

(Textile Engineering Department)

Graduate

Course Title: **Structural Mechanics of Yarns**

Lecturer: **Dr. Majid Safarjohari**

Course Topics:

- Theoretical analysis of yarn geometry
- Theory of extension of continuous filament yarns
- Analysis of tensile forces, Stress - strain relations of the filaments
- Effects of large extensions , Filament behavior at large extensions
- Analysis of yarn mechanics by energy method
- Analysis of tensile behavior , prediction of breakage
- Load Extension curve near break , Tenacity ,Breaking extension , Initial modulus, Work of rupture

Reading Resources:

- J.W.S. Hearle, P. Grosberg and S. Backer, Structural Mechanics of Fibers, Yarns and Fabrics, Wiley Interscience, New York, 1969.
- B.C. Goswami, J. Martindale and Scandio, Textile Yarns: Technology, Structure and Application, Wiley Interscience, New York, 1977.