

College of Textiles

Graduate Student Handbook

TEXTILE AND APPAREL, TECHNOLOGY AND MANAGEMENT (TATM) MASTERS DEGREES

**Master of Science (MS) in Textiles Degree
(thesis)**

**Master of Textiles (MT) Option B Degree
(non-thesis)
On Campus and Distance Education**

Fall, 2009

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I. INTRODUCTION

The Department of Textile and Apparel, Technology and Management (TATM) offers the Master of Science in Textiles and the Master of Textiles degrees. Textile's includes the design, management, and technology of fiber based products and processes. Textile design students explore issues in new product development, body scanning, direct digital printing, computer animation, and computer aided design (CAD). Textile management includes such topics as business intelligence, business finance, information systems, international marketing, supply chain management, and total quality management. Medical textiles, industrial fabrics, three dimensional textile structures, aerospace applications, and smart textiles are examples of new areas for textile technology.

II. ADMISSION

Students with a Bachelor of Science or a Bachelor of Arts degree may apply to either of the degree programs. Students apply with degrees in textiles, engineering, management, or design. Typically the minimum acceptable overall grade point average is a 3.0 out of 4.0. Students should have 20 credit hours from mathematics and the natural sciences in their undergraduate degree. Graduate courses in advanced fibrous structures, medical textiles, nonwovens and some advanced textile technology courses may require advanced mathematics or science courses.

III. FINANCIAL AID

Upon your acceptance to the program your name is sent to the entire TATM faculty for consideration for funding. Acceptance into our graduate program is not conditioned upon the availability of funding. Teaching assistantships, research assistantships, and scholarships may be available.

Students accepted into the Master of Science degree in Textiles are eligible to apply for the Institute of Textile Technology Fellows Program. For more information see <http://www.itt.edu/Education/>

IV. PROGRAM REQUIREMENTS

A. Master of Science in Textiles

The objective of the Master of Science in Textiles is to develop the student's potential for research and the technical and analytical skills needed for the design of new products and processes and for careers in the textile supply chain, in research laboratories, in government agencies, and in higher education. The MS degree is a thesis-based 36 credit hour program where students conduct independent investigation. Students may specialize in the following areas: *advanced fibrous structures, medical textiles, textile product design, textile technology, textile technology management and nonwoven structures*. Students interested in continuing with a Ph.D. are encouraged to pursue the MS degree.

Students must meet all the rules outlined in the Graduate School Administrative Handbook.

1. Students must form a committee and have an approved Plan of Graduate Work by the end of the first semester for full time students. The committee will consist of at least three NC State Graduate Faculty members, one of whom is from the department and is designated as chair and one of whom represents the minor, if one has been declared.
2. The degree must be completed within 6 years of the date of the first course included in the Plan of Graduate Work.
3. Students must be continuously enrolled once the graduate program has begun. Students may request one leave of absence following graduate school guidelines.
4. A minimum of 36 credit hours is required for the degree.
5. Maximum of 12 credit hours of relevant courses taken as post baccalaureate studies (PBS) may be included in the program with the approval of the student's advisory committee.
6. Two credit hours of departmental seminar TTM 601 are required on the plan of work.
7. Maximum of 10 credit hours of 600 level courses (TT/TTM 630, 693, 695) in the major for research and independent study are allowed on the plan of work.
8. Normally 9 credit hours of supporting course from outside the College of Textiles are allowed on the plan of work. This may be increased to 12 hours for students taking 6-credit hour classes in the College of Design.
9. All course work must be at the 500 level or above. However, up to 3 credit hours of advanced undergraduate 400 level coursework from outside of the department may be allowed on the plan of work.
10. Each specialization requires at least 15 credit hours of TT/TTM/FPS course work at the 500 or 700 levels.

11. TT500 *Understanding the Textile Complex* is required for all students without a textile background.

Specific course requirements for specializations are as follows:

Textile Technology Specialization

- At least 9 credit hours of advised courses in textile technology (such as TT 5xx or TT/FPS 7xx level courses);
- Normally 6 credit hours of advised courses in textile technology management (such as TTM 5xx or TTM 7xx)
- Two credit hours of seminar TT 601;
- Complete a related thesis topic TT 695.

Textile Technology Management Specialization

- At least 9 credit hours of advised courses in textile technology management (such as TTM 5xx or 7xx level courses);
- Normally 6 credit hours of advised courses in textile technology (such as TT 5xx or TT/FPS 7xx)
- Two credit hours of seminar TTM 601;
- Complete a related thesis topic TTM 695

Medical Textiles Specialization

- At least 9 credit hours of advised courses in medical textiles (such as TT 532 Evaluation of Biotextiles; TT 532 Formation, Structure, and Assembly of Medical Textile Products; TE 566 Polymeric Biomaterials Engineering; TE 598E Special Topics - Protection and Comfort).
- Two credit hours of seminar TT 601;
- Complete a related thesis topic TT 695.

Advanced Fibrous Structures Specialization

- At least 9 credit hours of advised courses in advanced fibrous structures (such as TT 581 Technical Textiles; TT/FPS 781 mechanics of Twisted Structures; TT/FPS 782 Mechanics of Fabric Structures)
- Two credit hours of seminar TT 601;
- Complete a related thesis topic TT 695.

Textile Product Design Specialization

- At least 3 credit hours TT 570 Textile Digital Design and Technology;
- At least 6 credit hours of advised textile product design courses (such as TTM 501 Textile Enterprise Integration, TTM 510 Apparel Technology Management, TTM 515 Apparel Production, TT 571 Professional Practices in Textile Design and Technology; TTM 573 Management of Textile Product Development;
- Two credit hours of seminar TT 601;
- Complete a related thesis topic TT/TTM 695;
- Students are encouraged to take three of the following courses in the College of Design:
 - ADN 414 Color and Light,
 - ADN 502 Advanced Visual Laboratory,
 - ADN 503 Graduate Seminar in Art and Design,

- ID 570 Advanced Fibers and Surface Design Studio,
- ADN 571 Fibers and Surface Design Studio,
- AND 630 Independent Study in Art and Design,
(Student must meet all the prerequisites for College of Design courses.)

Nonwovens Specialization

- At least 9 credit hours of advised courses in nonwoven structures (such as TT 503 Materials, Polymers, and Fibers Used in Nonwovens, TT 504 Introduction to Nonwovens Products and Processes, TT 505 Advanced Nonwovens Processing, TT 506 Bonding Principles in Nonwovens, TT 507 Nonwoven Characterization Methods, TT 508 Nonwoven Product Development)
- Two credit hours of seminar TT 601;
- Complete a related thesis topic TT 695.

B. Master of Textiles Option B: On Campus

The objective of the Master of Textiles Option B is to provide on and off-campus students with an opportunity to strengthen their educational background and prepare them for productive careers in the textile supply chain, in research laboratories, in government agencies and in higher education. The Master of Textiles Option B is a non-thesis degree. The program is flexible to accommodate a breadth of student needs. The program can be completed in only two semesters of full-time on campus study. The program is also available entirely via distance education (Textile Off-Campus Programs: TOP) and may be completed on a part time basis. The degree requires 30 credit hours of study to complete.

Students must meet all the rules outlined in the Graduate School Administrative Handbook.

1. The degree must be completed within 6 years of the date of the first course taken.
2. Students must be continuously enrolled once their graduate program has begun. Students may request one leave of absence following graduate school guidelines.
3. A minimum of 30 credit hours is required to complete the degree.
4. A Plan of Work is required.
5. No Graduate Committee is required; only an Adviser.
6. No more than 6 credit hours independent study courses, TT/TTM 630, are allowed on the plan of work.
7. No minor can be declared.
8. No more than 2 credit hours of TT/TTM 601 Departmental Seminar are allowed on the plan of work (on-campus only; students opting for completion in 2 consecutive semesters can waive this requirement with departmental approval).
9. Normally no more than 9 credit hours of supporting courses from outside the department are allowed on the plan of work. This may be increased to 12 hours for students taking 6-credit hour classes in the College of Design.
10. Up to 12 credit hours of relevant courses taken as post baccalaureate studies (PBS) at NCSU may be included in the program with the approval of the student's adviser.
11. All course work must be at the 500 level or above. However, up to 3 credit hours of advanced undergraduate 400 level coursework from outside of the department.

C. Master of Textiles Option B: Distance Education

The Master of Textiles is available entirely by distance education. Registration for courses is administered by the TOP program <http://www.tx.ncsu.edu/academic/distance/> Students are assigned an advisor whom will oversee them throughout the program. Students must complete the program within 6 calendar years from the date of the first course taken.

D. TATM Course Offerings

TAM 589 - Special Studies In Textile Management and Technology

TT500 - Understanding the Textile Complex
TT503 - Materials, Polymers, and Fibers used in Nonwovens
TT504 - Introduction to Nonwovens Processes and Products
TT505 - Advanced Nonwovens Processing
TT506 - Bonding Principles in Nonwovens
TT507 - Nonwoven Characterization Methods
TT508 - Nonwoven Product Development
TT 520 - Yarn Processing Dynamics
TT 520L - Yarn Processing Dynamics
TT 521 - Filament Yarn Production Processing and Properties
TT 521L - Filament Yarn Production Processing and Properties
TT 532 - Evaluation of Biotextiles
TT 541 - Theory and Practice of Knitted Fabric Production and Control
TT 549 - Warp Knit Engineering and Structural Design
TT 550 - Production Mechanics and Properties of Woven Fabrics
TT 550L - Production Mechanics and Properties of Woven Fabrics
TT 551 - Advance Woven Fabric Design & Structures
TT 551L - Advance Woven Fabric Design & Structures
TT 552 - Formation, Structure, and Assembly of Medical Textile Products
TT 570 - Textile Digital Design and Technology
TT 571 - Professional Practices in Textile Design and Technology
TT 581 - Technical Textiles
TT 591 - Special Studies in Textile Technology

TTM 501 - Textile Enterprise Integration
TTM 502 - SCADA Systems for Textile Manufacturing
TTM 502L - SCADA Systems for Textile Manufacturing
TTM 510 - Apparel Technology Management
TTM 510L - Apparel Technology Management
TTM 515 - Apparel Production
TTM 517 - Advanced Computer-Aided-Design for Fashion
TTM 530 - Textile Quality and Process Control
TTM 531 - Total Quality Management in Textiles
TTM 535 - Research Methods and Management
TTM 561 - Strategic Technology Management in the Textile Complex
TTM 573 - Management of Textile Product Development
TTM 581 - Global Textile and Apparel Business Dynamics
TTM 583 - Strategic Planning for Textile Firms
TTM 585 - Market Research In Textiles
TTM 588 - Global Supply Chain Management

TTM 591 - Special Studies in Textile Technology Management

For a complete listing of current course offerings, see the following link to Registration and Records: http://www2.acs.ncsu.edu/reg_records/crs_cat/directory.html

V. PROGRAM DETAILS

A. Oral Exam

A request to schedule the final oral exam must be submitted prior to the semester deadline date (<http://www.ncsu.edu/grad/faculty-and-staff/academic-calendar.html>) to the graduate school, and at least 21 days prior to the final exam.
http://www.fis.ncsu.edu/grad_publicns/handbook/schedule.htm

B. Continuing on to Ph.D. Programs

Students interested in continuing with either the Fiber and Polymer Science Ph.D. or the Textile Technology and Management Ph.D. should contact their advisor about how to apply directly to these programs before completing the master's degree.

VI. FACULTY RESEARCH INTERESTS

Please visit http://www.tx.ncsu.edu/departments/tatm/faculty_and_research_staff.html to view a list of TATM faculty research interests.