

Collection Policy: TEXTILES & APPAREL

[Subject Scope](#) | [Priority Tables](#) | [Other policies . . .](#)

1.0 TEACHING, RESEARCH AND EXTENSION PROGRAMS

1.1 *Mission and emphases of the department*

The Department of Textiles and Apparel (TXA) focuses on the use of textiles and fibrous material for apparel, durable and nondurable household goods, composites, geotechnical, and biomedical applications. Programs in the department, in keeping with the overall mission of the college, emphasize the use of materials to meet human needs. The curriculum includes the application of design principles, physical and materials science, economics and marketing, government policy/regulation, management of products and their delivery, and technological developments.

Practical problem-solving skills are developed in the department's laboratories and studios. Academic course work is further enhanced by field and international experiences. Gallery space provides the setting to display design work. In addition, the Cornell University Costume Collection, housed in the department, provides a valuable resource; items from the collection are made available to students for classroom and special-study use.

The department has distinguished itself by publications and presentations to national and international audiences in the fields of fiber science, functional apparel design, computer-aided design, apparel production, and the environmental effects of textile processing wastes.

1.2 *Faculty research*

Number of faculty and research associates: 13

Fiber Science

- Fiber reinforced composites
- High performance fibers
- Adhesion
- Geotextiles and geosynthetics
- Biodegradable polymers and fibers for medical devices
- Fiber physics

Textile Chemistry

- Chemistry of high, linear polymers and fibers
- Physical and chemical characterization of fibers
- Textile dyeing and finishing
- Manufacturing and processing of fibers and fabrics
- Detergency and fabric care
- Fabric performance and utilization

Apparel Design

- Functional apparel design
- Protective clothing design: chemical protective clothing, sports equipment
- Clothing pressure as it relates to physiological health
- Clothing for the elderly
- Human factors, anthropometrics, sizing and fit of apparel
- Computer-aided apparel design
- Custom fit, perception of apparel fit, visual analysis of apparel fit

Apparel Production Technology

- Use of automation and robotics in the apparel industry
- Control systems for apparel machinery
- Computer modeling of fabrics and apparel

1.3 *Graduate program*

Number of students: 25

Geographical mix: At present, there are students from the United States, China, Turkey, Korea, India, and Yugoslavia pursuing graduate studies in the department.

Areas of concentration:

Fiber Science
 fiber science
 polymer science
 textile science
Apparel Design
 apparel design
 clothing

Distinctive emphasis of the graduate program: The Field of Textiles focuses on the study of fibrous materials and their use, as engineering structures such as composite materials, in bio- medical applications, in apparel, and in home furnishing. The Field of Textiles is applied and multidisciplinary.

1.4 Undergraduate program

Number of majors: 85-90

Apparel Design

Career interest: Some graduate pursue careers in highly specialized fields, designing protective apparel for astronauts, mountaineers, athletic competitors, military personnel, or firefighters. Others create innovative clothing for special populations such as children, the elderly, and people with physical disabilities. Still others are in leadership positions in television, fashion publishing, and, of course, fashion design.

Apparel-Textile Management

Career interest: Graduates of the apparel and textile management program are attractive candidates for leadership positions in the textiles and apparel fields and related industries, in local or federal government agencies, and in education. Recent graduates include a production manager with a large U.S. textile manufacturer; a designer/owner of a children's sportswear firm; assistant buyers for Saks Fifth Avenue, Lord and Taylor, Jordan Marsh, and J.C. Penney; and an advertising director for a French menswear designer.

Fiber Science

Career interest: Recent graduates of the fiber science program have begun careers in the fiber and textile industries and in government agencies--developing and evaluating new products, conducting research, providing technical services, helping to ensure product safety, and coordinating consumer information programs.

The specialization provides excellent preparation for advanced study in many fields, including medicine, fiber and polymer science, materials science, textile science, textile technology, engineering, and other areas of applied science. Students in the program have also gone on to business and law schools. Perhaps the most contemporary and exciting areas of the fiber science field lie in the area of fiber-reinforced composites that are used in many applications (including the space shuttle) and in the area of specialty polymers such as those used to produce printed circuitry for computers.

1.5 Extension activity

Number of extension associates, including faculty: 4-5

Important issues addressed:

- Personal protective equipment for pesticide handlers
- Youth development--projects related to textiles and apparel

- Textile/Apparel industry vitality
- Environmental issues for individuals and communities
- Water quality
- Teaching science to youth
- Safety and health

Trends and directions:

Industrial extension efforts in textiles and apparel is focused in the areas of computer- aided design (CAD) and automation of apparel production. CAD is a very useful and productive tool which can help small and medium size industries achieve 'Quick Response' in apparel manufacturing.

Automation and application of control systems in apparel production will help the large scale manufacturers to be competitive in price and quality with overseas manufacturers.

1.6 Noteworthy facilities (e.g. unique classrooms, laboratories, farms, etc.)

- Conditioned testing labs
- Apparel design studios
- 2 computer-aided design classroom (one shared with the rest of CHE and one specialized for the textile industry and collaborative design process)
- Historical Costume Collection

2.0 SUBJECT DESCRIPTION AND GUIDELINES

2.1 Subject definition

Fiber Science is an applied science with its theoretical base of knowledge drawn from the physical sciences. In the study of fiber science the principles and methods of the physical and biological sciences are applied to the chemical and material properties of fibers, fibrous assemblies, and the materials used in their processing, modification, coloration, use, and care.

Textile Chemistry is the application of chemistry to the development, production, finishing and use of fibers and fabrics.

Apparel Design is a broad based study of physical properties of textiles and other materials, physiological and psychological human responses to textiles and apparel, and the nature of fabrication methods used in apparel production. Social, economic, psychological, and aesthetic factors influencing the designer's creativity and the problem solving process. Historical investigations and ethical considerations are also important aspects of the design process.

Apparel/Textile Management is a study of technical and economic aspects of apparel manufacture, marketing, and retail merchandising.

2.2 Subject scope

Fiber Science

Formation of fibers and fiber assemblies

Surface characteristics of fibers

Chemical and mechanical behavior of fibrous assemblies

Environmental implications of material utilization

Design of fibrous materials for nontraditional roles including structural composites,

geotextiles, biomedical materials, and protection of the body against hostile environments, material property based control systems for handling limp materials (yarns, fabrics) in manufacturing processes.

Fiber physics

Textile chemistry is both an instructional and research area in the department.,

Chemistry of high, linear polymers and fibers

Physical and chemical characterization of fibers

Textile dyeing and finishing

Manufacturing and processing of fibers and fabrics

Detergency and fabric care

Fabric performance and utilization

Apparel Design

- Physical protection for hazardous environments
- Health, economic, and design factors for special populations
- Clothing as an extension of human potential on Earth and beyond
- The impact of new technology on design problems and processes
- Garment creation; e.g., draping, pattern-making, sewing, fitting, but at an industrial level only, not the home level.
- Fashion design and style. Includes biographies of very well-known designers.

Apparel/Textile Management

- History of apparel industry
- Design and function of apparel manufacturing systems
- Analysis of efficient manufacturing methods
- Computer applications in apparel production and quality control
- Assessment of apparel quality

History and Design of Textiles

The surface design of textiles is paramount, so works should emphasize visual images. Fabrics for apparel, carpets, curtains and interior decorating are of interest. All periods of history are included, with an emphasis on post-Renaissance. The scope is global. Ethnographic materials are of interest, with an emphasis on Turkey, India, Indonesia, Japan, China, Native America, and Latin America. Special interests are in the techniques of block printing, shibori, batik, silk painting, weaving and silk screen. Works on fabric painting should be referred to the liaison. Needlepoint and embroidery are only purchased if the designs are outstanding. Exhibition catalogs for textiles are collected from major museums, such as the Metropolitan Museum of Art, the Textile Institute, the Los Angeles County Museum, the Victoria and Albert, and Museum of Leon, and various Parisian museums. Languages are English, French and Italian.

History of Apparel

The greatest interest is in substantial works, covering a long time span or broad geographical area. Both Eastern and Western costume are collected, with an emphasis on European and Islamic dress. The major time period is from the 19th century onward, although there is some interest in Renaissance costume. Exhibition catalogs for costumes are collected from major museums, such as the Metropolitan Museum of Art, the Los Angeles County Museum, the Victoria and Albert, the Bath Costume Institute, and Museum of Leon, and various Parisian museums. Languages to be collected are English, French and Italian.

Lace collection

The collection of books on lace should be maintained and developed, even though the use of this resource varies from time to time with faculty interests and research projects. It includes information on lace and lace forms, such as crochet, knitting, and macrame. The collection emphasizes European materials from the 17th century on, but also includes non-Western lace forms. Languages are English, French, Italian, and Flemish. Of greatest interest are works aiding in the identification of historic laces, but patterns, illustrations, and instruction are all useful.

Exclusions:

- Toy making.
- Home craft materials.
- Quilting.

2.3 Emerging trends in the subject area

Fiber Science

- Interface chemistry
- Plasma surface modifications
- Degradable/recyclable composites
- Low cost composites
- Novel uses of fibers
- Geotextiles for special applications
- Biomedical engineering
- Fiber science for engineering students

Textile Chemistry

- Protective fabrics as pathogenic barriers
- Fiber-reinforced composites

Biomedical applications of fibers and textiles
Geotextiles and geosynthetics
Surface analysis of fibrous materials
Personal protective equipment for worker safety

Apparel Design

Automated approaches to clothing design (self-propelled clothing)
for total enclosures (key words: magnetoencephalography; exoskeletons)
Alternative methods of apparel production (key words: ultrasonics, molding,
radio frequency sealing)
Custom-fit of apparel
Development of sizing standards
Anthropometric studies of the population
Collaborative design

Apparel/Textile Management

'Quick Response' in apparel manufacturing
Made-to-order apparel manufacturing
CAD, CAM and CIM applications in apparel production
Image analysis techniques for apparel quality control

3.0 SPECIAL INFORMATION NEEDS AND RESOURCES

3.1 Special information needs of those working in this subject area.

- Textile Technology Database
- World Textile Abstracts
- U.S. Patents Fulltext
- Patents or ability for patent searches--patents can be ordered through the Engineering Library.
- Textile and fiber standards--ASTM textile standards are collected by Mann.
- Regulation on textile industry, the environment, flammability
- Human factors, ergonomics and anthropometrics are critical to study and research of protective apparel. Anthropometrics of different populations (females of all ages; children/adolescents/elderly)
- ASTM publications--Most, except those specifically regarding textiles, are collected by the
- Engineering Library.
- Government publications, technical reports

Also, some faculty would like to have information available at Mann Library on the following:

- Physiology and anatomy--Mann is particularly lacking in resources in this area. Vet materials are not specifically related to humans.
- Kinesiology--most texts in Mann are very old. Needed are newer texts with information on up to date text methods and equipment to measure and analyze movement
- Information about manufacturing technologies for the apparel and textile industries
- Information about computer-aided design and manufacturing for the apparel and textile industry
- Educational materials on technology transfer issues

3.2 Special collections or noteworthy resources in the field

3.3 Endowment funds or special funding arrangements

- Hull Fund -- Books about lace
- Kackenmeister Fund -- Books about lace

4.0 TYPES OF MATERIALS

4.1 Priorities for types of materials

See [Priorities Table](#).

- Journals--international and domestic, both top priority
- The following proceedings should be acquired:
- ASTM F-23 Protective Clothing Symposium, published every 2 years
- Textile Society of America Proceedings, published every 2 years
- ITAA (International Textile and Apparel Association) Proceedings published annually
- Other proceedings can be decided ad hoc and on demand of faculty.

4.2 Format

4.3 Geographical guidelines

U.S., United Kingdom, Japan, Korea

See guidelines under 2.2 for the lace collection, history of textiles, history of costume..

4.4 Language guidelines

English

See guidelines under 2.2 for the lace collection, history of textiles, history of costume.

4.5 Chronological guidelines

Current. See guidelines under 2.2 for the lace collection, history of textiles, history of costume.

5.0 OTHER RELATED LIBRARY COLLECTIONS

- Engineering Library -- Fiber science (all areas). Aerospace military applications documents. industrial engineering, Books on standards, Government publications, Computer-aided visual analysis, perception, biomedical engineering.
- Physical Sciences Library -- Textiles/fiber chemistry, physics
- Veterinary Medicine -- Anatomy, physiology
- Olin and Uris Library -- general information on areas to which design is applied (for example, the basics of chemical weapons to learn how to design chemical suits). History of apparel, social/psychological aspects of apparel, visual images of apparel, apparel from other cultures
- Fine Arts Library -- visual materials on the human form, proportions, drawing the human figure.
- ILR -- labor union materials, employee training, history of apparel and textile industry
- Management Library -- operations research, quality control, management methods as relevant to apparel and textile production

6.0 POLICY QUESTIONS, COLLECTION NEEDS, FUNDING PROBLEMS OR OPPORTUNITIES

7.0 PRINCIPAL LC CLASSES

TP 890-933
TS 1300-1783
TT 387-850

8.0 RELATED COLLECTION POLICIES

- o [DEAN](#)
- o [PHYS](#)

Priorities Table for Textiles and Apparel

Code	IMPORTANCE/INTENSITY CODES DEFINITIONS
NA	Not applicable to the discipline.
0	Ephemeral; of insufficient value to be provided by library.
1	Of short term interest, but with little or no enduring value; very selectively acquired; retained, uncataloged, for limited duration only, e.g. newsletters in newly emerging, poorly documented areas, and manuals or pamphlets for reserve reading.
2	Limited scholarly interest or utility; collected very selectively, but not of high priority.
3	Important for research and/or instruction; should be well represented, but collected selectively rather than intensively.
4	Very important for faculty and/or students; intensively collected, i.e. every effort is made to provide as deep coverage of this literature as possible.
5	Essential to work in the discipline; the most important type of material for research or instruction purposes. Ensuring the highest possible coverage should be the library's top priority in this discipline.

Code*	SERIALS	Notes
4.8	Journals, scholarly	-
4.3	Journals, technical	-
4	Journals, other (describe)	Education, extension
4.25	Annual reviews, advances in...	-
4.1	Scientific and technical reports and research bulletins of major academies, learned societies, professional research and educational organizations and government agencies	Military research U.S., British, and German (published in English)
4.1	Proceedings, of international congresses and symposia	-
3.9	Proceedings, national or local	-

3.5	Statistical series	-
2.8	Trade journals and periodicals	-
1	Popular periodicals, hobby	-
1.8	Popular periodicals, semi-technical	Fashion magazines, visual material
1.3	Popular periodicals, farm press	-
2.6	Newsletters/newspapers	-
2.8	Proceedings of legislative bodies	Federal register
1.7	Student publications	-
2	Administrative publications of major academies, learned societies, professional, research and educational organizations and government agencies	-
2	Corporate annual reports	-
2.3	Yearbooks	-
2	Press releases	-
2.3	Lists	-
2	Working papers	-
Code*	MONOGRAPHS	Notes
4.3	Major scholarly monographs	-
4.1	Professional and technical	-
3.9	Subject histories	-
4.3	Textbooks, upper division, graduate	-
2.3	Biographies	-
1	Popular monographs	-
2.9	Technical reports	-

3.3	Government reports	-
3.7	Proceedings, international	-
3.4	Proceedings, other	-
2.7	Theses and dissertations (outside CU)	-
-	Festschrift	-
2.7	Patents	-
3.3	Corporate histories	-
2.3	How-to books & lab manuals	Perfect for kids, sewing instruction
2.2	Pamphlets	-
-	Ephemera (describe)	-
1	Maps	-
3.25	Technical bulletins/handbooks/compendia	-
Code*	ELECTRONIC INFORMATION	Notes
-	Applications programs	-
5	Bibliographic databases	BIOSIS; Chem Previews Abstracts, Textile/Apparel Abstracts
-	Bulletin boards	-
-	Fulltext files	-
-	Geographic information systems	-
5	Numeric/statistical files	Statistics on industry
-	Other (describe, taking as much space a necessary)	-

*Faculty were surveyed and the results averaged.

Completed by: Muthu Govindaraj; Sam Demas, Ed. by Henry Murphy
February 1, 1993
Revised by Linda Stewart, C.C. Chu, Ann Lemley, Charlotte Jirousek, and Sam Demas
August-September, 1996

[Top of
Page](#)