TEXTILE PRODUCT DESIGN AND DEVELOPMENT

PROF. R CHATTOPADHYAY
Department of Textile & Fibre Engineering
IIT Delhi

PRE-REQUISITES : 7th/8th Semester BE, BE, All core textile courses up to 6th semester

INDUSTRIES APPLICABLE TO : All industries involved in product development

COURSE OUTLINE :
Textile Product Design and Development course will focus on functional and ergonomics design aspects of textile products. Design basic, need/ requirement analysis, need – metric matrix, specification development and concept generation, product architecture, use of natural analogy, material selection (fibres, blends, yarns, fabrics, etc.) will be discussed. Application of mathematical models, performance – property relationship, estimation of design parameters (cords, technical fabrics, protective clothing, pressure garment, absorbent textile, filter fabrics, geotextile, etc.) will be taken up. Practical examples and case studies on technical products will be given.

ABOUT INSTRUCTOR :
Prof. R Chattopadhyay, past Head of Department of Textile and Fibre engineering, IIT Delhi, has been teaching in the department for last 30 years. He has been publishing papers in national & international journals, presenting papers in national and international conferences, reviewing papers, consulting industry. He is associated with Govt. organization, research institutes and academic institutions of the country. He has developed this course on Textile Product Design and Development for the senior UG and PG students of the department and offering the course for more than 10 years.

COURSE PLAN :
- Week 1: Introduction, Design Procedure
- Week 2: Customer need, Specification Development
- Week 3: Concept Generation and Selection, Material Selection
- Week 4: Product Architecture, Fibre Property and its significance
- Week 5: Yarn property and its significance, Fabric Property and its significance
- Week 6: Finishing treatment
- Week 7: Relationship between fibre, fabric and finishing
- Week 8: Ergonomics,
- Week 9: Heat exchange
- Week 10: Thermal Properties of clothing
- Week 11: Thermal Comfort
- Week 12: Technical Fabric Design