GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. Semester: II

M.E. TEXTILE ENGINEERING

Subject Name: **Theory and Design of Textile Machinery- II**

Sr.No	Course content
1.	**Winding**: Theory of winding. Theory of yarn clearing and tensioning. Winding machines. Pirn build and conditions of yarn sloughing.
2.	**Warping**: Theory and design of direct and sectional warping. Yarn content on sectional warping.
3.	**Sizing**: Design of sizing machine - creel, size box, drying, headstock and controls. Single end sizing. Other methods of sizing.
4.	**Loom Shuttle:** Principles governing the design of looms. Mechanics of basic weaving operation, kinematics of sley and heald motions. Theoretical analysis of picking and checking mechanism on loom. Analysis of beat up force. Warp and cloth control.
5.	**Shuttleless**: Gripper projectile picking. Theory of air jet picking. Concept of nozzle designing. Air drag, propelling force. Reduction in consumption of air. Water jet picking. Rapier picking - theory and practice. Rapier drives. Multiphase, triaxial, 3-D composite. New designs of warp and cloth control. Stop mark prevention systems, control through microprocessor.

Reference Books:

1. Weaving: Conversion of Yarn to Fabric - Lord etc
2. Weaving: Technology & Operations - Ormerod A.
3. Principles of Weaving - Marks & Robinson
4. Series publications of NCUTE Training Programs
5. Modern Preparation & Weaving Machinery by A. Ormerod.
6. Warp Sizing by J.B. Smith.
7. Textile Maths Vol-III by J.E. Booth.