

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. SEMESTER: IV

TEXTILE TECHNOLOGY

Subject Code: 742501

Subject Name: **Advance Topics in Textile Manufacturing**

Sr. No.	Topic	Hrs
1	New generation fibres ó artificial fibres by biomimetics, super fibres, high functionality fibres, health, comfort and nutrition fibres, nano fibres.	6
2	Design of Apparel fabrics: role of fiber, yarn and fabric parameters on its functional attributes. Designs based on structure and material properties. Concept of an over all designing procedures.	6
3	Introduction to Science of Clothing Comfort, Psychology and Comfort, Neuro physiological Processes of Clothing Comfort, Transmission: Thermoregulatory Mechanisms of human body, Heat Transfer Theories, Thermal Conductivity of Fibrous Transient heat transfer mechanism: the warm-cool feeling, Moisture Transmission : Liquid and Vapour, Liquid Moisture transfer through fibrous materials	10
4	Introduction to plasma processing ó The potential of plasma technology in the textile industry, Plasma reactors, Low-pressure plasmas, Atmospheric pressure plasmas, Effect of plasma on fibres and polymers, Plasma finishing of textiles	5
5	Shape memory polymers - Concepts, SMAs, SMPs, Principle of temperature dependent shape memory polymers, Applications of shape memory polymers.	5
6	Introduction to Intelligent textile for personal protection, safety, environment protection etc.	4
7	Smart technology for textiles and clothing ó a brief introduction and overview. Smart clothing technology ó interface technology, communication etc., human aspects like usability, durability etc., applications like body monitoring, entertainment etc.	6
8	Any one module on the latest developments.	3
	Total	45

References

1. **New millennium fibers** by Tatsuya Hongu, Glyn O. Phillips and Machiko Takigami
2. **The Design Logic of Textile Products** by T. Matsuo & M. N. Suresh
3. **Science of Clothing Comfort** by Apurva Das
4. **lasma Technologies for Textiles** by R L Shishoo

5. Shape memory polymers and textiles by Jinlian HU

6. Smart Clothing: Technology and Applications by Gilshoo Cho

Practical

Practical shall be based on the prescribed syllabi