

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. SEMESTER: IV

TEXTILE TECHNOLOGY

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

| Sr. No. | Topic | Hrs |
|---------|--|-----------|
| 1 | New generation fibres ó artificial fibres by biomemetics, 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