

**Department of Fibres and Textile Processing Technology**  
**Syllabus for Ph. D. (Textile Chemistry) Entrance examination (2024-2025)**

**Polymers and Fibres:** Fibre forming polymers and their properties, Primary and secondary properties of fibres, Classification of fibres, Natural fibres and their properties, Synthetic Fibres, their synthesis and properties, swelling of fibres, micro denier fibres, Recent trends governing the fibre modifications, Identification of fibres.

**Pretreatments:** Desizing, scouring and bleaching of natural and synthetic fibres/fabrics, Oxidative and reductive bleaching agents, Hypochlorite and Hydrogen peroxide bleaching, Ecofriendly pretreatment processes, Continuous and combined pretreatment processes & Machinery, Pretreatment norms and their evaluation.

**Colouration :** Classification of colourants, Dyestuffs for natural and synthetic fibre/fabric and their application processes, Natural dyes and their application, Various dyeing machineries, Latest dyeing machines and dyeing techniques, Computer Colour Matching application, Basics of Printing of textiles, Ingredients of Print paste formulations and their relevance, Styles of printing, Methods of printing, Fixation of prints, Latest printing machines and printing techniques.

**Finishing:** Finishing of textiles, Chemical & Mechanical finishes, Speciality/Functional finishes, Application processes of finishing agents and their testing.

**Testing:** Physical/Mechanical testing of fibre/fabric, Wet fastness properties of dyed and printed textiles, Global test methods like ASTM, AATCC, ISO, etc, Testing of textile auxiliaries, Standard equipments to be used for testing of textile, parameters of importance, Methods for evaluation of auxiliaries as well as for their effectiveness or activity.

**Environmental aspects of Textile Processing:** Discharges from textile processing industry, its characteristics and treatment, Banned dyes, Red listed chemicals and their Eco friendly substitutes.