

# GUJARAT TECHNOLOGICAL UNIVERSITY

## Diploma in Textile Processing Technology

Semester: 3

**Subject Code** 332802

**Subject Name** TECHNOLOGY OF DYEING-I

Sr. No.	Course content
1.	<b>General aspects of Dyeing :</b> 1.1 Definition of colour, Dye, Pigment & Dyeing. 1.2 Colour perception. 1.3 Terminology related to dyeing. eg. Percent shade, self shade, compound shade, M:L Ratio, percent exhaustion, depth & tone etc.
2.	<b>Classification &amp; Selection of dyes :</b> 2.1 Classification of dyes according to Dyeing methods. 2.2 Properties & Nature of different dyes.
3.	<b>Concepts and mechanism of dyeing :</b> 3.1 Various phenomenon of dyeing. 3.2 Theories of Dyeing. 3.3 Dyeing mechanism. - Adsorption - Diffusion - Dye fibre attachment (fixation) - Equilibrium between dye solution & fibre 3.4 Dyeing system- Different types of the bond formation between different dyes and fibres.
4.	<b>Application and mechanism of various dyes on natural and generated fibres :</b> ( Like- cotton, wool, silk, viscose and polynosic fibre- fabrics) 4.1 List the natural and regenerated fibres. 4.2 Selection of different dyes for different fibres e.g. Direct, reactive, indigosol, vat, azoic, sulphur, pigment, acid, basic, Acid mordant, premetalised acid, aniline black, mineral khaki, phthalogen colours. Enlist the banned azo dyes- reasons in general. 4.3 Dissolving method of dyestuff. 4.4 Mechanism of different dyes on above fibres. 4.5 Different Dyeing methods for above fibres. 4.6 Role of different chemicals and auxiliaries used for above process. 4.7 Parameters used for dyeing process. 4.8 After treatments of dyed material. 4.9 Stripping of different dyes.
5.	<b>Dyeing of Denim Warp yarns :</b> 5.1 Preparation of the yarn for dyeing. 5.2 Selection of dyestuffs- eg. Indigo & Sulphur Dyes. 5.3 Dyeing of Cotton yarn with Indigo.

	5.4 Role of Chemicals and Auxiliaries. 5.5 Machineries for Indigo dye- eg. Rope form dyeing machine & sheet form dyeing machine. 5.6 Prerequisite for continuous Indigo dyeing range. 5.7 Precaution to be taken during dyeing with Indigo dyeing machines. 5.8 Merits & Demerits of above machines. 5.9 Garment dyeing.
<b>6.</b>	<b>Machineries used for dyeing :</b> (Fibre, Yarn & Fabrics) 6.1 Principles of dyeing machine construction. 6.2 Dyeing machineries for natural and regenerated fibre. 6.3 Dyeing machineries for natural and regenerated Yarn. 6.4 Dyeing machineries for natural and regenerated Fabric. 6.5 Merits and demerits of different machines.
<b>7.</b>	<b>Faults and their remedies in dyeing related to dyeing machineries :</b> 7.1 State the various Faults of dyeing related to jigger, winch and padding Mangle. 7.2 Causes of Faults related to jigger, winch and padding mangle. 7.3 Remedial process of the above Faults.

### **REFERENCE BOOKS:**

<b>Sr. No.</b>	<b>Name of Books</b>	<b>Authors</b>
<b>1.</b>	Technology of Dyeing	Dr. V. A. Shenai
<b>2.</b>	Cotton Piece Dyeing	ATIRA
<b>3.</b>	Dyeing and Chemical Technology of Textile Fibre	E. R. Trotmann
<b>4.</b>	Rapid Effective Dyeing	Shirely Institute
<b>5.</b>	Chemistry of Synthetic Dyes	K. Venkat Raman
<b>6.</b>	Denim-fabric for all	Dr. M. S. Parmar Shree S. S. Satsangi Dr. Jai Prakash