PTFE 4100 CHEMICAL PROCESSING OF TEXTILE MATERIALS
Credit: 2-0-2

Course Coordinators: **Dr. Haskell Beckham and Dr. Fred L. Cook**

Prerequisites: PTFE 2200

Catalog Description: The chemical, thermal, and mechanical processes used in the preparation, coloration, and finishing of textile structures.

Course Learning Objectives:
1. Learn the basic science and engineering concepts on which textile finishing processes are based.
2. Gain an understanding of current industrial practice in textile chemical, thermal, and mechanical processing of fabrics.

Textbook:
T.L. Vigo, Textile Processing and Properties, Elsevier Science, Amsterdam, 1994

Topical Outline of Lectures
1. Materials in Textile Finishing
2. Purification Processes
3. Dyeing Processes—Theory
4. Dyeing Processes—Practice
5. Dyeing Equipment
6. Printing
7. Evaluation of Dyed and Printed Fabrics
8. Finishing Processes

Course Outcomes: Specifically, at the end of the course the students will be able to:
1. Demonstrate an understanding of the physical chemical principles underlying chemical processing of textile products. [1, 3, 4, 7, 8, 9, 10, 11, 12]
2. Participate with other professionals in the design and construction of chemical processing systems for textiles. [1, 3, 4, 5, 7, 10, 12]
3. Develop an appreciation for available information resources and then use in continuing learning. [1, 11]
4. Act as a process engineer in textile chemical processing facility. [1, 2, 3, 4, 7, 9, 10, 11]

* Numbers in Brackets refer to PFE Program Outcomes to which the Course Outcomes relate.

Topical Outline of Course

1. Materials and Water Quality in Chemical Applications
2. Purification Processes
3. Coloration Processes—Theory
4. Coloration Processes—Practice
5. Printing Processes
6. Evaluation of Dyed and Printed Fabrics
7. Finishing Processes
8. Process Equipment and Engineered Systems