy Conservation in Textile Wet Processing - M. L. Gulrajani

Course outcome:

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

1. Identify the technical knowhow of the site location to establish a dye house.
2. Maintain the machines as well as their auditing of the same can be resumed.
3. Control and conserve various directly and indirectly used auxiliaries.
4. Understand and control the ecological aspects of chemicals use.
5. Prevent hazards occurring due to chemicals or through machines.
6. Make better use of information technology for faster and easier operation.

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.