

Textile Technology Management (TTM)

TTM 106 Yarn Formation, Classification and Numbering Systems (1 credit hours)

The course addresses techniques available for manufacturing staple and filament yarns, classification of yarn types, and processes involved in manufacturing staple and filament yarns. The course covers hands-on calculations and measurements of yarn numbering systems including direct and indirect systems.

Prerequisite: TT 105; Corequisite: MA 131 or MA 141 (Calculus I)

Typically offered in Fall, Spring, and Summer

TTM 501 Textile Enterprise Integration (3 credit hours)

Discussion of philosophy, strategy and technology of enterprise integration for textile manufacturing. Survey of enabling technologies such as computer-aided design; computer-aided manufacturing; material handling systems; information systems for control, supervision and planning; and internet resources.

Prerequisite: Graduate standing, Background in textile manufacturing.

Typically offered in Fall only

TTM 508 Sustainability in the Textile and Apparel Industry (3 credit hours)

The textile and apparel industry is competitive global and dynamic. Sustainability with regard to economics, society, and the environment are receiving increased attention from consumers and the industry. Companies desiring a competitive advantage have embraced sustainability as an integral component of their strategy. This course will examine what it means to be "sustainable", what strategies corporations employ to be sustainable as well as multiple ways businesses practice environmental and social responsibility throughout their supply chain. Sources leading to non-sustainability practices will be identified. Tools, certifications, and other methods to assess the overall sustainability of a supply chain and its product will be examined. This includes exploration of LCA, Higg, ZDHC, RSLs, and other commonly used sources in the industry. This class is taught as a seminar/discovery class where much of what you will learn will come through self-discovery activities and sharing results with others.

Requisite: Wilson College of Textiles students only

Typically offered in Spring only

TTM 510 Apparel Technology Management (3 credit hours)

Role of the apparel complex in manufacturing and supplying products on demand to meet the quality and performance of the global customer. The critical juxtaposition of the textile supply together with retail demand studied to understand constraints on manufacturing capacities and elasticities.

Prerequisite: Graduate standing or PBS status

Typically offered in Spring only

TTM 515 Apparel Production (3 credit hours)

Concepts and practices for the production of apparel items, beginning with development of basic fit blocks and extending through the creation of stylized garments using pattern engineering techniques, supported by computerized pattern development.

Typically offered in Fall only

TTM 517 Advanced Computer-Aided-Design for Fashion (3 credit hours)

Exploration of industry design software for apparel and other sewn products. U4ia visual design software, 3D to 2D pattern generation software, Gerber Accumark or Lectra pattern design programs, Adobe Illustrator and Photoshop, and other programs used by the industry to create, market and/or visualize products will be taught. Peripheral equipment essential to the design and visualization process will be included.

Typically offered in Spring only

TTM 519 3D Apparel Visualization (3 credit hours)

This course introduces students to concepts and practices for 3D simulation of apparel products, including preparation of the 2D pattern, avatar manipulation, fabric definition, virtual sewing and draping, and addition of visual effects. Relevant industry software will be used.

Prerequisite: TTM 515 or equivalent

Typically offered in Spring only

TTM 530/TT 530 Textile Quality and Process Control (3 credit hours)

Quality control and improvement methods for textile processes and products including quality systems, statistical control chart procedures, process capabilities, acceptance sampling plans, textiles process and product designs, on-line and off-line control systems and specific quality factors governing textile products and processes and their variabilities.

Prerequisite: TT 420, Corequisite: ST 511 or ST 515

Typically offered in Spring only

TTM 533/TE 533/TT 533 Lean Six Sigma Quality (3 credit hours)

Systematic approach (Lean Six Sigma philosophy) for improving products and processes. Defining the improvement opportunity, measurement system analysis, data collection, statistical analysis, design of experiment (DOE) methods, and statistical process control (SPC) methods. Application of Lean Six Sigma methods to improve product or process.

Prerequisite: ST 361 and ST 371, or equivalent

Typically offered in Spring only

TTM 535/TT 535 Research Methods and Management (3 credit hours)

This course provides students with an understanding and appreciation of the basic principles of research methods when using qualitative, quantitative or a mixed methods approach. This course will provide guidance to students in conducting their thesis project and cover all aspects of a thesis project, including but not limited to the first three chapters, defining the problem, conducting and writing the literature review, use of theories and a conceptual framework, data collection and analyses, ethical considerations and IRB approval, and the Electronic Thesis Dissertation requirements. Students will be assigned additional readings and learning activities that will expand the understanding of the research process. This course is geared to students who have narrowed down their research topic in collaboration with their committee chair.

Restriction: TTM Students, FPS Students, or a Master's of Science in Textiles, Textile Engineering, or Textile Chemistry. Graduate standing or permission of instructor.

Typically offered in Spring only

TTM 545 Weft and Warp Knit Engineering and Structural Design (3 credit hours)

This class is for both designers, engineers, and technicians for garment applications and machine technologies, to design and create a wide range of products using non-traditional materials and techniques, with the options of knitting in both two and three dimensions. Applications can be but are not limited to sports, medicine, Industrial, electronic and entertainment, transportation, interior design, and furniture.

Typically offered in Fall only

TTM 561 Strategic Technology Management in the Textile Complex (3 credit hours)

Management approaches and strategies for forecasting, planning, creating, and implementing technology changes in textile industry complex undergoing rapid market place and global competitive changes.

Prerequisite: Graduate standing or PBS status

Typically offered in Spring only

TTM 573 Management of Textile Product Development (3 credit hours)

The course focuses on an integrated approach to new product design, development and marketing of textile products. This integrated approach includes a) innovation strategy and opportunity identification, b) the design process for textile products, c) market launch, and d) managing innovation. The course include diverse textile end-uses, including apparel, home textiles, transportation textiles, and medical textiles. Trends in textile product development are reviewed. The dynamics of business analysis and strategy, design prototypes, and product analysis and recommendation are analyzed.

Prerequisite: Graduate standing

Typically offered in Spring only

TTM 579 Textile Design Collection Studio (6 credit hours)

Execution of creative projects addressing textile design problems through synthesis of background research and investigation, and knowledge from previous courses; preparation of work for portfolio, juried exhibition and participation in industry based competitions. Professional textile design practices including advanced portfolio development concepts and presentation, development of textile collections for specified end uses with emphasis on ideation, refinement and design development, and visual communication. FTD-TD ABM and TATM graduate students only.

Prerequisite: FTD 374, FTD 475, FTD 476

Typically offered in Spring only

TTM 580 Consumer Perspectives in Fashion (3 credit hours)

Introduction of concepts and theories related to consumer behavior. Analysis of apparel and textile consumers and their decision making processes as well as internal and external influencing factors. Application of consumer behavior models to investigate consumer behaviors pertaining to textile and apparel products through individualized research projects.

Typically offered in Fall only

TTM 581 Global Textile and Apparel Business Dynamics (3 credit hours)

An overview of the economic, competitive, technological and market dynamics of the international textile and apparel industries. Trends in demand, output and trade are reviewed. The dynamic forces shaping and transforming the industry internationally are analyzed. Patterns of change at the global, regional, national and company level are explained and the outlook for the industries is considered.

Prerequisite: Graduate standing or PBS status

Typically offered in Fall and Summer

TTM 582 Global Textile Brand Management and Marketing (3 credit hours)

The course provides an understanding of the global textile brand management and marketing environments, global markets, and marketing programs and organizations. Specific topics include a) the economic, social, political/legal, and cultural environments; b) global textile market opportunities and challenges; c) global textile and apparel marketing strategies, and d) creation and management of global textile and apparel marketing programs. Credit will not be allowed for both TAM 482 and TAM 582. Graduate standing.

Typically offered in Fall only

TTM 583 Strategic Planning for Textile Firms (3 credit hours)

Elements of competitive strategy and planning methods within the textile complex with emphasis on the concepts of strategy in a mature industry, defining business in a global industry, resource allocation through strategic planning methods and implementing strategy in a single business and multi-business firms.

Prerequisite: Graduate standing

Typically offered in Fall only

This course is offered alternate odd years

TTM 585 Market Research In Textiles (3 credit hours)

A study and analysis of quantitative methods employed in market research in the textile industry. Function of market research and its proper orientation to management and decision making.

Prerequisite: TAM (EC) 482

Typically offered in Spring only

TTM 587 Advanced Fashion Collection Studio (6 credit hours)

Graduate level fashion product design. Design and production of a "collection" using various methods of generating patterns for garments, such as flat pattern, draping CAD design techniques. Relationship of body configuration and fabrication to garment design. Emphasis on ideation, creativity, communication, fit quality and exhibition of a fashion collection. Work culminates in a fashion show or static exhibition. Restricted to TATM majors.

P: FTM 315,317, and 318 or FTD215, 216, and 321

Typically offered in Fall and Spring

TTM 588 Global Perspectives in Textiles Supply Chain Management (3 credit hours)

Study and analysis of global textile supply chains. Field trips to textile related companies and organizations are required. Students will conduct a research project on global supply chain issues. Course taught off campus for non US global perspectives. Students may not take this course more than once for the same global perspective.

TTM 591 Special Studies in Textile Technology Management (1-4 credit hours)

Special Studies in Textile and Apparel, Technology and Management to fulfill needs not covered by current offerings. Student and faculty required to submit topics to be covered to director of graduate programs within first week of semester.

Prerequisite: Graduate standing or PBS status
Typically offered in Fall, Spring, and Summer

TTM 601 Seminar (1 credit hours)

Discussion of scientific articles of interest to the textile industry; review and discussion of student papers and research problems.

Typically offered in Fall and Spring

TTM 630 Independent Study in Textile Technology Management (1-3 credit hours)

Problems of specific interest in textile and apparel technology. Preparation of report, in a format suitable for publication required. One-page outline signed by advisor must be submitted within first week of semester.

Typically offered in Fall, Spring, and Summer

TTM 632 Special Studies in Textile Product Development (1-6 credit hours)

Preq: Graduate standing or PBS student. This course is an Independent Study in Textile Product Development to fulfill needs not covered by current course offerings. Student and faculty are required to submit the topic to be covered to the graduate administrator within the first week of the semester. Either a paper or a presentation of a body of work will be the outcome of this effort.

Prerequisite: Graduate standing or PBS status
Typically offered in Fall, Spring, and Summer

TTM 693 Master's Supervised Research (1-9 credit hours)

Instruction in research and research under the mentorship of a member of the Graduate Faculty.

Prerequisite: Master's student
Typically offered in Fall and Spring

TTM 695 Master's Thesis Research (1-9 credit hours)

Thesis research.

Prerequisite: Master's student
Typically offered in Fall and Spring

TTM 696 Summer Thesis Research (1 credit hours)

For graduate students whose programs of work specify no formal course work during a summer session and who will be devoting full time to thesis research.

Prerequisite: Master's student
Typically offered in Summer only

TTM 710 Textile Technology Management (3 credit hours)

The course will discuss economic and technical aspects of managing technology in the textile complex. It will explain how technological change can be planned and thus managed, and it will address the required framework for forecasting, planning, creating, and implementing technological change. Cases of technological change in the textile complex will be discussed.

Requirement: 18TTMPHD
Typically offered in Fall only

TTM 720/FPS 720 Textile Technology - Fibers and Yarns (3 credit hours)

The course covers advanced aspects of processing fibers or filaments into yarns and the interrelation between the yarn mechanics and structure, geometry, and properties of fiber assembly. The theme is the influence of fibers' measured properties on the quality of subsequent yarns and fabrics. The issues associated with the development of a universal model for the prediction of yarn properties, including the role of test methods on reported values, the impact of fiber blends, various parameters associated with quality in textile products including difficulties associated with a definition of "quality" and how all of these impact yarn costs.

Typically offered in Spring only
This course is offered alternate even years

TTM 731 Decision Models and Applications in Textile and Apparel Management (3 credit hours)

This course provides students with an overview of data decision models used in the textile and apparel industry, along with skills to apply them in real-world decision processes. Published academic papers and case studies will augment the teaching and learning in international trade, supply chains, manufacturing processes, quality, marketing, retail and distribution.

Restriction: TTM PhD
Typically offered in Spring only

TTM 750/FPS 750 Advances in Fabric Formation, Structure, and Properties (3 credit hours)

The course covers different aspects of the processing of yarns to products (braided, knitted, woven, and their composites) and the interrelation between the production mechanics and structure, geometry and properties of fiber assembly. Topics in the field are assigned and each student is expected to thoroughly study the topics and write critical papers based on structured assignments and specific questions. Conduct projects from concept to fabric formation, analyses, and evaluation.

Corequisite: TT 550 or TT 551 (or TT 451) or equivalent
Typically offered in Spring only

TTM 761 Supply Chain Management and Information Technology (3 credit hours)

Working knowledge of management concepts and information technologies to design and manage supply chain operations in textile complex. Deals with markets and operations distributed geographically and institutionally.

R: Graduate Students Only
Typically offered in Spring only

TTM 785 Doctoral Research Methods (3 credit hours)

The course in research methods examines contributions to knowledge among the interdisciplinary streams of inquiry that inform global management in textiles and apparel. The course requires active discourse among students regarding: philosophy of science, dominant research paradigms, assumptions of quantitative and qualitative research methods, application of qualitative and quantitative research methods to areas including but not limited to: product development, technology management, supply chain management, textile economics & trade, marketing strategy and consumer behavior. Students are expected to develop particular understanding of the methods commonly applied in their area of interest.

Requirement: 18TTMPHD
Typically offered in Fall only

TTM 791 Advanced Special Studies in Textile Technology Management (1-4 credit hours)

Advanced Special Studies in Textile Technology Management to fulfill needs not covered by current offerings. Students and faculty are required to submit topics to be covered to the graduate administrator before the start of semester.

Prerequisite: Doctoral Student
Typically offered in Fall, Spring, and Summer

TTM 801 Seminar (1 credit hours)
Typically offered in Fall and Spring

TTM 830 Independent Study (1-3 credit hours)
Typically offered in Fall and Spring

TTM 876 Special Project TTM (1-3 credit hours)
Typically offered in Fall only

TTM 885 Doctoral Supervised Teaching (1-3 credit hours)
Teaching experience under the mentorship of faculty who assist the student in planning for the teaching assignment, observe and provide feedback to the student during the teaching assignment, and evaluate the student upon completion of the assignment.

Prerequisite: Doctoral student
Typically offered in Fall only

TTM 890 Doctoral Preliminary Examination (1-9 credit hours)
For students who are preparing for and taking written and/or oral preliminary exams.

Prerequisite: Doctoral student
Typically offered in Fall, Spring, and Summer

TTM 893 Doctoral Supervised Research (1-9 credit hours)
Instruction in research and research under the mentorship of a member of the Graduate Faculty.

Prerequisite: Doctoral student
Typically offered in Fall and Spring

TTM 895 Doctoral Dissertation Research (1-9 credit hours)
Dissertation research.

Prerequisite: Doctoral student
Typically offered in Fall, Spring, and Summer

TTM 896 Summer Dissertation Research (1 credit hours)

For graduate students whose programs of work specify no formal course work during a summer session and who will be devoting full time to thesis research.

Prerequisite: Doctoral student
Typically offered in Summer only

TTM 899 Doctoral Dissertation Preparation (1-9 credit hours)

For students who have completed all credit hour, full-time enrollment, preliminary examination, and residency requirements for the doctoral degree and are writing and defending their dissertations.

Prerequisite: Doctoral student
Typically offered in Fall and Spring