

# GUJARAT TECHNOLOGICAL UNIVERSITY

## Diploma in Textile Manufacturing

Semester: 3

**Subject Code** 332902

**Subject Name** WEAVING TECHNOLOGY – I

Sr. No.	Course content
1.	<b>INTRODUCTION OF WEAVING PROCESS :</b> 1.1 Introduction of weaving process, it's terminology and objectives of each process
2.	<b>WINDING PROCESS :</b> 2.1 Objects of winding 2.2 Classification of winding machines 2.3 Study of passage of yarn in Auto-winding m/c. and introduction of important parts. 2.4 Detail study of yarn tensioning device, traverse mechanism and stop motion. 2.5 Automation in winding Study of knotter, Splicer, Electronic yarn clearer, Auto feeding device ( Caddy system ) and Informator- in built 2.6 Effect of winding parameters on subsequent processes 2.7 Routine maintenance of winding machines 2.8 Calculations pertaining to winding processes
3.	<b>STUDY OF AUTOMATIC PIRN WINDING M/C :</b> 3.1 Bunch formation 3.2 Traverse mechanism 3.3 Tensioners 3.4 Stop motion 3.5 Pirn Changing device 3.6 Production calculations
4.	<b>WARPING :</b> 4.1 Objects 4.2 Classification 4.3 Study of warping m/c and sections of warping m/c. 4.4 High speed warping m/c with Automatic knotting on creel. 4.5 Warping calculations. 4.6 Routine maintenance in warping
5.	<b>BASIC MECHANISM OF WEAVING M/C (LOOM) :</b> 5.1 Fabric Manufacturing process on loom with passage on shuttle loom 5.2 Shedding Mechanism 5.2.1 Types of shed 5.2.2 Introduction to types of shedding : (a) Tappet (b) Dobby (c) Jacquard 5.3 Detail study of tappet shedding

	<p>5.3.1 Study of positive and negative shedding.</p> <p>5.3.2 Heald reversing motion.</p> <p>5.3.3 Heald Staggering.</p> <p>5.3.4 Timing and setting - Dwell period, effect of early and late shedding on fabric quality</p> <p>5.4 Picking &amp; Checking Mechanism.</p> <p>5.4.1 Introduction to types of picking mechanism i.e. for shuttle loom and shuttle less loom</p> <p>5.5 Detail study of picking mechanism on shuttle loom.</p> <p>5.5.1 Over pick, under pick</p> <p>5.5.2 Shuttle checking</p> <p>5.5.3 Factor effecting on picking force</p> <p>5.5.4 Timing and setting</p> <p>5.6 Beatup Mechanism (shuttle loom) .</p> <p>5.6.1 Eccentricity in slay motion</p> <p>5.6.2 Timing diagram</p> <p>5.6.3 Settings</p> <p>5.7 Let off Motion.</p> <p>5.7.1 Principle of let off motion</p> <p>5.7.2 Types of let off motion (Introduction)</p> <p>5.8 Detail study of negative let off motion.</p> <p>5.8.1 Mechanism of negative let off motion.</p> <p>5.8.2 Timing &amp; Setting of let off motion.</p> <p>5.9 Take up Motion.</p> <p>5.9.1 Principle of Take up motion</p> <p>5.9.2 Types of Take up motion (Introduction)</p> <p>5.10 Detail Study of 7 Wheel Take up motion.</p> <p>5.10.1 Mechanism of 7 Wheel take up</p> <p>5.10.2 Timing , setting &amp; dividend</p> <p>5.11 Warp Protector Motion.</p> <p>5.11.1 Loose reed mechanism</p> <p>5.11.2 Fast reed mechanism</p> <p>5.12 Weft stop motion.</p> <p>5.12.1 Side weft fork motion &amp; its setting</p> <p>5.12.2 Centre weft fork motion &amp; its setting</p> <p>5.13 Grey fabric defects, its causes and remedies. [for shuttle loom]</p> <p>5.14 Production calculation of loom.</p> <p>5.15 Routine Main tenance of loom.</p>
<b>6.</b>	<p><b>DOBBY :</b></p> <p>6.1 Need and classification</p> <p>6.2 Construction and working of following dobbies</p> <ul style="list-style-type: none"> <li>- Keighley dobby</li> <li>- Climex dobby</li> <li>- Cam dobby</li> <li>- Paper dobby</li> <li>- Electronically controlled dobby</li> </ul> <p>6.3 Dobby cloth defects and its remedies</p>

### **LABORATORY EXPERIENCES :**

<b>Sr No</b>	<b>Name of Topic</b>
1	Passage of yarn and cloth on power loom
2	Over Pick Motion
3	Beat up Motion
4	Negative Let-off Motion
5	Take up Motion
7	Tappet Shedding
8	Cone Under Pick Motion
9	Side weft Fork motion
10	Loose and Fast Reed motion
11	Brake motion
12	Passage of warp through high speed winding m/c
13	Passage of yarn through BC Spooler
14	Passage of yarn through Pirn winding m/c
15	Mechanical and Electrical yarn clearer
16	Passage of warp through high speed Warping m/c
17	Passage of warp through high speed sectional Warping m/c
18	Measuring Motion in warping m/c
19	Thread stop motion in Warping m/c
20	Principle and function of parts of Dobby shedding
21	Principle and working of paper dobby
22	Principle and working of Climax dobby
23	Principle and working of Keighley dobby
24	Principle and working of Cam dobby
25	Principle and working of Electronically controlled dobby

### **REFERENCE BOOKS:**

1. Primary motions Middle brook.
2. Yarn preparation Vol. I & II. - Sengupta
3. Secondary motion Middle brook.
4. Weaving Mechanism T.W.Fox
5. Weaving Mechanism Bannerji
6. Principle of weaving Mark & Robinson
7. Weaving m/c, Material & Management By D.B.Ajgaonkar & Talukdar.