

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E. Semester: III

Textile Engineering

Subject Name: **Technical Textile (Major Elective - IV)**

Subject Code: **732502**

Sr. No	Course content	Hrs
1.	Introduction to technical textiles. Basic idea about various uses. Brief introduction to woven, knitted and nonwoven fabrics.	5
2.	Introduction to nonwoven manufacturing. Various methods for web formation and bonding.	5
3.	Filtration: Textile and other filter media for dry and wet filtration. Mechanisms of separation. Requirements for good filter media and filtration. Fibre and fabric selection for filtration.	5
4.	Geotextiles: Types and application of geosynthetics. Functions and application areas of geotextiles. Fibres and fabric selection criteria for geotextile applications. Mechanics of reinforcement, filtration and drainage by geotextiles. Soil characteristics.	6
5.	Application of textile in medical. Nonimplantable materials, implantable materials, extracorporeal devices, health care / hygiene products.	6
6.	Application of textile in transportation. Use in cars and other road vehicles, textiles in air craft.	5
7.	Application of textile for protection. Intelligent textiles for protection. Sensor function, actuators, communication, wearable motherboards, data processing etc.	5
8.	Coated textiles. Polymeric materials for coating like natural & synthetic rubbers, PVC, PU, acrylic polymers, foams for laminates etc. Coating methods like knife, roll, dip, transfer, screen, hot melt etc.	8

Text Books:

1. Handbook of Technical Textiles, Horrocks & Anand
2. Textile for protection, Richard A. Scott
3. Coated Textiles: Principles & Applications, A. K. Sen

Reference Books:

1. The Textile Institute Advances in Fibre Science by S. K. Mukhopadhyaya
2. Textile Fibres: Developments & Innovations Vol. 2 by V. K. Kothari
3. S.Adanur "Wellington Sears Handbook of Industrial textiles",
4. Mukhopadhyay, S.K. and partridge J.F,' Automotive Textiles', Text.Prog, Vol. 29, No.1/2