

Textile Technology (BS): Supply Chain Operations Concentration

To see more about what you will learn in this program, visit the Learning Outcomes website (<https://apps.oirp.ncsu.edu/pgas/>)!

The B.S. in Textile Technology provides students with basic knowledge of fiber materials, science and technologies of fiber processing, as well as fiber-based product design and development. The curriculum prepares students in product design and development processes, beginning with understanding of application to material selection to appropriate technologies to utilize.

The Textile Technology degree program offers a well rounded versatile degree, which prepares graduates to collaborate effectively with professionals in a global interdisciplinary environment. After introductory exposure to several of the fundamental aspects of fiber science and textile technology, the student can build additional depth in one of the three concentrations of Medical Textiles, Technical Textiles, and Textile Supply Chain Operations or stay in the general degree which allows students the flexibility of designing their own interest or transferring from other programs or community colleges. The Medical Textiles concentration covers design and methods of production of state-of-the-art textile products and devices used in medical applications including sutures for wound closing to cardiac support devices. The Technical Textiles concentration covers design principles, understanding of applications, and technologies relevant to the vast array of technical textiles materials and products used in such areas as transportation, storage, packaging, automobile engineering, geotechnical engineering, and much more. This concentration offers two options: Materials and Nonwovens. The Textile Supply Chain Operations concentration focuses on the design, management, and coordination all the activities required to transform raw materials into finished textile products to retail. Students in this degree program will participate in the TE/TT Capstone Design Program (<https://textiles.ncsu.edu/tecs/student-experience/senior-design/>), where projects are sponsored by industry partners and government agencies. More information about the degrees is available on the [TECS TT](https://textiles.ncsu.edu/tecs/undergraduate/textile-technology/) (<https://textiles.ncsu.edu/tecs/undergraduate/textile-technology/>) website.

Plan Requirements

Code	Title	Hours
Orientation		
T 101	Introduction to the College of Textiles	1
	Acad Writing Research (p. 2) ¹	4
MA/ST and Natural Sciences		
	Select one of the following: ¹	4
MA 131	Calculus for Life and Management Sciences A	
MA 132	Computational Mathematics for Life and Management Sciences	
MA 141	Calculus I ¹	
MA 231	Calculus for Life and Management Sciences B	3
or MA 241	Calculus II	

ST 311	Introduction to Statistics	3
or ST 370	Probability and Statistics for Engineers	
CH 101	Chemistry - A Molecular Science ¹	3
CH 102	General Chemistry Laboratory ¹	1
	Select one of the following:	4
PY 205	Physics for Engineers and Scientists I	
PY 206	Physics for Engineers and Scientists I Laboratory	
PY 211	College Physics I	
	Select one of the following:	4
PY 208	Physics for Engineers and Scientists II	
PY 209	Physics for Engineers and Scientists II Laboratory	
PY 212	College Physics II	

Major Requirements

EC 205	Fundamentals of Economics	3
FTM 217	The Textile Industry	3
MT 366	Biotextile Product Development	3
PCC 302	Technology of Textile Wet Processing	4
TE 200	Introduction to Polymer Science and Engineering	3
TMS 211	Introduction to Fiber Science	3
MT 105	Introduction to Medical Textiles	3
or TT 105	Introduction to Textile Technology	
TT 327	Yarn Production and Properties	4
TT 331	Performance Evaluation of Textile Materials	4
TT 341	Knitted Fabric Technology	3
TT 351	Woven Products and Processes	3
TT 380	Management and Control of Textile and Apparel Systems	3
TT 401	Textile Technology Senior Design I	4
TT 402	Textile Technology Senior Design II	4
TT 405	Advanced Nonwovens Processing	3
TT 431	Quality Management and Control In Textile Manufacturing	3
TT 481	Design and Technology of Technical Textiles	3

Supply Chain Operations Concentration

TT 480	Operations Management Decisions for Textiles	3
TT 486	Supply Chain Management in the Textile Industry	3
ACC 210	Concepts of Financial Reporting	3
BUS 320	Financial Management	3
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GEP Courses

GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/)	6
GEP Social Sciences (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-social-sciences/)	3
GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)	2
GEP Additional Breadth (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/) (Humanities/Social Sciences/Visual and Performing Arts)	3
GEP Interdisciplinary Perspectives (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/)	5

GEP U.S. Diversity (<http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-us-diversity/>) (verify requirement)

GEP Global Knowledge (<http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-global-knowledge/>) (verify requirement)

Foreign Language Proficiency (<http://catalog.ncsu.edu/undergraduate/gep-category-requirements/foreign-language-proficiency/>) (verify requirement)

Total Hours 120

Acad Writing Research

Code	Title	Hours
Acad Writing Research		
ENG 101	Academic Writing and Research	4
FLE 101	Academic Writing and Research	4
Transfer Sequence		
ENG 202	Disciplinary Perspectives in Writing	3
ENG 1GEP	100 Level English Composition	3

Supply Chain Operations Concentration

Code	Title	Hours
Supply Chain Operations Electives		
FTM 310	Entrepreneurship & New Product Development in Textiles	3
FTM 315	Fashion Product Design	3
FTM 317	Computer-Aided-Design for Apparel	3
FTM 318	Fashion Development Processes	3
FTM 320	Retail Merchandising in Fashion and Textiles	3
FTM 382	Intermediate Textile Brand Management and Marketing	3
FTM 384	Visual Merchandising Principles and Management	3
FTM 385	Fashion and the Consumer	3
FTM 387	Textile Brand Communications & Promotions	3
FTM 400	Major Fashion Designers	3
FTM 415	Fashion Product Development	3
FTM 416	The Fashion Industry	3
FTM 420	Retail Buying in Fashion and Textiles	3
FTM 460	Textile Market Research	3
FTM 481	Product Costing in the Textile and Apparel Industry	3
FTM 482	Advanced Textile Brand Management and Marketing	3
FTM 483	Global Trade & Sourcing	3
FTM 484	Strategic Planning and Decision Making in the Textile and Fashion Industries	3
FTM 485	Textile Computer Integrated Enterprise	3
FTM 487	Textile and Apparel Labor Management	3
FTM 490	Development Projects in Textile and Apparel Management	1-3
FTM 491	Special Topics in Textile and Apparel Management	1-4
FTM 494	International Industrial Internship in Textile Management	3
FTM 497	Senior Fashion Collection Studio	6
FTM 499	Textile Senior Project	4
MT 323	Introduction to Theory and Practice of Medical Fiber and Yarn Formation	3

MT 381	Medical Textile and the Regulatory Environment	3
MT 432	Biotextiles Evaluation	3
MT 471	The Chemistry of Synthetic and Natural Bipolymers	3
NW 408	Nonwoven Product Development	3
NW 503	Materials, Polymers, and Fibers used in Nonwovens	3
NW 504	Introduction to Nonwovens Products and Processes	3
NW 506	Bonding Principles in Nonwovens	3
NW 507	Nonwoven Characterization Methods	3
NW 508	Nonwoven Product Development	3
PCC 201	Impact of Industry on the Environment and Society	3
PCC 420	Textile Dyeing and Printing	3
PCC 471	The Chemistry of Synthetic and Natural Bipolymers	3
TE 533	Lean Six Sigma Quality	3
TMS 521	Filament Yarn Production Processing and Properties	3
TT 407	Characterization Methods in Nonwovens	3
TT 408	Nonwoven Product Development	3
TT 451	Advanced Woven Fabric Design	3
TT 470	Jacquard Woven Fabric Design	3
TT 485	Textile Computer Integrated Enterprise	3
TT 499	Textile Senior Project	4
TT 500	Understanding the Textile Complex	3
TT 503	Materials, Polymers, and Fibers used in Nonwovens	3
TT 504	Introduction to Nonwovens Products and Processes	3
TT 507	Nonwoven Characterization Methods	3
TT 508	Nonwoven Product Development	3
TT 520	Yarn Processing Dynamics	3
TT 521	Filament Yarn Production Processing and Properties	3
TT 530	Textile Quality and Process Control	3
TT 532	Evaluation of Biotextiles	3
TT 533	Lean Six Sigma Quality	3
TT 535	Research Methods and Management	3
TT 549	Warp Knit Engineering and Structural Design	3
TT 550	Production Mechanics and Properties of Woven Fabrics	3
TT 551	Advanced Woven Fabric Design	3
TT 553	Formation and Structure of Woven and Knitted Fabrics	3
TT 570	Textile Digital Design and Technology	3
TT 571	Professional Practices in Textile Design and Technology	3
TT 581	Technical Textiles	3
TT 591	Special Studies in Textile Technology	1-4
TTM 530	Textile Quality and Process Control	3
TTM 533	Lean Six Sigma Quality	3
TTM 535	Research Methods and Management	3

Semester Sequence

This is a sample.

Course	Title	Hours
First Year		
Fall Semester		
CH 101	Chemistry - A Molecular Science ¹	3
CH 102	General Chemistry Laboratory ¹	1
ENG 101	Academic Writing and Research	4
MA 131	Calculus for Life and Management Sciences A ^{1, 2}	3
TT 105	Introduction to Textile Technology (CP)	3
T 101	Introduction to the College of Textiles	1
Hours		15
Spring Semester		
MA 231	Calculus for Life and Management Sciences B ^{1, 2}	3
MA 132	Computational Mathematics for Life and Management Sciences ²	1
PY 211	College Physics I ²	4
TMS 211	Introduction to Fiber Science	3
FTM 217	The Textile Industry	3
GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)		1
Hours		15
Second Year		
Fall Semester		
EC 205	Fundamentals of Economics ²	3
PY 212	College Physics II ²	4
TT 327	Yarn Production and Properties (CP)	4
TT 380	Management and Control of Textile and Apparel Systems	3
GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/)		3
Hours		17
Spring Semester		
ST 311	Introduction to Statistics ²	3
TE 200	Introduction to Polymer Science and Engineering	3
TT 351	Woven Products and Processes (CP)	3
TT 341	Knitted Fabric Technology (CP)	3
ACC 210	Concepts of Financial Reporting	3
Hours		15
Third Year		
Fall Semester		
TT 404	Introduction to Nonwovens Products and Processes	3
TT 481	Design and Technology of Technical Textiles	3
PCC 302	Technology of Textile Wet Processing	4
GEP Social Sciences (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-social-sciences/)		3

TT 480	Operations Management Decisions for Textiles	3
Hours		16
Spring Semester		
TT 331	Performance Evaluation of Textile Materials (CP)	4
MT 366	Biotextile Product Development	3
TT 405	Advanced Nonwovens Processing	3
GEP Additional Breadth (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/) (Humanities/Social Sciences/Visual and Performing Arts)		3
GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/)		3
Hours		16
Fourth Year		
Fall Semester		
TT 401	Textile Technology Senior Design I	4
Textile Supply Chain Oper Elective		3
GEP Interdisciplinary Perspectives (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/)		2-3
GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)		1
BUS 320	Financial Management	3
Hours		13-14
Spring Semester		
TT 402	Textile Technology Senior Design II	4
GEP Interdisciplinary Perspectives (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/)		3
TT 431	Quality Management and Control In Textile Manufacturing	3
Textile Supply Chain Oper Elective		3
Hours		13
Total Hours		120-121

¹ Must be completed with a grade of C- or higher for major requirements

² Acceptable substitutions: MA 141 for MA 131 and 132, MA 241 for MA 231, (PY 205 and PY 206) for PY 211, (PY 208 and PY 209) for PY 212. ST 370 for ST 311, (EC 201 or ARE 201) for EC 205.