

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. Semester: II

M.E. TEXTILE ENGINEERING

Subject Name: **Advance Fiber Properties (Major Elective-III)**

Sr.No	Course content
1.	Mechanism of deformation in fibres. Principles of elasticity. Visco elasticity, Stress - strain relation. Creep, stress relaxation, Time - temperature effects and dynamic mechanical properties. Quantitative theoretical interpretation of mechanical behaviour. Thermodynamic analysis of mechanical deformation. Reaction rate theory applied to the relative moment of the long chain molecules in fibres.
2.	Anisotropy. Determination of Poisson ratios, bending and torsional rigidity of fibres and their determination.

Reference Books:

1. Physical Testing of Textiles by B.P. Saville
2. Textile Fibres Yarns and Fabrics – Kaswell E.R. published by Reinhold Publishing Corporation – New York, 1954.
3. Structural Mechanics of fibres, yarns & fabrics by Hearle, Grosberg and Backer.
4. Physical Properties of Textile Fibres – Morton W.E. and Hearle J.W.S. published by The Textile Institute Manchester.