

## TXMI 8120 Polymer Sciences (High Tech Polymers and Fibers)

Meets T, TH at 12:30 to 1:45 in room 308 of Dawson Hall

Taught by Dr. Ian Hardin, Georgia Power Professor of Textile Science.

Course Description: Students will be actively involved in literature and industrial information research on technical and hi-tech polymers, fibers and textiles. The chemistry, physics and engineering of these high tech products will be covered. Students will also be actively involved in presentations of their research. The subjects covered will give students an idea of the role of creative thinking and innovation in the growth of a sector of the fiber business that is now approaching 50 percent in profit-added value.



This course will focus on technical and hi-tech textiles. The topics will include many of the following

- a. Geotextiles
- b. Protective textiles- protection from fire, ultraviolet and other electromagnetic radiation, and ballistic penetration
- c. Fibers from recycled materials
- d. Fibers and fabrics for filter media
- e. Nanofibers and their uses

- f. Antimicrobial fibers and fabrics*
- g. Photochromic textiles*
- h. Self-cleaning textiles*
- i. Polymers and fibers with controlled biodegradation*
- j. Fibers and fabrics for automotive uses, including airbags*
- h. Fibers and fabrics used in construction*
- i. Conducting fibers for technical and smart textiles*
- j. Medical applications for specialty fibers and fabrics*

Grading:	One mid-term	200 points
	Final exam	300 points
	One major paper	200 points
	<b>Total possible</b>	<b>700 points</b>