

NC STATE

Wilson College of Textiles

Graduate Student Handbook

Textile and Apparel, Technology and Management

Wilson College of Textiles

North Carolina State University

2021-2022

Welcome

Welcome to the Department of Textile and Apparel, Technology and Management (TATM) in the Wilson College of Textiles at NC State University. We are excited to have you here and know that you will have the opportunity to study with faculty recognized nationally and internationally for their expertise.

The Wilson College of Textiles, being the global leader in higher education in Textiles and Apparel, provides tremendous resources to facilitate your research and academic pursuits. As a research-intensive land-grant university, North Carolina State University is dedicated to excellent teaching, the creation and application of knowledge, and engagement with public and private partners. We hope that you will take full advantage of the resources we provide as you progress through the graduate program, and you can expect us to challenge and support you through your degree program.

With your passion for the textile, apparel, and related industries, you can choose to focus your graduate study in one of the following areas of specialization:

The **Textile and Fashion Design** specialization combines aesthetic, functional, technical and expressive approaches utilizing cutting-edge technologies and traditional design sensitivities. Students have access to the newest fibers, fabrics and processes to create innovative textiles, fashions and related products.

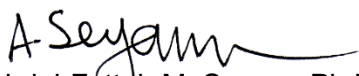
The **Retail and Brand Management** specialization focuses on marketing and management in the textile and apparel industry and includes marketing research, consumer behavior analysis, entrepreneurship, and global brand management in textiles and apparel.

The **Textile Technology** specialization develops the students' potential for research and skills needed for the technical perspective of textile structures and their products, including automotive, medical textiles, industrial fabrics, three-dimensional textiles, aerospace applications, and smart textiles.

The **Textile Management** specialization focuses on management issues in the textile industry and includes strategic textile management, quality management, technology management and international management.

In addition to the state of the art facilities and diverse faculty expertise, the department maintains extensive networks with the textile and apparel industry. Global industry and government executives (<https://textiles.ncsu.edu/tatm/industry-advisory-board/>) actively participate in our vision to be a global leader in higher education in Textiles.

Again, welcome to TATM! We wish you the best and look forward to working with you to achieve your academic goals during your graduate education journey.



Abdel-Fattah M. Seyam, Ph.D
Department Head



Lisa Chapman, Ph.D
Associate Professor and
Director of Graduate Programs

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1. TATM Graduate Student Expectations and Learning Outcomes

With state of the art facilities and nationally and internationally recognized faculty, the TATM graduate programs provide students with a thorough understanding of the science, technology, and management principles and the ability to identify and solve challenging technological and managerial problems in the textile and apparel industry. Building on the strength of NC State University and our global industry partners, our programs are designed to prepare global leaders for managerial and leadership positions in industry, businesses, higher education, and non-profit organizations.

Upon successful completion of the graduate program, TATM graduates will be able to:

- Assimilate, integrate, and evaluate scholarship in the multidisciplinary field;
- Understand the research methods, ethical dimensions, and historical knowledge bases of the discipline;
- Understand new knowledge in the chosen field and apply that knowledge to new problems/issues;
- Develop expertise and conduct independent research in specific areas of discipline;
- Assess the impact of current trends and develop industry forecasting ;
- Develop and expand creative thinking skills; and
- Make strategic and ethical decisions.

The TATM graduate faculty expects the following of TATM graduate students to reach their expected learning outcomes:

- To exhibit a good work ethic, be self-directed and motivated;
- To work responsibly toward completion of the degree in a timely fashion;
- To communicate regularly with faculty mentors and the thesis committee members, especially in matters relating to research and progress within the degree program;
- To exercise the highest integrity in all aspects of work, especially in the tasks of collecting, analyzing, and presenting research data
- To critique current concepts and generate independent interpretations;
- To be professional in interaction with peers, students, staff, and faculty.
- To contribute, wherever possible, to the discourse of the scholarly discipline through conference presentations, publications, collaborative projects, and other means; and
- To realize responsibilities as individual and professional representative of both the TATM department and the university as a whole.

2. TATM Graduate Degrees

The Department of Textile and Apparel, Technology and Management (TATM) offers the following two degrees:

- Master of Science in Textiles (MS)
 - On-campus only
- Master of Textiles (MT)
 - On-campus or Distance Education

The Thesis-based MS option emphasizes the development of the skills necessary to create, plan, and carry out independent research. The Non-Thesis MT option offers preparation and career advancement for students with interests in the design, management, and technological perspective of the textile industry.

Students can choose to focus their degree in one of the following areas of specializations:

- Textile and Fashion Design,
- Retail and Brand Management,
- Textile Technology, or
- Textile Management

The **Textile and Fashion Design** specialization combines aesthetic, functional, technical and expressive approaches utilizing cutting edge technologies and traditional design sensitivities. Students have access to the newest fibers, fabrics and processes to create innovative textiles, fashions and related products.

The **Retail and Brand Management** specialization focuses on marketing and management in the textile and apparel industry and includes marketing research, consumer behavior, entrepreneurship, and global brand management in textiles and apparel.

The **Textile Technology** specialization develops the students' potential for research and skills needed for the technical perspective of textile structures and their products, including automotive, medical textiles, industrial fabrics, three-dimensional textiles, aerospace applications, and smart textiles.

The **Textile Management** specialization focuses on management issues in the textile industry and includes strategic textile management, quality management, technology management and international management.

3. TATM Degree Requirements

3.1 Plan of Work (POW)

All graduate students must develop and submit a Plan of Work (POW) via the MyPack Portal. The POW identifies the graduate faculty that will be mentoring the student's academic progress and the course work to be taken for the degree.

3.1.1 MS students

The POW must be submitted by the end of the second semester and include a list of the course work to be undertaken and the thesis committee members. The POW is to be developed by the student in conjunction with his/her adviser and/or thesis committee and then approved by the adviser and thesis committee, the TATM Director of Graduate Programs and the Graduate School.

3.1.2 MT Students

The POW must be submitted by the end of their first semester and include a list of the coursework to be undertaken and the academic adviser. The POW is to be developed by the student in conjunction with his/her adviser, be approved by the adviser, the TATM Director of Graduate Programs and the Graduate School.

Should there be any changes after the original POW is submitted, for either MS or MT students, a revised POW must be submitted. It is essential that students discuss any changes with the adviser/committee before requesting any changes to the POW. The changes on the POW must be resubmitted for approvals using the same procedure as the original POW.

3.1.3 Accelerated Bachelor's/Master's (ABM) Students

ABM students should already have a Plan of Work on file to get into the program. Should you need to modify your Plan of Work, please work closely with your committee chair (MS) or advisor (MT).

3.2 Degree Requirements

3.2.1 Degree Requirements for Master of Science in Textiles (MS)

The objective of the thesis based Master of Science in Textiles (MS) is to prepare students for careers that require independent research skills, including creating, planning, and carrying out research projects. Students interested in continuing with a Ph.D. in Textile Technology and Management (TTM) or Fiber and Polymer Science (FPS) are also encouraged to pursue the MS degree. The MS degree requires a minimum of 36 hours including a thesis and typically takes 2 years to complete. Please see **Appendix A** for the degree timeline.

MS degree requirements:

1. Students should form a thesis committee and have an approved Plan of Work (POW) by the end of the second semester (for full time students).
2. Thesis committee composition:
 - a. A minimum of three NC State Graduate Faculty members;
 - b. The committee chair must be a graduate faculty member in TATM; and
 - c. If the student has a minor, one committee member needs to represent the minor.
3. Students must successfully pass the thesis defense to graduate.
4. A minimum of 36 credit hours are required to earn the degree.
5. A maximum of 12 credit hours of relevant courses (500 or above) taken as non-degree studies (NDS) may be included in the program with the approval of the student's thesis committee.
6. Two (2) credit hours of TTM 601 (graduate seminar) are required for the degree. No more than 2 hours of TTM 601 count toward the degree.
7. A total of 6-10 credit hours of 600 level courses (TT/TTM 630, 693, 695) in the major for research and independent study can count towards the degree.
8. A maximum of nine (9) credit hours of supporting course work from outside the Department are allowed to count towards the degree. This may be increased to a maximum of 12 hours for students taking 6-credit hour classes in the College of Design.
9. All course work toward the degree 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 a minimum of 15 credit hours of TT/TTM course work at the 500 or 700 levels.
11. If a minor is selected, a minimum of nine (9) hours must be taken in the minor area and nine (9) hours are counted toward the degree requirement.
12. The degree must be completed within six (6) years of the date of the first course completed that is on the Plan of Work. Students must be continuously enrolled once they begin their graduate program. Students may request a leave of absence from the program for one semester at a time; two (2) semesters maximum.
13. Graduate students must maintain a minimum 3.0 GPA to remain in the program and have a minimum 3.0 GPA at the time of graduation. (Please see 4.7 Academic Standing in this Handbook for more details.)

3.2.2 Degree Requirements for Master of Textiles (MT)

The objective of the non-thesis based Master of Textiles (MT) is to provide preparation and career advancement for students with interests in the design, management, and technical perspective of the textile industry. The program is flexible to accommodate a breadth of student needs. The program can be completed in only two semesters (1 year) of full-time on campus study or up to a maximum of six (6) years through distance education. The program is also available entirely via distance education and may be completed on a part time basis (see:

<http://textilesonline.tx.ncsu.edu/>). The degree requires a minimum of 30 credit hours. Please see **Appendix A** for the degree timeline.

MT degree requirements:

1. Students must work with an adviser throughout the program. No Graduate Committee is required.
2. Students must submit a Plan of Work (POW) by the end of their first semester.
3. A minimum of 30 credit hours is required to complete the degree.
4. A maximum of six (6) credit hours independent study courses, TT/TTM 630/632, are allowed to count towards the degree.
5. A maximum of 12 credit hours of relevant courses taken as non-degree studies (NDS) may be included in the program with the approval of the student's adviser.
6. TTM 601 (Graduate Seminar) is not required for the degree. Students are allowed to take TTM 601, but no more than 2 credit hours of TTM 601 count toward the degree.
7. No minor can be declared.
8. Nine (9) credit hours of supporting coursework 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.
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. The degree must be completed within six (6) years of the date of the first course included in the Plan of Work. Students must be continuously enrolled once they begin their graduate program. Students may request a leave of absence from the program for one semester at a time; two (2) semesters maximum.
14. Graduate students must maintain a minimum 3.0 GPA to remain in the program and must have a 3.0 GPA or higher at the time of graduation. (Please see 4.7 Academic Standing in this Handbook for more details).

3.3 Recommended Courses in Specialized Areas*

Textile & Fashion Design

- TT 551- Advanced Woven Fabric Design & Structures
- TT 570- Textile Digital Design and Technology
- TT 571- Professional Practices in Tex. Design and Tech.
- TTM 510- Apparel Technology Management
- TTM 515- Apparel Production
- TTM 517- Advanced Computer-Aided-Design for Fashion
- TTM 573- Management of Textile Product Development
- TT/TTM 591- Special Studies
- TT/TTM 630- Independent Study
- TT/TTM 632- Special Studies in Tex. Prod. Development
- TT/TTM 676- Special Projects

Retail and Brand Management

- TTM 561- Strategic Technology Management in the Tex. Complex
- TTM 573- Management of Textile Product Development
- TTM 581 - Global Textile and Apparel Business Dynamics
- TTM 582- Global Textile Brand Management and Marketing
- TTM 583- Strategic Planning for Textile Firms
- TTM 585- Market Research In Textiles
- TTM 588- Global Perspectives in Tex. Supply Chain Management
- TT/TTM 591- Special Studies
- TT/TTM 630- Independent Study
- TT/TTM 676- Special Projects

Textile Technology

- TT 504- Introduction to Nonwovens Processes and Products
- TT 520- Yarn Processing Dynamics
- TT 530- Textile Quality and Process Control
- TT 541- Theory and Practice Of Knitted Fabric Production and Control
- TT 550- Production Mechanics and Properties of Woven Fabrics
- TT 551- Advance Woven Fabric Design & Structures
- TT/TTM 591- Special Studies
- TT/TTM 630- Independent Study
- TT/TTM 676- Special Projects

Textile Management

- TTM 530- Textile Quality and Process Control
- TTM 533- Lean Six Sigma Quality
- TTM 535 - Research Methods and Management (Master of Science only)
- TTM 561- Strategic Technology Management in the Tex. Complex
- TTM 581 - Global Textile and Apparel Business Dynamics
- TTM 583- Strategic Planning for Textile Firms
- TTM 501 - Textile Enterprise Integration
- TTM 591- Special Studies
- TTM 630- Independent Study

***Note:** 1. Not all courses are offered every semester and/or may be cancelled due to low student enrollment. For a complete listing of current course offerings, see the following link to Registration and Records:

<https://www.acs.ncsu.edu/php/coursecat/directory.php>

2. See **Appendix B** for a list of all TT and TTM graduate level courses.

4. Academic Administrative Information

All graduate students are governed by the academic policies of the Graduate Handbook by the NCSU Graduate School, available online at <http://www.ncsu.edu/grad/handbook/index.php>

4.1 Course Registration

- Course registration is through MyPack Portal. You will need to log in to start the registration process. You can learn how to use MyPack Portal to register for courses through the following tutorial:
https://www.youtube.com/channel/UCgef_4xn9_saKLTsOpyTXSg
- You must meet with your adviser regarding your course plan before you can register. After your advising meeting, your adviser will release the advising hold for you.
- The Director of Graduate Programs (DGP) in Textile & Apparel, Technology & Management (TATM), Dr. Yingjiao Xu (yxu11@ncsu.edu), will be your initial faculty adviser when you begin the program. You should request a permanent faculty adviser by the end of your first semester that shares your research interests.
- All students MUST register each semester by the Census (drop/add) date:
<https://grad.ncsu.edu/about/academic-calendar/>

Registration Policy:

- Must be registered in class(es) each semester or request a Leave of Absence:
<https://grad.ncsu.edu/faculty-and-staff/forms/graduate-school-forms/>
- Leave of absences are only granted for a maximum of 2 semesters or 1 year total:
<https://grad.ncsu.edu/students/rules-and-regulations/handbook/3-14-minimum-enrollment-requirements/>
- 9+ credit hours is considered full-time with a max of 15 per semester (if approved by the department).
- Below 9 hours is considered half or quarter-time (students on financial aid should review registration requirements. Also, international students should review immigration policies concerning full and half-time enrollment status
<https://internationalservices.ncsu.edu/current-students/enrollment/>
- International students, in their last semester, may take 1 credit hour if they submit a reduction in course load waiver form to the Office of International Services
<https://internationalservices.ncsu.edu/current-students/exceptions-to-full-time-enrollment-reduced-course-loads-rcls/>
- If you plan to withdraw from the program, you must get approval from the home department and the University Counseling Center:
<http://policies.ncsu.edu/regulation/reg-02-05-04>
- Must maintain at least a 3.0 cumulative Grade Point Average (GPA) in all course work.
<https://grad.ncsu.edu/students/rules-and-regulations/handbook/3-19-academic-difficulty/>

4.2 Holds

Holds can be placed on a student's record for several reasons. Most commonly, these include departmental deficiencies, immunization requirements, disciplinary reasons, financial encumbrance to the University, lack of academic progress, failure to submit transcripts, or low GPA. Holds may prohibit the student from making changes to their registration, from receiving a transcript, or from graduating. Holds will appear in the Registration section of a student's profile in Self-Service.

4.3 Changing Degrees / Programs

- Students must remain in their original degree program for one semester before they can change curriculums. See full guidelines: <https://grad.ncsu.edu/students/rules-and-regulations/handbook/3-9-change-in-degree-level-or-program/>
- Students must submit a [degree change form](#) to his/her home department's Director of Graduate Programs (DGP) for approval.
- In cases where the student requests a departmental change, DGP's for each department must approve the degree change form.
- Students must be in good academic standing (have a 3.0 GPA or above, have met all provisions, etc.) to request degree/program change.
- Students must be registered for the semester in which they are requesting the degree change.
- If you have already submitted a plan of work for the current degree program, a new work plan must be created for the new degree program.
- International students should review immigration policies concerning changing degree programs: <https://internationalservices.ncsu.edu/current-students/changing-your-program/>

4.4 Plan of Work (POW)

- Choose a Research Topic as soon as possible (MS students);
- Choose a Committee Chair (MT does not require a committee, only Chair) by the end of the first semester and Committee Members by the end of the second semester: <https://grad.ncsu.edu/students/rules-and-regulations/handbook/3-2-advisory-committees/>
- Work with committee chair and/or committee to develop the Plan of Work;
- Plan of Work should be submitted by the end of the first semester (MT) or second semester (MS): <https://grad.ncsu.edu/students/rules-and-regulations/handbook/3-3-graduate-plan-of-work/> in MyPack portal
- Please remember that this is a work "Plan." Some courses will not be offered every semester or may conflict with another course on your schedule. Most POWs have to be altered during the degree program. If your POW remains unsubmitted, "pending" or "Denied," it can create deadline problems for graduation in your final semester. You can look under the "comments" tab if your plan of work has not been approved to see what corrections are needed.

4.5 Thesis Defense and Graduation (MS Students)

- Working with your committee chair (adviser) to identify a research topic by the end of the first semester.
- Start working on the thesis project as early as possible (recommended to start at the beginning of the second semester);
- Complete the thesis project under the direction of your committee chair and in consultation with your thesis committee;
- Successfully complete the coursework per the Plan of Work;

- Apply to graduate on MyPack portal by deadline; <https://grad.ncsu.edu/about/academic-calendar/>
- Review with your committee chair(s) before scheduling a defense date.
- Schedule a defense date with all of your committee members. Keep in mind that you must defend by a certain date in each semester to be considered a graduate of that semester (typically by the end of March and October):
<https://grad.ncsu.edu/about/academic-calendar/>
- Submit the request to *SCHEDULE MASTER'S ORAL EXAMINATION* form through the department at least 2 weeks prior to the oral exam date. The exam request form can be found at <https://grad.ncsu.edu/faculty-and-staff/forms/graduate-school-forms/>
- Give copies of your thesis to the Committee at least two weeks prior to the oral exam (thesis defense) date.
- Unconditionally pass the oral exam (thesis defense).
- Submit the thesis to Thesis Editor within 24 hours of the exam:
<https://grad.ncsu.edu/students/etd/>
- Submission of a thesis to the Graduate School must take place at least four weeks prior to the last day of classes in the semester or summer session in which the degree is to be conferred. Specific deadline dates are published at least one year in advance on the Graduate School website <https://grad.ncsu.edu/about/academic-calendar/>
 - There is an additional deadline each semester as follows:
Deadline to graduate but not to register for a semester. Student must pass the final oral exam unconditionally, or pass conditionally and clear the conditions, and also have the thesis review with the Thesis Editor by the last working day before the first day of class for that semester. If he/she does so, the student avoids registering for that semester or paying tuition for that semester.
- **International students** should reconfirm their visa status with the Office of International Services.
- The Graduate School will not authorize the release of the diploma to the student or inclusion of the statement of award of the degree on the permanent records from which transcripts are made until these forms and fee have been completed and returned to the Graduate School.

4.6 Graduation (MT students)

- Successfully complete the coursework per the Plan of Work;
- Apply to graduate on MyPack portal by deadline; <https://grad.ncsu.edu/about/academic-calendar/>

4.7 Academic Standing

A notice of academic warning is issued to graduate students who have accumulated fewer than nine (9) hours of course work and have less than a 3.0 grade point average. Graduate students are placed on academic probation if they accumulate 9-18 credit hours and have a grade point average of less than 3.0. A student's graduate program is terminated if 18 or more credit hours are accumulated with a grade point average of less than 3.0. In the latter case, no further registration in a graduate classification will be permitted. Under special circumstances a student will be reinstated upon the written recommendation of the Director of Graduate

Programs and approval by the Graduate School. Furthermore, the Department has the prerogative of recommending the termination of a student's graduate admission at any time.

If a student receives a notice of "Graduate Admission Terminated" at the end of the first summer session, the student may register for the second summer session unless the Department recommends otherwise. A student who receives such a note should confer with the DGP before registering for the second summer session. Once admitted, a graduate student must maintain a "B" or better average to remain eligible for appointment to an assistantship, fellowship, or traineeship and must be registered each semester during which the appointment is in effect.

5. Financial Support

Financial support in the form of research assistantships or teaching assistantships may be available for full-time MS students who apply early. International students who seek funding must acquire this through individual faculty members who have research projects that can support a graduate student. While international students might find support by their second semester, they should be prepared to cover all expenses for the first and second semester at least. The Graduate Student Support Plan is used to attract top students to NC State. Under the plan, students supported on a teaching or research assistantship or a fellowship receives health insurance benefits and tuition support. Please see the NCSU Graduate Student Support Plan (GSSP) for more information.

- Funded students should adhere to their Terms and Conditions contract. If /when funded, students must sign the contract attached to the offer letter.
- Funded students should also be aware of their benefits (tuition, health insurance, etc.) eligibility through the Graduate Student Support Plan (GSSP):
<https://grad.ncsu.edu/students/gssp/>
- Max. 20 hours/week (half time appointment) on Teaching/Research.
- Half-time Appointment: 9 credit hours/semester (min/max).

6. Faculty Research

The TATM faculty maintains very active research programs. The faculty in the department has a very diverse research expertise from fiber structure, fabric treatment, textile and fashion design, production and manufacturing management, supply chain management, quality control, market analysis, brand management, and retailing and merchandising. A list of faculty research interests is attached in **Appendix C**. Please review this information and feel free to reach out to the faculty members with whom you would like to work, or seek advice.

7. Student Organizations

- Textile Association of Graduate Students (TAGS) <https://sites.textiles.ncsu.edu/tags/>
- NCSU University Graduate Student Association (UGSA) <https://orgs.ncsu.edu/gsa/>
- AATCC NCSU Student Chapter
- African-American Textile Society (AATS)
- Fashion Group of the College of Textiles (FG)

8. Related Professional Organizations

- International Textile and Apparel Association (ITAA) <http://itaaonline.org/>
- International Foundation of Fashion Technology Institutes (IFFTI) <http://www.iffiti.com/>
- American Association of Family and Consumer Science (AAFCS) <http://www.aafcs.org/>
- American Collegiate Retailing Association (ACRA) <http://acraretail.org/>
- National Retail Federation (NRF) <https://nrf.com/>
- American Apparel and Footwear Association (AAFA) <https://www.aafaglobal.org/>
- American Association of Textile Chemists and Colorists AATCC <http://www.aatcc.org/>
- Association of the Nonwoven Fabric Industry (INDA) <http://www.inda.org/>
- Costume Society of America (CSA) <http://www.costumesocietyamerica.com/>
- Industrial Fabrics Association International (IFAI) <http://www.ifai.com/>
- ASTM International <http://www.astm.org/>

9. Graduate Program Contacts

Dr. Lisa Parrillo-Chapman

Director of Graduate Programs
Room 3255, WCOT
Tel: 919-513-4020
Email: lparril@ncsu.edu

Mr. Robert Cooper

Graduate Services Coordinator
Room 3250A, WCOT
Tel: 919-515-6632
Email: robert_cooper@ncsu.edu

Appendix A: Master's Program Timeline of Key Requirements

Acceptance to the TATM Graduate Program			
Required Action	Deadline	Who Initiates	Submit to
Complete online acceptance	ASAP upon receipt	Prospective student	Done online through application portal
Arrival at NC State and Prior to Start of Fall Semester			
Required Action	Deadline	Who Initiates	Submit to
Make an appointment online and Visit <u>Office of International Services</u> (OIS) with Passport and I-20	Immediately upon arrival at NCSU	International students only	
Submit hard copy proof of <u>immunizations</u>	Within 30 days of your acceptance at NCSU	International students only	Immunizations Department immunizations@ncsu.edu
Attend <u>OIS Orientation</u> , <u>Graduate School Orientation</u> , TATM Graduate Student Orientation	Students will receive date, time, and location information via email.	<u>The Graduate School</u> and the DGP of TATM	
For US students only: Complete <u>residency requirements</u> (but do not submit residency requirement form until end of second semester).	IMPORTANT! Within the first 10 days of classes	Students who are U.S. Citizens or have permanent resident status	After completing the requirements, contact: Residency_Officer@ncsu.edu to ensure your application will be accepted
1st Year of Graduate School			
Required Action	Deadline	Who Initiates	Submit to
Students whose previous degree programs were not complete at the time of application are required to submit official transcripts showing degree(s) awarded and date(s).	Before the end of first semester of registration	Student	<u>The Graduate School</u>
MS: Establish Advisory Committee and Submit Plan of Work via <u>MyPackPortal</u> MT: Identify adviser and Submit Plan of Work via MyPackPortal	Before end of second semester of coursework	Student and Advisor	<u>The Graduate School</u>
IMPORTANT! Submit North Carolina Residency application.	Between 14 and 75 days prior to the beginning of the	Student	<u>The Graduate School</u>

	student's third semester of classes		
Attend Graduate School Electronic Thesis and Dissertation <u>Workshop</u>	By the end of Year 1	Student (MS)	<u>The Graduate School</u>
2nd Year of Graduate School			
Required Action	Deadline	Who Initiates	Submit to
Check that your Plan of Work is approved and submit a "Request to Graduate" via <u>MyPackPortal</u>	Fourth Semester. Due dates for each semester are posted on the <u>ETD Deadlines page</u>	Student (MS)	<u>The Graduate School</u>
Apply for Graduation via MyPackPortal	By the end of March/October. Exact date for each year to be determined by the graduate school.	Students (MT)	<u>The Graduate School</u>
Submit thesis draft to Advisory Committee	At least two weeks prior to final oral exam	Student (MS)	<u>Advisory Committee</u>
<u>Schedule final oral exam</u> with Advisory Committee	Semester of expected graduation, at least 14 working days prior to proposed exam date	Student (MS)	<u>Graduate Program Secretary</u>
Electronically submit draft of thesis for review	Within 24 hours of passing the final oral exam	Student (MS)	<u>thesis_editor@ncsu.edu</u>
Revise thesis per Advisory Committee requirements and submit final thesis	Due dates for each semester are posted on the <u>ETD Deadlines page</u>	Student (MS)	<u>ETD Website</u>

Appendix B: TATM Degree related Course offerings**

- *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 530 - Textile Quality and Process Control
 - TT 532 - Evaluation of Biotextiles
 - TT 533 - Lean Six Sigma Quality
 - *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 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
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- TTM 501 - Textile Enterprise Integration
 - 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 533 - Lean Six Sigma Quality
 - TTM 535 - Research Methods and Management (Master of Science only)
 - *TTM 561 - Strategic Technology Management in the Textile Complex
 - TTM 573 - Management of Textile Product Development
 - TTM 579 - Textile Design Collection Studio
 - TTM 580 - Consumer Perspectives in Fashion
 - *TTM 581 - Global Textile and Apparel Business Dynamics
 - TTM 582 - Global Textile Brand Management and Marketing
 - *TTM 583 - Strategic Planning for Textile Firms
 - TTM 585 - Market Research in Textiles
 - TTM 588 – Global Perspectives in Textile Supply Chain Management
 - TTM 587 - Advanced Fashion Collection Studio
 - TTM 591 - Special Studies in Textile Technology Management

*Denotes courses also offered via distance education (TOP)
**Not all courses are offered every semester. For a complete listing of current course offerings, see Registration and Records: <https://www.acs.ncsu.edu/php/coursecat/directory.php>

Appendix C: Research Interests of TATM Graduate Faculty

Dr. Kate Annett-Hitchcock, Associate Professor

Creative design of usable, aesthetically interesting and market-appropriate clothing for global consumers, using historical and cross-cultural examples as inspiration. Develop products that improve the quality of life by providing, promoting and maintaining health and well-being.

Dr. Lisa Chapman, Associate Professor & Director of Graduate Programs

Research objectives are to determine how digital technologies such as integral knitting, ink jet printing, CAD for woven, knit and print design, simulation, and digital libraries can be used to bridge the design and manufacturing processes, reduce the cost and time needed for product development, and improve the sustainability of textile products.

Dr. Blanton Godfrey, Professor

Research interests include business management and new product development, statistical graphics, quality and productivity management, strategic planning and deployment, experimental design, reliability, data analysis, and applied statistics.

Dr. Maureen Grasso, Professor

Dr. Grasso's research is interdisciplinary in nature. Recent research focuses on graduate education and enhancing student success. Earlier research focused on sustainable built environment, including thermal and bidirectional solar optical properties of textiles, performance textiles, and fabric recycling from a consumer perspective as well as examining industry practices. Another field of her earlier work was in flammability of children's sleepwear.

Dr. Helmut Hergeth, Associate Professor

Strategic Costing and Planning in Textiles (costing/pricing strategies and economic sustainability, globalization issues in cost management). Textile Technology Management and Knowledge Management (e.g., technology road mapping). Management Education in Textiles (Finance, experiential learning, Business Visualization, etc.)

Dr. Chanmi "Gloria" Hwang, Associate Professor

My research program focuses on sustainable and inclusive apparel design and product development using advancements in digital technology. As a design researcher, I utilize the shared pragmatic viewpoints of research (quantitative and qualitative approaches) and creative practices (technical pattern making and virtual prototyping) to solve practical design problems. Thus, my research results in both physical and digital wearable artifacts and manuscripts.

Dr. Byoungho "Ellie" Jin, Professor

Dr. Jin's research interests center on fashion brands' internationalization, branding, consumers and retailing in emerging markets, and cross-cultural consumer and retail studies.

Dr. Traci Lamar, Professor

Investigation of textile product design; design and development processes, and creation of new fabrics and products; development of textile products including process modeling, and use of technologies such as CAD, electronic knitting, simulation and digital textile printing.

Dr. Karen K. Leonas, Professor

Protective apparel material design and development specifically for resistance to small particle and liquid penetration including surface and chemical modifications of polymeric materials and medical textiles; Polymer and textile weathering and degradation; and Sustainable practices throughout the supply chain.

Dr. Trevor J. Little, Professor

Manufacturing and Management, New Product Development, Design for Manufacturability, Mass-customization, Simulation, Technology Development, and Economic Competitiveness.

Dr. Kavita Mathur, Associate Professor

Healthcare textiles, research promoting health and wellness, wearable technologies, sustainable fashion, refashioning textile waste, upcycling design for reuse applications, material innovation, color and woven textile design, smart textiles design; which includes functional and interactive textile solutions for home and apparel. Performance textile design inspired by nature (biomimicry), bridge other areas of design such as digital communications, sustainable design practices, smart materials and technologies.

Dr. Delisia Matthews, Assistant Professor

With 8 years of experience in the marketing research and retail industries, Dr. Matthews' research interests include consumer behavior, branding, retailing, and fashion consumer groups.

Dr. Marguerite Moore, Professor

Data Mining for Consumer Insight, Country of Origin & Brand Origin in Global Markets.

Kate Nartker, Assistant Professor

Jacquard weaving, Surface Design, design and garment construction.

Dr. Anne Porterfield, Assistant Professor

Use and implementation of 3D Apparel Simulation and Virtual Fitting, Customization, Specialized garments for performing artists.

Dr. Lori Rothenberg, Associate Professor

Data Mining and Big Data Analysis for Economic Competitiveness, Sustainability, Consumer Behavior.

Dr. Abdel-Fattah M. Seyam, Professor and Department Head

Healing performance of bio-based polymers; Smart textiles; Formation of composites and their performance evaluation; shaped seamless woven garments; protection of high performance fibers from UV radiation; Static generation and suppression of textile surfaces.

Dr. Minyoung Suh, Assistant Professor

Utilizing advanced technologies, such as digital conductive printer, pressure sensor, 3D body scanner, pressure sensor, and motion capture system, current research ranges over topics related to the performance and comfort of functional apparel products, including smart clothing, sportswear, foundation garment, and intimate apparel.

Dr. Kristin Thoney-Barletta, Associate Professor, Director of Undergrad. Programs, Assoc. Dept. Head

Textile Supply Chain Modeling, with an emphasis on Scheduling, Inventory Optimization, forward and reverse (Recycling) Supply Chain Logistics, and making Sourcing decisions including Re-shoring

Dr. Andre West, Associate Professor and Director of Zeis Textiles Extension

Study of trends and technology encompassing these trends, relating to the manufactured apparel/ fashion industry and the education of that industry. Incorporation and analysis of technology to predict or track fashion industry change.

Janie Woodbridge, Assistant Professor

Woven design, smart textiles and performance textiles.

Dr. Yingjiao Xu, Professor and Director of Ph.D. Graduate Programs

Market analysis from consumer behavior perspective, recent work focusing on consumer behavior in the Chinese market, luxury fashion consumption, and innovative fashion retailing.