



TEXTILE PRODUCT DESIGN AND DEVELOPMENT

PROF. R CHATTOPADHYAY

Department of Textile & Fibre Engineering
IIT Delhi

TYPE OF COURSE : New | Elective | UG/PG

COURSE DURATION : 12 weeks (24 Jan' 22 - 15 Apr' 22)

EXAM DATE : April 23, 2022

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

INTENDED AUDIENCE : Nil

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 relation ship , 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 , presying 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