

# **Georgia Tech Library Collection Development Policy (Draft)**

## **School of Polymer, Textile & Fiber Engineering**

**2004**

### **Collection Development Objectives**

The Library & Information Center at Georgia Institute of Technology supports faculty and student research and the curriculum through doctoral degree level in the discipline of Polymer, Textile & Fiber Engineering; it also supports research projects and programs conducted on behalf of faculty researchers, research engineers, and research scientists in the School's various laboratories and research centers.

### **School Profile -- Overview**

The School of Polymer, Textile & Fiber Engineering is one of nine schools in the College of Engineering. The School has 11 primary faculty members, including 5 Associate Professors and 6 Professors. In addition there are 2 Emeritus Professors, 4 Research Scientists, and one Research Associate.

#### School Chair

Anselm Griffin

Professor & Chair

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#### Group Email Address

None

#### School Web Site

<http://www.ptfe.gatech.edu/>

#### Library Committee or Chair

None

#### Professional Accreditation

The School is accredited by the Accreditation Board for Engineering and Technology (ABET).

### **School Profile – Curriculum**

#### Enrollment

<b>Undergraduate Enrollment</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
Polymer & Fiber Engineering	123	89	84	85	67	79	65	86	101	n/a
Polymer & Textile Chemistry	57	39	37	34	27	20	17	18	8	n/a
Textiles/Textile Ent. Mgt.	34	23	28	27	20	15	13	9	9	n/a
<b>Total</b>	<b>214</b>	<b>151</b>	<b>149</b>	<b>146</b>	<b>114</b>	<b>114</b>	<b>95</b>	<b>113</b>	<b>118</b>	<b>n/a</b>

<b>Graduate Enrollment</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
Textiles	4	4	3	6	-	-	-	-	-	n/a
Textile and Fiber Chemistry	7	6	5	5	5	3	2	1	-	n/a
Textile and Fiber Engineering	52	57	39	35	39	35	25	29	35	n/a
<b>Total</b>	<b>63</b>	<b>67</b>	<b>47</b>	<b>46</b>	<b>44</b>	<b>38</b>	<b>27</b>	<b>30</b>	<b>35</b>	<b>n/a</b>

Data from the Georgia Institute of Technology [2003 Fact Book](#), tables 4.17, 4.18.

### Degrees offered

<b>Bachelor Degree -- B.S.</b>	<b>Master Degree -- M.S.</b>	<b>Five Year B.S.-M.S. Program</b>	<b>Doctoral Degree -- Ph.D.</b>	<b>Undergraduate Certificates</b>	<b>Other</b>
Polymer and Fiber Engineering (Polymer Track)	Polymers	Polymer and Fiber Engineering	Textile Engineering	Certificate Program in Fiber Enterprise Management	Minor Program in Fiber Enterprise Management
Polymer and Fiber Engineering (Fiber Track)	Textile & Fiber Chemistry			Multidisciplinary Certificate Program in Polymer Engineering and Polymers	
	Textile & Fiber Engineering				

### Undergraduate Program Educational Objectives:

- Graduates will have a strong foundation in the fundamental aspects of polymer and fiber formation processes, structures, and properties.
- Graduates will know the basic principles for selecting and designing structures and processes to meet the desired end-use applications.
- Graduates will be prepared for engineering positions in the Polymer, Fiber, and Textile Products (PFTP) Industrial Complex.
- Graduates will be prepared to enter graduate school for advanced study and research.

Graduate Programs Educational Objectives: The programs are designed to prepare M.S. and Ph.D. engineers and scientists for modern careers in textile product and process development, polymer science, research and quality control. Graduates also participate in the design, development and manufacturing of a broad range of fiber-based and polymer-based products and systems. It is designed to appeal to students with backgrounds in Science and Engineering.

## Degrees Awarded

<b>Bachelor's Degrees</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
Textiles	8	11	4	6	7	-	-	-	-	n/a
Polymer & Textile Chemistry	5	8	7	5	7	6	8	1	6	n/a
Textile Engineering	23	31	14	20	16	6	-	1	-	n/a
Textile Enterprise Management	-	-	-	-	-	6	3	4	1	n/a
Textile & Fiber Engineering	-	-	-	-	-	6	9	6	11	n/a
<b>Total</b>	<b>36</b>	<b>50</b>	<b>25</b>	<b>31</b>	<b>30</b>	<b>24</b>	<b>20</b>	<b>12</b>	<b>18</b>	<b>n/a</b>

<b>Master's Degrees</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
Polymers	5	12	9	4	12	1	3	-	2	n/a
Textiles	0	2	0	1	2	-	-	-	-	n/a
Textile & Fiber Engineering	9	7	11	7	3	5	4	5	6	n/a
Textile & Fiber Chemistry	0	4	2	2	4	2	1	-	1	n/a
<b>Total</b>	<b>14</b>	<b>25</b>	<b>22</b>	<b>14</b>	<b>21</b>	<b>8</b>	<b>8</b>	<b>5</b>	<b>9</b>	<b>n/a</b>

<b>Ph.D Degrees</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
Textile Engineering	4	3	4	0	2	5	5	5	3	n/a

Data from the Georgia Institute of Technology [2003 Fact Book](#), tables 5.6, 5.7, 5.8.

## General Education Course Responsibility (if applicable)

None

## **School Profile -- Research**

### Major Faculty Research Interests

#### Composites

- Characterization of Mechanical Properties and Fracture
- High Performance Materials
- Manufacturing of Textile Composites
- Mechanics
- Structures and Properties of Composites

#### Computers

- Automatic Defect Detection
- Computer Aided Problem Solving
- Computer Applications (CAD / CAM)
- Development of Real-Time Monitoring Control Systems of Textile Processes
- Intelligent Multimedia and Tutoring Systems
- Knowledge Based Systems / Artificial Intelligence
- 3-D Woven Structures for Composites

#### Physical Properties

- Analysis of Materials
- Mechanical Testing

- Fiber Formation
- Fiber Properties
- Instrumental Color Measurements
- Mechanics of Textile Structures
- Morphology
- Phase Transitions
- Physics
- Polymers
- Thermal Sciences

#### Polymers

- Blends
- Characterization
- Crosslinking
- Crystallization
- Kinetics
- Liquid Crystals
- Molecular Modeling
- Molecular Structure
- Monomer Synthesis
- Morphology
- Orientation Studies
- Physics
- Solid State NMR and MRI
- Textile Chemistry
- Porous Properties
- Recycling
- Structures and Properties of Polymers, Fibers, and Composites
- Synthesis

#### Processes

- Analysis of Materials
- Electrophotographic Printing
- Engineering Design and Analysis of Textile Structures and Processes
- Image Processing
- Optimization of Textile Manufacturing Processes
- Synthesis of Polymers
- Textile Processes

#### Specialty Studies

- Carbon Fibers
- Electronic Sensor Development
- Electrotechnologies
- Energy Systems
- Enterprise Modeling Methodologies
- Experimental Design
- Geotextiles
- Heating / Drying of Textiles and Carpet
- High Performance Fibers
- Infrared Absorption Characteristics of Textiles and Carpet
- Information Engineering
- Kawabata Evaluation of Fabric Properties
- Mechanics

- Microscopy (CAROM)
- Molecular Modeling
- MRI of Fluids in Textiles
- PBO
- Photonics
- Photovoltaics
- Thermal Sciences
- Wetting and Spreading
- Ultrasound Effects on Textile Wet Processing
- Utilization of Carpet Industrial Waste for Concrete

### New and Expanding Areas of Interest

None

### Research Centers

- Electrostatic Powder Deposition Laboratory -incorporates solid-on-solid methods for applying certain chemicals to textiles without the use of liquids. Technologies that are utilized include: electrostatic fluidized bed technology; powder spray gun technology; electrostatic liquid spray technology; and equipment for color xerography printing of textiles. By eliminating the necessity of water in textile processing, the solventless route reduces energy consumption, eliminates pollution, reduces dependency on shrinking water supplies and increases productivity.
- Thermal Analysis Laboratory -The School of Polymer, Textile and Fiber Engineering maintains Seiko thermal analysis modules (DSC, TG/DTA. and DMS) in MRDC 4332 for authorized users.

### **Collection Development Responsibility** [to be discussed in July 2004]

**Classed Analysis (based on Library of Congress classifications)** [to be discussed in fall 2004]